

**FROM MĂMĂLIGĂ TO BREAD AS THE ‘CORE’ FOOD OF
ROMANIAN VILLAGERS: A CONSUMER-CENTERED
INTERPRETATION OF A DIETARY CHANGE (1900 - 1980)**

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A DISSERTATION

in

History

Presented to the Faculties of the Central European University
in Partial Fulfilment of the Requirements for the Degree of Doctor of Philosophy

Budapest, Hungary

2015

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ABSTRACT

This study describes a dietary change that had involved the ‘core’ foods of a traditional population’s diet. At the broadest level, the study analyzes from a standard of living perspective the decision of rural residents from a compact region of Romania to switch en masse from a predominant consumption of mămăligă to a predominant consumption of bread during the 1960s. By its topic, my study contributes, empirically, to a better understanding of a major change in the lifestyles of rural residents during an under-researched phase of socialism and, theoretically, to the range of approaches that have been proposed for reevaluating consumers’ experiences during socialism. In addition, the dietary change provides the basic data for, first, an assessment of the debated effects of an early socialization into a food culture on later-life food preferences and, secondly, for a reconsideration of the consumers’ perceptions defined hedonically of the historically European-wide and currently global transition from non-bread to bread dietary staples. The results of my dissertation show a) that the standard approaches for reevaluating consumers’ experiences during socialism fail to capture important ‘unconventional’ developments in consumption practices that are specific to the region, b) that the influence of an early socialization into a food culture can be overridden by competing processes involved in the formation of food preferences and c) that the change from non-bread to bread dietary staples can be more fruitfully interpreted by overcoming binary approaches that assume a general preference either for the established ‘core’ food or for the novel ‘core’ food in favor of a more flexible approach that captures better the complexity of the consumers’ food preferences.

ACKNOWLEDGMENTS

There is the opinion that work on a dissertation is an exercise in endurance and perseverance. Five years after having started the research for my dissertation, I find that it has been such an exercise for me and, accordingly, I would like to thank the people who have helped me shoulder this pleasant 'burden'.

I am grateful to Professor Constantin Iordachi for having accepted to supervise a research project with a rather exotic topic. His guidance in the complicated process of finishing a dissertation and his comments to my several drafts are much appreciated. I am grateful to Professor Bogdan Murgescu for the interest he has constantly showed in my research and for all his advice and support that have helped me navigate more straightforwardly through the complex landscape of Romanian economic statistics. I would also like to extend my gratitude to Professor Peter Scholliers and to the members of the FOST research group from Vrije University, Brussels for having readily adopted me as one of their own members during a research visit in 2013. The opportunity they offered me to present my research at the Annual Research Seminar and their comments have enabled me to reevaluate my theoretical position within the food studies and food history disciplines. With the benefit of hindsight, I have come to appreciate the benefits of having participated at the Third Year PhD Research Seminar organized by the History Department from CEU. I am especially grateful in this regard to Professor Susan Zimmermann and to the participants to the Seminars for their very useful comments and I hope that they will forgive me for having had proposed for discussion the driest sections of my dissertation.

The research for my dissertation has taken me to a number of libraries and archival institutions throughout Romania. I am very grateful to the personnel of these institutions for all their support and I would like to especially thank the anonymous librarian from the Public Health Institute from Iași and Aurel Radu from the Argeș County National Archives for having gone beyond the duties prescribed by their positions to aid me in my research. My engaging debates with Aurel on various historical and archival issues have spiced up the rather tedious task of going through the large number of Annual Reports of Agricultural Cooperatives for subsequent quantitative analysis.

I am immeasurably indebted to my family for the unconditioned support they have showed me during these last five years. If the ability to empathize with a person whose motives you do not fully understand is one of the hallmarks of a historian, I have still much to learn from my parents. My brother, Marius, has been a critical conversation partner and his comments have helped me understand the non-historian's perspective on my arguments. Finally, I am most grateful to Liana for all her patience and understanding. Truly, without her support, this dissertation would not have been written.

This dissertation is dedicated to the villagers who so politely had paused from their daily toil to answer the rather peculiar questions posed by an individual who was seemingly roaming aimlessly through the village. Their understanding and decency have greatly facilitated my task as an interviewer who was just taking his first steps into the field of oral history. Despite their kindness, however, I always felt uneasy about 'troubling' busy villagers with my questions especially since I was well aware that there was very little reciprocity in the exchange. It is my greatest hope that this dissertation will ultimately prove rewarding to the villagers who have so readily accepted to help me.

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INTRODUCTORY CHAPTER

This dissertation discusses the change from a diet centered on mămăligă and maize-based products more generally to a diet centered on wheaten bread: the factors which have promoted it, the meanings attached to it and how it may have been perceived by the consumers who have actualized the change. Such a choice for the central topic of a dissertation may appear exotic to readers from outside a small but thriving group of food historians and anthropologists but I hope to show that a comprehensive analysis of this dietary change has relevance for various disciplines beyond the ‘softer’ branch of food studies. In this sense, I argue that besides its value as one case of the historically European-wide and currently global transition from non-bread starchy staples to bread, a case-study analysis of the transition from mămăligă to bread contributes to a better understanding of the processes of dietary changes and of formation of food preferences. In particular, I argue that my case-study analysis clarifies some of the assumptions entertained by food researchers concerning the influences of an early socialization into a food culture on later-life food preferences, influences which have been frequently hypothesized but not adequately verified. At a more general level, I maintain that my case-study analysis illustrates the benefits of combining historical data and sources of information with the standard methods of analysis from consumer behavior science for studying specific aspects of food practices that are shaped by long-term influences. Finally, I consider that my analysis of the dietary change is relevant for the historical study, first, of the selected region from Romania because it describes an important

development in the lives of rural residents under socialism and, secondly, of the wider East-European region because it underlines the benefits of, and it provides a model for, adopting an anthropological approach in reevaluating consumers' experiences during socialism. The application of an anthropological approach is expected to produce more valid accounts of consumers' experiences during socialism than the customary normative approaches by picking up a set of needs which, like the Romanian rural residents' desire to consume bread, were particular to the region and to a stage of relative economic underdevelopment but which were nonetheless salient to a large group of consumers. It is the task of the present chapter to discuss in detail my dissertation's contribution to all these issues, to present the sources which support my arguments, the methods applied in the analysis of the data and, first and foremost, to familiarize the reader with mămăligă and bread, the two foods involved in the dietary change.

Mămăligă or Bread?: Conceptualizing the decisional process

Consistent with the general consensus among food researchers that dietary configurations are shaped by the interaction of economic, cultural and social factors and by the subjectively perceived and intrinsic sensory qualities of foods,¹ I have

¹ Tanis Furst et al., "Food Choice: A Conceptual Model of the Process," *Appetite* 26 (1996): 247-266, E. P. Köster, "Diversity in the Determinants of Food Choice: A Psychological Perspective," *Food Quality and Preference* 20 (2009): 70-82, Jeffery Sobal et al., "A Conceptual Model of the Food Choice Process over the Life Course," and Paul Rozin, "The Integration of Biological, Social, Cultural and Psychological Influences on Food Choice," in *The Psychology of Food Choice*, ed. Richard Shepherd and Raats, Monique (Wallingford: CABI Publishing, 2006), 1-18 and 19-40 and Jean A. McEwan and David M. Thompson, "A Behavior Interpretation of Food Acceptability," *Food Quality and Preferences* 1 (1988): 3-9. For contributions from anthropology confirming the diversity of influences involved in dietary changes, see the list of factors that had been compiled by Ellen Messer following a review of the major works published up to 1982 on the topics of food practices and dietary changes in Ellen Messer, "Anthropological Perspectives on Diet," *Annual Review of Anthropology* 13 (1984): 205-249 as well as the subsequent review of the field in Sidney W. Mintz and Christine M. Du Bois, "The Anthropology of Food and Eating," *Annual Review of Anthropology* 31 (2002): 99-119. For a food historian's review of the current state and potential contribution of multidisciplinary research to the study of food practices see Peter Scholliers, "The Many Rooms in the House: Research on Past Foodways in Modern Europe," in *Writing Food History: A Global Perspective*, ed. Kyri W. Claflin and Peter Scholliers (London: Berg, 2012), 59-71.

conceptualized the dietary change from mămăligă to bread as a multidimensional process reflecting the influences of a mix of factors. Specifically, I have considered that rural residents who pondered the decision of consuming bread or mămăligă had to take into account, or were influenced in their decisions by, the comparative opportunity of consuming wheat or maize - the primary ingredients of bread and mămăligă -, the labor and time required by the different methods of preparing them into the culturally appropriate dishes, the distinct textural properties, physical appearance and nutritional composition of the final products and the socio-cultural norms and values associated with the consumption of each food. The empirical chapters will discuss in detail how historical developments involving these factors had persuaded rural residents to change from mămăligă to bread and the current section is intended to support my discussion by describing in general these factors, by explaining why certain factors have been included in the explanatory model while others have been excluded and by clarifying some of the assumptions underlying my analysis. The discussion of each factor proceeds in the paragraphs below in a particular order that has not been intended to imply a hierarchical arrangement of factors in terms of their contribution to the dietary change but rather has been selected in view of the advantage of describing the two foods involved in the dietary change as early in the analysis as possible.

Because maize lacks gluten and, therefore, it is unsuitable for the preparation of leavened bread, it has been most commonly prepared by boiling its flour into a thick porridge.² For this purpose, the person responsible with preparing mămăligă needed to have access to a reliable heating source, a pot for boiling the water to which maize flour

² Ellen Messer, "Maize," in *The Cambridge World History of Food*, ed. Kenneth F. Kiple and Kriemhild Conee Ornelas (Cambridge: Cambridge University Press, 2000), 105.

was added and a wooden stick with which to stir the mixture in order to break apart any chunks of uncooked flour. The entire process of cooking mămăligă took between 30 and 45 minutes but it required minimal actual involvement beyond the tasks of preparing the water for heating, pouring the maize flour when the water temperature was appropriate, adding subsequently small quantities of flour to ensure that the mixture had the desired consistency and the occasional stirring. In fact, most respondents to an oral questionnaire administered by myself admitted that preparing a well-made mămăligă was not very demanding. After the maize flour had been properly boiled, mămăliga was turned over a wooden plate, cut into slices using a string as it stuck to metal and eaten by hand with various side dishes. The entire procedure was repeated before each meal since mămăligă was usually consumed while hot or warm although a number of respondents to my oral questionnaire indicated that they prefer to consume mămăligă while cold with certain dishes, that they stored mămăligă for latter consumption when specific circumstances such as working and dinning in the field did not allow the preparation of mămăligă on the spot and that leftovers from previous meals were sometimes reused by frying them in pans or on hot plates. In addition to mămăligă and less frequently by the time of the dietary change, the mixture of maize flour, water, and salt, to which was added a small quantity of wheat bran, wheat flour or sugar, ingredients not used in the preparation of mămăligă, was baked in ovens until a glaze crust formed on the top. The rural residents differentiated this food from mămăligă by referring to it as turtă and recounted that it had been much in use in previous times - in some regions even accompanying mămăligă in every-day use - that they held it in high regard but that its consumption had declined

markedly and swiftly to such an extent that the younger interviewees had consumed it only occasionally.

By contrast, bread was prepared by allowing dough made by mixing wheat/rye flour with water to rise under the action of leavening catalysts before baking it in the oven. Through kneading, the dough became elastic enough to capture the carbon dioxide released during leavening and baking and through baking, the crumb (interior of the bread) increased in volume by becoming more aerated and elastic and a more or less thin crust formed around the crumb at its point of contact with the hot air. For such changes to take place, however, energetic kneading and adequate time allowance for leavening were required and baking had to be done using a heat source that generated and maintained a high temperature all around the bread. For this purpose, rural residents from the relevant region had used typical ovens and, more commonly, *țeșturi* - bell-shaped temporary structures made from earth which were heated over an open fire and then used to transfer the heat uniformly to the dough by being placed over it. Given that properly kneading the dough was a particularly arduous task and that adequate leavening and baking required considerable time, the preparation of bread involved work of higher intensity and demanded a greater expenditure of time than the one-off preparation of an equivalent quantity of *mămăligă*. Nevertheless, because the housewives could prepare all at once an ‘oven’ of bread sufficient to last a number of days as bread was usually consumed while cold, certain rural residents might have preferred the option of concentrating their labor over a shorter time span to the alternative of preparing the equivalent quantity of *mămăligă* in several sessions before each meal especially during the tightly scheduled

harvest season.³ More importantly for my case study, technological developments had facilitated the industrialization of bread production with the result that bread acquired the function of convenience food since consumers had the possibility of purchasing it ready-made from outside the household.

In addition to these differences in the immediate tasks needed to be performed in order to acquire mămăligă and bread, the two foods differed significantly in terms of physical appearance, textural properties and nutritional composition. Specifically, in terms of visual appearance, mămăligă had typically a yellowish color, the result of the rural residents' practice of cultivating predominantly yellow maize varieties, compared to the black, brown, and white colors of bread, which resulted from the use of wheat/rye flour having different extraction rates from grain. In terms of textural properties, mămăligă was more prone to crumbling compared to bread which was compact and had elastic properties, it had a different mouthfeel and a distinct flavor. Moreover, being boiled to a thick consistency but nonetheless retaining high water content, mămăligă blended differently with liquid and semi-liquid foods by being less permeable compared to bread with the result that these foods coated mămăligă rather than being absorbed by it as is the case with bread and its sponge-like properties. Finally, bread and mămăligă differed significantly in terms of macronutrient and micronutrient content per unit of weight despite the fact that maize flour and wheat flour, the principal ingredients of the two foods, differed only slightly in this respect with the notable exception of niacin/tryptophan. Nevertheless, a difference in nutrient density resulted from the

³ Gheorghe Crăiniceanu, *Igiena Țeranului Român. Locuința, Încălțăminte și Îmbrăcămintea. Alimentațiunea în Diferitele Regiuni ale Țerii și în Diferitele Timpuri ale Anului [The Romanian Peasants and Hygiene. Their Houses, Clothing and Footwear, and Diet in Different Regions of the Country and in Different Seasons]* (Bucharest: Lito-Tipografia Carol Göbl, 1895), 234.

addition of considerably more water in the preparation of mămăligă, which adds weight but not nutrients apart from a few minerals to the final product. Suggestive in this sense, a review of the literature on the rural residents' cooking practices has yielded data indicating that 1 kilogram of maize flour was used to produce at least 2.2 kilograms of mămăligă⁴ while 1 kilogram of wheat flour was used to produce at least 1.40 kilograms of bread.⁵ The resulting differences in nutrient content per ingested quantity may have influenced the consumers' total nutrient intake considering the extensive evidence showing that a person's appetite and/or satiation are regulated more by the weight of a food rather than by its nutritional/caloric content (See Chapter 4, Section 3 for a discussion of the literature). Significant for the arguments presented in this dissertation, the fact that bread provided 40% more calories per unit of weight compared to mămăligă and that consumers adjust imperfectly their intake of a food to its caloric content is considered to have had influenced the consumers' relative preferences through the process of energy-based conditioning.

Lastly, the low content of tryptophan, a precursor of niacin, in maize and possibly the presence of niacin in a chemically bounded form which makes it biologically unavailable to the human organism has had historically more important consequences under the form of pellagra, a nutritional disease caused by a deficient intake of niacin.⁶ In

⁴ Moise Enescu and A. Radenschi, "Contribuțiuni la studiul alimentației țaranului moldovean, cu observațiuni asupra regimului pelagroșilor [Contributions to the Study of the Diets of the Moldavian Peasant, with Observations on the Diets of Pellagrins]," *Revista de Igienă Socială [Review of Social Hygiene]* 10 (1937): 457.

⁵ Calculated based on the consumption norm of 720 gr. of wheat flour for every 1 kilogram of bread applicable to baking units during the socialist period.

⁶ On pellagra as a deficiency disease caused by insufficient levels of niacin and/or tryptophan see Conrad A. Elvehjem, "Pellagra: A deficiency disease," *Proceedings of the American Philosophical Society* 93 (1949): 335-339. On the relationship between maize and pellagra, see Grace A. Goldsmith et al., "Studies of Niacin Requirement in Man. II. Requirement on Wheat and Corn Diets Low in Tryptophan," *Journal of Nutrition* 56 (1955): 381-385.

1937 for example, as many as 200000 persons (roughly 1% of the entire population of Romania) had been estimated to have had suffered from pellagra and the persistent high incidence of the disease especially among the rural population from the most affected provinces together with the severity of its pathological manifestations had made pellagra one of the most serious public health problems in Romania during the first half of the 20th century.⁷ Given the nature of the disease, the extent of pellagra in this period is a good indicator of the low nutritional quality of the diets of a large section of the rural population while the state authorities' inability to implement effectively a prevention policy based on the medical consensus that the substitution of bread for mămăligă would be successful in eradicating the disease testifies to the rigidity of established dietary practices. Nevertheless, beyond these aspects, I have decided not to discuss further the pellagra problem in my dissertation because the socialist regime's interest in promoting bread consumption does not appear to have been motivated in any way by concerns with the disease and because I find unlikely that rural residents had increased their bread consumption as a prophylactic measure against the disease or because of a specific 'hunger' for the missing niacin.⁸ Furthermore, it cannot even be confidently argued than

⁷ Ion Claudiu and N. Gruia Ionescu, *Pelagra: Patologie, Sociologie [Pellagra: Pathology, Sociology]* (Ploiești: Spitalul Boli Interne, 1944), 41-42.

⁸ The idea that a specific 'hunger' for the missing niacin may have promoted bread consumption meshes together evidence showing that animal test subjects deprived of certain minerals display a preference for the foods containing the missing nutrient and that the complex preparation technique of soaking maize in lime water before milling it (nixtamalization) may make the chemically bounded niacin available to the human body. An interpretation of the trajectory of the nixtamalization practice based on this evidence would be that it had become originally established because the presence of unbounded niacin had conditioned a preference for the tortilla made from soaked maize and that it had remained established afterwards due to habituation with the particular textural properties of such tortillas. Such an interpretation, however, is difficult to defend considering that some authors have disputed the claim that niacin is present in maize in a form unavailable to the human organism, that some authors consider the simple practice of boiling maize flour in water sufficient to release the niacin from its bounded form and that the authors who have discussed the practice have proposed a different interpretation for it which emphasizes the adaptive value of consuming soaked maize for communities that already preferred the resulting tortilla. On laboratory experiments on animals documenting sodium and thiamine specific 'hungers' see Paul Rozin

the increased availability of bread in rural areas has been indirectly responsible for the general decline in the incidence of pellagra beginning with the 1960s since other factors such as a general improvement in the rural residents' diets and the administration of the previously unavailable Pellagra-Preventive vitamin are better candidates in this regard.

The primary importance of maize flour and wheat/rye flour among the ingredients for mămăligă and bread measured both in terms of monetary value and of the physical labor expended for their production supports the expectation that rural residents had been particularly sensitive in their decisional process to the relative costs and benefits of consuming one or the other cereal. In my discussion of the economic substratum of the rural residents' dietary practices, I have used the market prices for wheat/wheat flour relative to the market prices for maize/maize flour as the principal indicator for the opportunity costs applicable to the primary ingredients of bread and mămăligă. The market prices are an efficient and reliable indicator of the relative financial costs of consuming maize-based or wheat-based products in the case of the majority of rural residents across very different systems of agricultural production and distribution but it has to be mentioned from the outset that they do not reflect adequately the options available to rural residents located at the margins or outside the principal market network.

For instance, unlike the majority of rural residents who could sell more of one cereal and

and Jay Schulkin, "Food Selection," in *Towards a Psychology of Food Choice*, ed. Paul Rozin (Bruxelles: Institut Danone, 1998), 17-56. On the effects of treating maize with alkali on its nutritional value see Solomon H. Katz et al., "Traditional Maize Processing Techniques in the New World. Traditional Alkali Processing Enhances the Nutritional Quality of Maize," *Science* 184 (1974): 765-773. On the interpretation from an evolutionary perspective of the relationship between enhanced nutritional value and the establishment of preparation techniques see Paul Rozin, "Human Food Selection: The Interaction of Biology, Culture and Individual Experience," in *Towards a Psychology of Food Choice*, ed. Paul Rozin (Bruxelles: Institut Danone, 1998), 59-88 and Solomon H. Katz, "Fava Bean Consumption: A Case for the Co-Evolution of Genes and Culture," in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 133-159.

keep more of the other for personal consumption from their own production of both cereals or which could acquire more quantities of one or the other equally available cereals on the market in view of the existing price differential, rural residents from certain hilly and mountainous regions who usually cultivated only maize among cereals on their small plots of agricultural land had to incur the additional expenses of transporting cereals in and out of their region if they wanted to exchange their maize production for wheat supplies. Effectively separated from the larger market by physical and technological barriers, these rural residents had to take into account in their decision to consume and, by implication, to cultivate maize or wheat/rye that maize gave higher yields per seed requirements generally and in particular in geographically less favorable regions and that its output was more sensitive to the application of labor often available in households engaged in smallhold agriculture. On a larger scale, beginning with the 1960s, given the central planners' decision to distribute cereal products on the socialist commercial network primarily under the form of bread, the severe restrictions imposed on the free market and the concentration of the agricultural production and distribution processes into Agricultural Cooperatives and State Enterprises, part of rural residents stopped having access to sufficient quantities of maize to support a diet centered on mămăligă and therefore had no choice but to consume bread. Moreover, those who had access to sufficient quantities of maize had to choose between a different set of options: to purchase cereal products under the form of bread and thus augment their grain fodder supplies or to consume mămăligă and use the money otherwise spent on bread on purchasing a limited range of other goods available on the state market. The implication of this succinct discussion is that no single indicator can represent adequately for all rural

residents during the entire studied period the opportunity cost of consuming bread or mămăligă and, in view of this shortcoming, I have used in my analysis period- and regional-specific indicators in addition to the general market prices.

Finally, socio-cultural norms and practices existed which invested the consumption of bread and mămăligă with rich meanings and which defined the appropriate/inappropriate social context, event or specific side dishes for consuming one or the other food. In this sense, rural residents before the dietary change had recognized bread as the appropriate serving at ritual, festive and workplace meals, as a marker of social status, as a comfort food for the sick and as a special treat for children, norms which I argue had influenced consumption not only in these specific settings but more generally by conveying to rural consumers the information that bread is socially more valued and desirable than mămăligă. Conversely, socio-cultural norms prescribed mămăligă as the appropriate accompaniment for certain side dishes throughout the studied period and the available evidence suggests that rural residents had observed such cultural prescriptions.

This concise presentation of the factors that I will discuss in my dissertation in relation to the dietary change is sufficient to illustrate that the choice to consume bread or mămăligă had numerous ramifications beyond the mere problem of what food was consumed at meals. Specifically, the person responsible with preparing the meal had to consider not just the preferences of the meal participants for bread or mămăligă, preferences influenced by socio-cultural information and physiological processes and dependent on the accompanying side dishes, but also the opportunity of preparing one or the other food in view of their different time, labor and technological requirements and

the desirability of foregoing larger or smaller parts of income for acquiring wheat/rye or maize flour given competing claims on the household's revenue. More broadly, the person managing the decisional process had to evaluate the historically evolving mix of benefits and costs associated with consuming preponderantly bread or mămăligă within successive economic and cultural contexts since historical developments had the potential to diminish or augment the relative relevance of each one of the factors involved. Nevertheless, despite the multiple implications of consuming preponderantly bread or mămăligă, it cannot be automatically assumed that rural residents had invested much thought or significance into the dietary change since they may not have found relevant such implications. It is the task of the next section to show that because the dietary change had involved the 'core' foods of the dietary configuration, it carried important implications for the rural household which distinguished it from dietary changes involving less central food components. Moreover, the relevance of these implications had been magnified by specific economic and cultural contexts to such an extent that, I argue, rural residents had been compelled to actively consider the opportunity of consuming one or the other 'core' food.

The 'Core'-'Fringe' Pattern for Dietary Practices

In the introductory chapter to his study *Sweetness and Power. The Place of Sugar in Modern History*, Sidney Mintz has made the argument that the dietary configurations of most pre-modern sedentary populations followed a well defined 'core'-'fringe' pattern.⁹ According to the author, the dietary configurations of these populations involved

⁹ Sidney W. Mintz, *Sweetness and Power. The Place of Sugar in Modern History* (New York: Penguin Books, 1991), 11, Sidney W. Mintz and Daniela Schlettwein-Gsell, "Food Patterns in Agrarian Societies: The 'Core-Fringe-Legume' Hypothesis. A Dialogue," *Gastronomica: The Journal of Critical Food Studies*

a recognizable 'core' food, commonly the processed product of grains or tubers rich in complex carbohydrates (starch), which formed the element of stability in a diet since it was consumed in largely unmodified form at almost every meal, represented the principal component of the meal since it was consumed in greater quantities than any other component and, in some cases, than all the other components of a meal taken together and it provided most of the required calories and significant parts of the needed macronutrients.¹⁰ By comparison, the 'fringe' component of dietary configurations, which typically sampled a wide variety of food sources, added welcomed diversity to the meal since it was presented under various forms, was consumed in relatively smaller quantities and supplied important nutrients that were absent or present only in insufficient amounts in the 'core' food.¹¹ Within each meal, the 'core' and 'fringe' components formed a functionally inter-dependent pair with the 'core' component providing the bulk of the food needed to satisfy hunger and the calories required for performing the daily tasks while the 'fringe' component added the flavor and texture that facilitated the ingestion of the large quantities of 'core' food and supplied micronutrients essential for physiological well-being.¹² Indicative of this functional relationship, the 'core' foods had been historically consumed only exceptionally without anything else to accompany them while the practice of consuming typical 'fringe' dishes with small or no quantities of typical 'core' foods is largely restricted to social groups from the economically developed regions which can afford to consume considerable quantities of energy-dense animal products or high fiber vegetable products and which subscribe to health notions that

1 (2001): 40-52 and Sidney Mintz and Sharda Nayak, "The Anthropology of Food: Core and Fringe in Diet," *India International Centre Quarterly* 12 (1985): 193-204.

¹⁰ Sidney W. Mintz, *Sweetness and Power*. 9-11.

¹¹ *Ibid.*, 11-13.

¹² *Ibid.*

proscribe the consumption of typical ‘core’ foods.¹³ For the purposes of my analysis, I have considered appropriate to differentiate further the category of ‘core’ foods into the subcategories of principal ‘core’ foods - the type of ‘core’ foods discussed by Sidney Mintz - and of secondary ‘core’ foods. The former category covers those foods that meet all the characteristics described above including, distinctively, a high frequency of consumption while the latter category covers those foods which perform all the functions of ‘core’ foods at individual meals but are consumed only occasionally during the year. The distinction is intended to underline the functional interchangeability of the two categories of foods at the level of the individual meal and the differences in the frequency of consumption at the level of long-term dietary configurations and it has been introduced to reflect better the dietary practices of consumers who frequently use one ‘core’ food at the majority of meals and another ‘core’ food at a limited number of meals.

Bread, mămăligă and, in some cases, turtă had performed the function of principal and secondary ‘core’ foods in the rural residents’ diets during the studied period according to the criteria presented above. First and foremost, the three foods had been consumed at individual meals in quantities consistent with the function of ‘core’ food in terms of both absolute weight and relative weight compared to other components of the meal. For instance, several reports based on carefully collected data on the consumption practices of rural residents during the 1930s had indicated for adults performing medium intensity work average daily consumption levels for cereal flour between 650 gr. (equivalent to 1.5 kg of mămăligă) for 32 consumers (4 families) from Roman County,¹⁴

¹³ Michael Pollan, *The Omnivore’s Dilemma: A Natural History of Four Meals* (New York: Penguin, 2006), 1-3.

¹⁴ Moise Enescu and A Radenschi, “Contribuțiuni la studiul alimentației țăranelui,” 457.

Moldova and 465 gr. (equivalent to 770 gr. of bread) for 44 consumers from Ineu village, Oradea County, Crișana.¹⁵ Anchored between the consumption levels observed in one of the poorest and in one of the richest regions of Interwar Romania, the consumption of cereal products in the studied region may have been closer to the upper limit and certainly not less than the 560 gr. reported by Benetato for 131 adults from Măguri village, Transylvania, a village which had a geographic profile representative for many villages from the studied region.¹⁶ Such consumption levels for cereal products, sufficient to supply impressive loads of 2100 kcal, 1550 kcal and 1900 kcal respectively per day, convincingly affirm the central importance of cereal products within the rural residents' diets, a position rendered more visible by the fact that up to the 1960s cereals had regularly outweighed all other components of a meal taken together excluding milk and fruits. During the 1960s and the 1970s, the consumption of cereal foods had decreased to comparatively more modest levels partly because of a steady increase in the intake of animal based 'fringe' foods and partly because of a decrease in the physical intensity of agricultural labor, but it had nevertheless remained important with adult males performing work of moderate physical intensity still consuming 360 gr. of cereal products per day (equivalent to roughly 500 gr. of bread) as late as 1979-1980, a quantity amounting to 40% of the entire food intake by weight.

Secondly, consistent with the functional relationship described for 'core'-'fringe' pairs, the three cereal products had been rarely consumed alone but almost always in combination with side dishes, a perceived interdependence confirmed by the rural

¹⁵ Grigore Benetato, *Problema Alimentației pentru Individ și Colectivitate [The Nutrition Problem for the Individual and the Community]* (Cluj: Tipografia Cartea Românească, 1939), 185.

¹⁶ Ibid.

residents' practice of expressing their preferences for bread or mămăligă in reference to specific side dishes rather than to the 'core' foods alone. Finally, consistent with the understanding that 'core' components represent the element of stability across meals, either bread, mămăligă or turtă had accompanied 'fringe' foods at the majority of meals during the year. More precisely, mămăligă had been the principal 'core' food up to the 1960s in the diets of the rural residents from the studied region as, for example, it had accompanied 'fringe' dishes, on average, at least at 75% of all meals in 1957. By comparison, bread had been consumed, on average, at most at 25% of all meals (secondary 'core' food) which typically included festive, ritual, public and workplace meals. However, by 1975 at the latest, bread was firmly established as the principal 'core' food while the consumption of maize-based products was restricted to occasional meals (secondary 'core' food) as indicated by a consumption ratio of 10 parts of bread to every part of mămăligă recorded during an observation period of two weeks (one week in Autumn and one week in Spring) for 940 rural residents from 4 villages from the relevant region.¹⁷

In view of these dietary practices involving cereal products, I have opted to reframe the problem of the dietary change from mămăligă to bread as the problem of how bread had evolved from the position of a secondary 'core' food to that of a principal 'core' food. Such a redefinition is intended to convey more efficiently the information that the dietary change had involved essentially a modification in the frequency of consumption of foods which shared important functions within a meal and which had a

¹⁷ Data summarized in Iulian Mincu, *Impactul Om-Alimentație: Istoria alimentației la români din cele mai vechi timpuri și până în prezent [The Human-Nutrition Relationship: A History of Romanian Diets from the Earliest Times up to the Present]* (Bucharest: Editura Medicală, 1993), 287-297.

central position in the larger dietary configuration. Concerning such types of dietary changes, Sidney Mintz has argued that they are the result of significant pressure on the participant communities given that ‘core’ component configurations are commonly rigid. This rigidity is due to the fact that consumers form strong preferences for the sensorial, cognitive and symbolic features of the principal ‘core’ food while economic and ecological constraints limit the possibilities available to consumers for modifying their dietary habits.¹⁸ In this regard, anthropological studies of traditional and modern communities confirm the consumers’ strong preference for the established principal ‘core’ food and there is extensive theoretical support in the consumer behavior literature for assuming such a preference.¹⁹ Alternatively and sometimes in combination, the ecological-economic explanation for the stability of ‘core’ component configurations argues that the multiple connections between the staple crop - its growth rhythm, labor and technical requirements for cultivation and preparation - and every sphere of the consumer’s life, a relationship extensively documented in ethnographic and anthropological studies of subsistence communities,²⁰ made the adoption of a new staple crop prohibitively demanding. The available evidence, therefore, legitimizes Sidney Mintz’s proposal that ‘[despite] the remarkable capacity of human beings to change, and of societies to be transformed, one must nonetheless imagine what would be involved in turning the Mexican people into eaters of black bread, the Russian people into eaters of

¹⁸ Sidney Mintz, *Sweetness and Power*, 13.

¹⁹ Gerd Spittler, “In Praise of the Simple Meal: African and European Food Culture Compared,” in *Changing Food Habits: Case Studies from Africa, South America and Europe*, ed. Carola Lentz (Amsterdam: Harwood Academic Publishers, 1999), 39-40 and Hellen Macbeth and Alex Green, “Nationality and Food Preferences in the Cerdanya Valley, Eastern Pyrenes,” in *Food Preferences and Taste Vol. 2: Continuity and Change*, ed. Hellen Macbeth (Oxford: Berghahn, 1997), 139- 155. For cases of communities that have continued to prefer in the hedonic sense of the term their established ‘core’ foods despite having switched to a novel ‘core’ food, see the Section on the Dietary Conservatism Model from this Chapter.

²⁰ Eric R. Wolf, *Peasants* (Englewood Cliffs: Prentice-Hall, 1966).

maize, the Chinese into eaters of cassava²¹ and, by extension, what had been involved in turning the Romanian rural residents from eaters of mămăligă into eaters of bread.

Specifically in the case of the Romanian rural residents, the combination of a high frequency of consumption and large intake at each meal that had characterized principal 'core' food consumption throughout the studied period magnified the relevance of the mix of costs and benefits associated with consuming predominantly bread or mămăligă. Especially during the first 60 years of the 20th century, the intersection of a high total intake of 'core' foods with a persistent gap in the prices and yields of wheat and maize within an economic context in which the larger part of rural residents from the studied region had to cope recurrently with seasonal and/or annual food shortages made the decision to consume bread or mămăligă equivalent to the alternatives of breaking even or experiencing hunger. During the last 20 years of the studied period, as incomes rose, the prices of wheat and maize drew closer together and the total intake of 'core' food had declined, the importance of the financial implications of consuming bread or mămăligă had diminished but in parallel the importance of the time and labor requirements involved in frequently procuring one or the other food had increased as women moved into industrial employment and had become more active in the Agricultural Cooperatives. Finally, the high visibility of 'core' foods within each meal and within the larger dietary configuration assures that the dietary change from mămăligă to bread could not go unnoticed at the table but rather that consumers had to actively consider, or to have had reacted to, the prospect of consuming preponderantly one or the other 'core' food in view of their hedonic preferences for certain 'core'-'fringe' combinations and of the socio-

²¹ Sidney W. Mintz, *Sweetness and Power*, 13.

cultural norms prescribing such combinations as appropriate or inappropriate. For all these reasons, I believe it is safe to assume that rural residents had actively considered, minimally, the opportunity of switching from mămăligă to bread as they had changed their principal ‘core’ food during the 1960s and, maximally, the opportunity of consuming a hedonically optimum mix of bread and mămăligă during periods of predominant consumption of one or the other food.

Literature Review and Contribution to the Fields of Food Studies and Socialism Studies

The arguments presented above establish the dietary change from mămăligă to bread as one instance of the process of transition from non-bread to bread principal ‘core’ foods that had characterized such culinary and economically diverse societies as 19th century France, late 20th century Mexico,²² Ghana,²³ and Bangladesh,²⁴ and today’s Japan.²⁵ In this sense, my discussion of the Romanian case-study has been structured to contribute to the ongoing debate between the supporters of a dietary conservatism view of the change who argue that consumers had traded hedonic preferences for the convenience of purchasing ready made bread and the supporters of a socio-cultural ‘prestige’ view who argue that the information that bread was socially more valued had promoted a genuine preference for it. My exploration of this topic connects backwardly and forwardly with the other two main research interests of my analysis of assessing

²² Gretel H. Pelto, “Social Class and Diet in Contemporary Mexico,” in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 518, 523-524, 530-531.

²³ Jack Goody, *Cooking, Cuisine, and Class: A Study in Comparative Sociology* (Cambridge: Cambridge University Press, 1996), 180-181.

²⁴ Shirley Lindenbaum, “Loaves and Fishes in Bangladesh,” in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 433, 435.

²⁵ See the data on bread consumption at breakfast for 2007 summarized in Atsushi Kimura et al., “Eating Habits in Childhood Relate to Preference for Traditional Diets among Young Japanese,” *Food Quality and Preference* 21 (2010): 843-848.

against proper empirical data the prediction of the dietary conservatism model that an early socialization into a food culture conditions an enduring hedonic preference for the established foods of that culture and of deriving an appreciation of the consumers' perceptions of the dietary change from a standard of living perspective by integrating it into the wider framework of consumer-supplier relations under socialism. All these topics converge on the problem of the rural residents' preferences for bread or mămăligă at the time of the dietary change and, accordingly, this issue will be discussed first in relation to the dietary conservatism model.

Review of the Literature on the Dietary Conservatism Model and the Contribution of my Study

The influence of an early familiarization with the principal foods and flavors of a culinary culture on later life food preferences has often been assumed but rarely adequately demonstrated given the difficulty of studying the subject matter through conventional laboratory or observational research designs. Specifically, food researchers of various persuasions have assumed such an influence either on theoretical grounds by referring to learning processes which favor early exposures in the formation of food preferences defined hedonically²⁶ or on empirical grounds by referring to cases in which consumers had continued to prefer their established staples even decades after switching to other staples.²⁷ Nevertheless, I consider that the empirical evidence bearing on this

²⁶ Leann L. Birch, "The Development of Food Preferences," *Annual Review of Nutrition* 19 (1999): 45.

²⁷ A selection of such studies that is sufficient to illustrate the consumers' preferences for a variety of established principal 'core' foods includes: Henrietta L. Moore and Vaughan, Megan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990* (Portsmouth: University of Zambia Press, 1994), 63-64, 80, Achim von Oppen, "Cassava, 'The Lazy Man's Food'? Indigenous Agricultural Innovation and Dietary Change in Northwestern Zambia (ca. 1650-1970)," and Joachim Theis, "Changing Patterns of Food Consumption in Central Kordofan, Sudan," in *Changing Food Habits: Case Studies from Africa, South America and Europe*, ed. Carola Lentz (Amsterdam: Harwood Academic Publishers, 1999), 95, 101-102, 106 in the case of millet porridges; Katarzyna J. Cwiertka, *Modern Japanese Diet: Food, Power and National Identity* (London: Reaktion Books, 2006), 69, 73, 77

issue is not sufficiently clear-cut to justify a confident pronouncement either for or against the dietary conservatism assumption. Illustrative in this sense, a review of the literature from the ‘harder’ branches of food studies has returned only 1 study which analyzed the long-term stability of food preferences defined hedonically,²⁸ 1 study which analyzed food preferences defined broadly²⁹ and a number of studies which analyzed the long-term stability of dietary intake.³⁰ These studies have tested the stability of early formed food preferences or, for practical reasons, the stability of early formed dietary practices through rigorous assessment procedures that had been applied to longitudinal data but their results, which typically show low to moderate levels of stability, may not be valid due to limitations in study design and methodology. Summarizing the detailed review of these studies from Chapter 4, the focus of all but one of the studies on

and Shirley Lindenbaum, “Loaves and Fishes in Bangladesh,” 433, 435 in the case of rice and Willy Jansen, “French Bread and Algerian Wine: Conflicting Identities in French Algeria,” in *Food, Drink and Identity: Cooking, Eating and Drinking in Europe since the Middle Ages*, ed. Peter Scholliers (Oxford: Berg, 2001), 195-218 in the case of unleavened ‘Arab’ bread.

²⁸ Jean D. Skinner et al., “Children’s Food Preferences: A Longitudinal Analysis,” *Journal of the American Dietetic Association* 102 (2002): 1641.

²⁹ Sophie Nicklaus et al., “A Prospective Study of Food Preferences in Childhood,” *Food Quality and Preference* 15 (2004): 805-818.

³⁰ For a review of the most important studies on the stability of various aspects of early formed dietary practices including food preferences see Sophie Nicklaus and Eloise Remy, “Early Origins of Overeating: Tracking Between Early Food Habits and Later Eating Patterns,” *Current Obesity Reports* 2 (2013): 179-184. For a review of the most important studies on the tracking of dietary intake of specific food groups (dairy products) or of macro and micronutrients, see Samantha Madruga et al., “Tracking of Dietary Patterns from Childhood to Adolescence,” *Revista de Saude Publica* 46 (2012): 1-9. A selection of the most important empirical studies on dietary tracking includes Amelia A. Lake et al., “Longitudinal Change in Food Habits between Adolescence (11-12 Years) and Adulthood (32-33 Years): The ASH30 Study,” *Journal of Public Health* 28 (2006): 10-16, Femke PC Sijtsma et al., “Longitudinal Trends in Diet and Effects of Sex, Race, and Education on Dietary Quality Score Change: The Coronary Artery Risk Development in Young Adults Study,” *The American Journal of Clinical Nutrition* 95 (2012): 580-586, Deborah Cardomone et al., “Longitudinal Nutrient Intake Patterns of U.S. Adolescent Women: The Penn State Young Women’s Health Study,” *Journal of Adolescent Health* 26 (2000): 194-204, Alissa E. Frémeaux et al., “Consistency of Children’s Dietary Choices: Annual Repeat Measures from 5 to 13 Years (EarlyBird 49),” *British Journal of Nutrition* 106 (2011): 725-731, V. Mikkilä et al., “Consistent Dietary Patterns Identified from Childhood to Adulthood: The Cardiovascular Risk in Young Finns Study,” *British Journal of Nutrition* 93 (2005): 923-931 and Emma Patterson et al., “The Tracking of Dietary Intakes of Children and Adolescents in Sweden over Six Years: The European Youth Heart Study,” *International Journal of Behavioral Nutrition and Physical Activity* 6 (2009): 1-2 *International Journal of Behavioral Nutrition and Physical Activity* 2009, 6:91 doi:10.1186/1479-5868-6-91.

composite concepts such as dietary practices or general preferences which reflected other dimensions of food behavior besides consumers' preferences defined hedonically, the selection of a short observation period for assessing the dietary practices that needed to be compared longitudinally and the comparison of results elicited through different assessment procedures reduced the degree of stability that could be observed. If the existing studies cannot disprove the dietary conservatism assumption, the studies which have reported marked levels of consistency between early and later life food preferences or dietary practices cannot prove its adequacy either since they did not, and in the latter case could not, disassociate the effects of early consumption from those of continued consumption of the target foods. By comparison, food anthropologists and sociologists have been in a better position to study the stability of early formed dietary preferences by focusing on consumers who had changed their dietary practices but their assessment procedures are loosely structured and the resulting pronouncements rather general in character (see Chapter 4, Section 2). Considering the differences in physical, nutritional and symbolic properties between the established 'core' foods (tortillas, porridges, rice and even unleavened breads) and bread and the corresponding differences at the level of 'fringe' dishes, I suspect that the common pronouncements that consumers generally prefer their established principal 'core' foods over novel 'core' foods fail to describe adequately the complexity of consumers' preferences when these are assessed at the level of 'core'-'fringe' combinations.

My approach to the problem has been to evaluate the relative preferences of consumers who have been early socialized into a dietary pattern centered on mămăligă for combinations of bread or mămăligă with typical 'fringe' dishes. Such an approach is

expected to overcome the limitations of existing studies by assessing in a systematic manner the rural residents' current relative preferences for bread or mămăligă with six 'fringe' dishes having different physical, nutritional and symbolic properties and by selecting respondents that had consumed predominantly mămăligă during childhood and early adulthood but who had switched to bread at some point during their lives. The design of my study permits the rejection of a general, hard version of the dietary conservatism assumption if the pattern of responses obtained for at least one of the 6 'core'-'fringe' combinations indicates at a given level of confidence that the majority of the target rural population had preferred the 'bread'-'fringe' combination over the 'mămăligă'-'fringe' combination. In addition to these aspects of research design, a pattern of responses indicating that the majority of the rural population from the relevant region currently prefers certain 'fringe' dishes with bread more than with mămăligă enables a confident rejection of the dietary conservatism assumption since consumers' preferences for principal 'core' foods have been found in the studies listed above to exhibit greater degrees of stability compared to other components of the diet. Furthermore, consistent with the understanding that it is methodologically easier to reject than to confirm a hypothesis in observational studies,³¹ the study design permits the confirmation of a narrower version of the dietary conservatism assumption if the pattern of responses indicates that at least one 'core'-'fringe' combination is currently preferred by the majority of rural residents with mămăligă on condition that the respondents do not currently consume those side dishes more frequently with mămăligă than with bread and that other competing factors cannot explain such a preference. The competing factors that

³¹ Peter Y. Chen and Paula M. Popovich, *Correlation: Parametric and Nonparametric Measures* (Thousand Oaks: Sage Publications, 2002), 5.

I will consider in my analysis include the influence of socio-cultural norms which explicitly prescribe the consumption of certain ‘fringe’ dishes with mămăligă and the effects of the calorie-based conditioning processes on the respondents’ genuine or stated preference for certain mămăligă-‘fringe’ combinations. Nevertheless, even after these factors are discounted the possibility still remains that another factor which has been related functionally or incidentally with the predominant consumption of the respective combination before the 1960s may explain the observed result.

Over and above its specific contribution for understanding the rigidity of early formed dietary practices, my case study illustrates at a more general level the potential benefits of overcoming the largely parochial research practices of the ‘harder’ and ‘softer’ branches of food studies. More precisely, I believe that my case study shows that by combining historical data and sources of information with the standard methods of analysis from consumer behavior science, certain aspects of food consumption that are costly, impractical or unethical to evaluate or replicate in laboratory or more naturalistic settings can be analyzed using information readily available in the historical record.³² In the opposite direction, I argue that historical, anthropological and sociological studies of food can benefit from the construction of more systematic research designs of the type commonly used in the ‘harder’ branches of food studies and from the application of methods of statistical inference to sample data especially when it comes to enhancing the robustness and external validity of their findings.

³² Similar advantages have been cited by Thad Dunning for the study of natural experiments from the historical record in Thad Dunning, *Natural Experiments in the Social Sciences: A Design-Based Approach* (Cambridge: Cambridge University Press, 2012), 7.

Review of the Literature on the Transition from Non-Bread to Bread ‘Core’ Foods and the Contribution of my Study

The Dietary Conservatism Model suggests that rural residents had increased their consumption of bread despite their hedonic preferences for the established principal ‘core’ foods of their diets and an interpretation along these lines of the dietary transition in the European context has been cautiously proposed by Gerd Spittler and by Elisabeth Meyer-Renschhausen.³³ Alternatively, the Socio-Cultural ‘Prestige’ Model of the dietary change suggests that rural residents had been motivated to increase their consumption of bread by a genuine hedonic preference promoted by the information that bread was socially more valued than *mămăligă*. The Socio-Cultural Prestige Model builds on the finding that individuals consume not just the food in its materiality but also the signs and symbols associated with it with the result that a food may be liked or disliked depending on whether such contexts of meaning are perceived positively or negatively by consumers.³⁴ The empirical evidence in this regard comes from studies on advertising which show that consumers rate foods differently when these are presented with or without external information such as brand names,³⁵ prices or the evaluations of other consumers³⁶ in a direction consistent with the consumers’ appreciation of such aspects

³³ Gerd Spittler, “In Praise of the Simple Meal,” 37-40 and Elisabeth Meyer-Renschhausen, “The Porridge Debate: Grain, Nutrition, and Forgotten Food Preparation Techniques,” in *Changing Food Habits: Case Studies from Africa, South America and Europe*, ed. Carola Lentz (Amsterdam: Harwood Academic Publishers, 1999), 186-187, 204-205.

³⁴ Roland Barthes, “Toward a Psychosociology of Contemporary Food Consumption,” in *Food and Culture. A reader (3rd Edition)*, ed. Carole Counihan and Penny van Esterik (New York: Routledge, 2013), 23-31.

³⁵ R. Di Monaco et al., “The Effect of Expectations Generated by Brand Name on the Acceptability of Dried Semolina Pasta,” *Food Quality and Preference* 15 (2004): 429-437, C. Lange et al., “Impact of the Information Provided to Consumers on their Willingness to Pay for Champagne: Comparisons with Hedonic Scores,” *Food Quality and Preference* 13 (2002): 597-608, Gianluca Stefani et al., “Consumer Expectations, Liking and Willingness to Pay for Specialty Foods: Do Sensory Characteristics Tell the Whole Story?,” *Food Quality and Preference* 17 (2006): 53-62.

³⁶ On the influence of the informational structure implied by using foods as rewards or as the subject of reward on food preferences see the review of the literature from Lucy J. Cooke et al., “Facilitating or

and from observational studies which show that consumers accept or reject to consume foods which they deem appropriate or inappropriate by reference to various criteria. This evidence that information external to the food proper contributes to the formation of food preferences and practices has been interpreted by several authors to suggest that the European rural consumers might have come to prefer bread over non-bread principal 'core' foods in view of the rich meanings associated with bread consumption.³⁷ Specifically, the functions performed by bread across the European continent: of the 'core' food of prestigious social groups, of 'core' food at ritual and festive meals and, at least in the Romanian case, of comfort and reward food, are considered to have had contributed to a relative valorization of bread consumption over established 'core' food consumption, a social judgment which once internalized by the members of the community as a relative preference for bread had been responsible for the observed increase in bread consumption once economic conditions had permitted it.

The evidence that I present in my dissertation on the rural residents' preferences for combinations of 'fringe' dishes with bread or mămăligă at the time of the dietary change permits an evaluation of how well the predictions of the Dietary Conservatism and of the Socio-Cultural Prestige models describe the consumers' preferences for novel or established 'core' foods. More broadly, the data from the Romanian case study permits

Undermining? The Effect of Reward on Food Acceptance. A Narrative Review," *Appetite* 57 (2011): 493-497 and the empirical studies by Joan Newman and Alan Taylor, "Effect of a Means-End Contingency on Young Children's Food Preferences," *Journal of Experimental Child Psychology* 53 (1992): 200-216, Leann L. Birch et al. "The Influence of Social-Affective Context on the Formation of Children's Food Preferences," *Child Development* 51 (1980): 856-861 and Leann L. Birch et al., "Eating as the 'Means' Activity in a Contingency: Effects on Young Children's Food Preferences," *Child Development* 55 (1984): 431-439. On the influence of peer pressure on consumers' food preferences see Leann L. Birch, "Effects of Peer Models' Choices and Eating Behaviors on Preschoolers' Food Preferences," *Child Development* 51 (1980): 489-496. All these studies are discussed in detail in Chapter 4, Section 1.

³⁷ Massimo Montanari, *Food is Culture*, trans. Albert Sonnenfeld (New York: Columbia University Press, 2006), 72, Stanley Brandes, "Maize as a Culinary Mystery," *Ethnology* 31 (1992): 332, 335-336 and Gerd Spittler, "In Praise of the Simple Meal," 39-40.

an evaluation of the adequacy of a binary approach that assumes either a general preference for the novel principal ‘core’ food or a general preference for the established principal ‘core’ foods relative to a more flexible approach which assumes that consumers can prefer simultaneously certain ‘fringe’ dishes with mămăligă and other ‘fringe’ dishes with bread. This mixed model of preferences, rather than arguing that the increase in bread consumption had either satisfied or went against consumer preferences, suggests that the European consumers may have experienced the transition from non-bread to bread principal ‘core’ foods simultaneously as a fulfillment and frustration of their preferences as both the novel and established ‘core’ component configurations may have deviated in different directions from an optimum configuration defined hedonically. Under this model, a proper evaluation of the European consumers’ perception of the dietary change from a hedonic perspective would therefore require a solution to the question of whether the ‘core’ component configurations centered on bread deviated from an optimum ‘core’ component configuration to a greater or lesser extent than the ‘core’ component configurations centered on the established ‘core’ foods.

Beyond its contribution to the scholarly debate on consumers’ preferences for novel or established ‘core’ foods, my analysis of consumers’ hedonic preferences for bread, mămăligă or for a combination of ‘fringe’ dishes with both ‘core’ foods clarifies the position of an important factor in the dietary change in the Romanian case study. In particular, the results of my analysis show not just whether the dietary change fitted with or went against consumers’ preferences defined hedonically but also, by identifying potential incongruities between dietary practices and consumers’ preferences, that other factors have had the potential to outweigh their liking/disliking of one or the other ‘core’

food. Based on the findings from my dissertation, I argue that an assessment of the consumers' perceptions of a dietary change involving 'core' foods from a standard of living perspective needs to take into account a number of additional factors besides hedonic preferences and a model for such an assessment is provided in the Concluding Section of my dissertation.

Review of the Literature on the Consumers' Experiences during Socialism and the Contribution of my Study

The demise of Socialist regimes in Central and Eastern Europe has promoted a narrative on consumers' experiences during socialism which emphasizes the pervasive perception of shortage and unmet expectations almost to the complete exclusion of the more balanced assessments presented by previous generations of economic historians of the socialist economic systems.³⁸ This dominant discourse underlines the socialist regimes' practice of legitimizing their rule through promises of future consumption at the expense of present consumption³⁹ and/or their inability compared to the free-market systems to cater adequately to consumer expectations because of their economies' relative inflexibility in creating and fulfilling 'needs'.⁴⁰ The past decade has brought, however, a welcomed turn in socialism studies towards more context-sensitive, less normative approaches in the interpretation of consumers' experiences and practices.⁴¹ Such approaches promise to inform more valid assessments of consumers' experiences

³⁸ Alec Nove, *The Soviet Economic System (3rd Edition)* (Boston, Allen & Unwin, 1986), 227-278 and Janos Kornai, *Economics of Shortage* (Amsterdam: North-Holland, 1980), 382-384.

³⁹ Greg Castillo, "Domesticating the Cold War: Household Consumption as Propaganda in Marshall Plan Germany," *Journal of Contemporary History* 40 (2005): 261-288.

⁴⁰ Katherine Verdery, *What was Socialism and What Comes Next?* (Princeton: Princeton University Press, 1996).

⁴¹ Paulina Bren and Mary Neuburger, *Communism Unwrapped: Consumption in Cold War Eastern Europe* (New York: Oxford University Press, 2012) and Nadère Ragaru and Antonela Capelle-Pogăcean, *Vie Quotidienne et Pouvoir sous le Communisme. Consommer à l'Est* (Paris: Karthala, 2010).

by refocusing research on how socialism had actually been experienced rather than on how it measured up to Western performances or to Marxist ideals. However, while researchers have readily recognized the benefits of a consumer-centered approach, the absence of a clear guideline for applying it may have been responsible for the tendency of those researchers to fall back in their analyses on tried and tested categories of consumer products (especially on durable goods) and to relatively neglect ‘unconventional’ consumption practices specific to the region. This emphasis on a narrow selection of consumer goods has been reinforced by a disproportionate interest in the more ‘familiar’ but privileged social groups - an interest itself promoted by the difficulty of uncovering ‘unconventional’ consumption practices and by the convenience of analyzing groups for which durable goods had been the object of paramount desire - that were commonly urban, often the residents of important cities and frequently holders of high economic and cultural capital. As a result of this generally narrow focus, I believe that the new research has actually ended up reproducing a softer version of the ‘Western’-centric narrative which it intended to replace and, because it does not represent adequately the consumers’ experiences during socialism, its contribution to a better understanding of the trajectory of socialist regimes is rather limited.

My discussion of the rural residents’ perceptions of the rising consumption of bread from a standard of living perspective outlines the merits and difficulties of applying a less normative, more consumer-centered approach in reevaluating consumers’ experiences during socialism. Building on findings which underline the creative potential

of consumers to invest consumption practices with meanings,⁴² I argue that the consumers' horizon of expectations during socialism cannot be approximated adequately by relying on Western or elitist consumption norms but that it has to be retrieved using an anthropological approach in the tradition of Clifford Geertz's 'thick' description.⁴³ The evidence presented in my dissertation is suggestive in this sense as it shows that the increase in bread consumption, at first glance a less glamorous change in lifestyles than the typical changes discussed in the literature, had been particularly relevant for the rural residents from the studied region as they had invested it with rich meanings and as it carried important implications for them. In addition to this finding, information collected through unstructured discussions with rural residents of appropriate age had further revealed the relevance of such unconventional developments during socialism as the opportunity to wear urban fashions, to have a house built from prefabricated rather than the customary construction materials or to consume greater quantities of highly prestigious animal fats. In view of this evidence, I believe that the application of an anthropological approach is necessary to identify such locally specific needs which, I argue, reflect better than the customary selection of goods the horizon of expectation of rural residents. My argument that the current emphasis on durable goods (automobiles, gas ovens, washing machines, vacations houses) fails to represent adequately the horizon of expectations of consumers under socialism may become more palatable if it is considered that the majority of rural residents - a large section of the population of

⁴² Melissa Caldwell, "Domesticating the French Fry: McDonald's and Consumerism in Moscow," *Journal of Consumer Culture* 4 (2004): 5-26 and Yungxiang Yan, "Of Hamburger and Social Space: Consuming McDonald's in Beijing," in *Food and Culture. A Reader (3rd Edition)*, ed. Carole Counihan and Penny van Esterik (New York: Routledge, 2013), 449-472. These articles show how a highly standardized consumption act has been invested with different meanings in Western and non-Western cultures.

⁴³ Clifford Geertz, "Thick Description: Toward an Interpretative Theory of Culture," in *The Interpretation of Cultures*, ed. Clifford Geertz (New York: Basic Books, 1973), 3-30.

Romania - did not have access, for example, to such basic utilities as electrical power as late as 1965⁴⁴ or running water or reliable cooking gas until much later.

My case study analysis of the dietary change is intended not just to underline the benefits of retrieving the consumers' perceptions of consumption acts but also to offer a model for retrieving such perceptions in a centrally-planned, non-market system in which production responded inadequately to consumer demand and in which the majority of products were commercialized at fixed prices. In the absence of such market signals, I argue that the consumers' expectations may be retrieved by sampling a wide variety of sources (archival, secondary literature, retrospective ethnographic interviews) and by the application to the collected information of deductive and inductive methods of interpretation grounded in multidisciplinary theories of consumer behavior. The innovative character of my approach does not emerge in this regard from the use of any particular category of sources or methods but from their combined application to a single problem in an attempt to make up for the blind spots of each category and to crosscheck conclusions against data from categories that are affected by different sources of error.⁴⁵ Equally important as these technical aspects, the model of analysis stresses the importance of acknowledging that consumers were engaged in a process of constantly redefining their expectations and of evaluating their degree of fulfillment. Significant for my analysis, the literature on consumer behavior suggests that consumers' expectations were bounded downwards by their attained standard of living so that a fall from their current position was perceived negatively irrespective of a previously substantial record

⁴⁴ Arhivele Naționale ale României. C.C. al P.C.R. Secția Economică, 19/1966.

⁴⁵ Nigel G. Fielding and Jane L. Fielding, *Linking Data* (Newbury Park: Sage Publications, 1986), 23-35. See also the section on sources.

of positive consumer experiences. The implication of this observation on consumer behavior is that developments in the distribution of bread through the state commercial network such as a series of much resented changes in the output mix from low cost, low profitability varieties to high cost, high profitability varieties may have largely overshadowed the marked increase in the availability of bread from just a few years before. More broadly, given a system that immediately politicized economic performance, any such developments that went against consumer preferences had the potential to significantly diminish the extent to which the regime could capitalize politically from one of its more successful attempts at shaping rural lifestyles.

Defining the Spatial and Temporal Coordinates of the Analysis

Defining the Spatial Coordinates

My study focuses on the consumption experiences of rural residents from a region that corresponds roughly to the present-day counties of Gorj, Vâlcea, Argeş, Dâmboviţa and Prahova. This region has been selected in order to maximize the likelihood that the majority of rural residents from the unit of analysis had changed from mămăligă to bread in terms of the principal ‘core’ foods of their diets. In this sense, preliminary archival evidence indicated that during the first three Quarters of the Agricultural Year (October-June) 1975-1976, an average of 87.8 kg of industrially produced bread was distributed per rural resident in the region compared to a national average of 32 kg (see Chapter 2, Section 3 for more information). Such a quantity, if distributed perfectly and used only for human consumption, would have been sufficient to cover 84% of the daily intake of ‘core’ products, a finding which supported the assumption that the majority of rural residents from the selected region were consuming predominantly bread by the second half of the 1970s. Alternatively, data from dietary studies, which incidentally are most

abundant for the Sub-Carpathian regions of Muntenia and Oltenia which include the larger part of the studied area, indicated that the vast majority of rural residents from the selected region had consumed overwhelmingly mămăligă up to the 1960s. Furthermore, the data suggested that a larger share of the rural population from the selected region consumed predominantly mămăligă compared to the neighboring plain region and, quite possibly, compared to the Old Kingdom of Romania more generally. Accordingly, the selection of the particular region of five counties permitted the identification of the greatest number of rural residents who have changed from mămăligă to bread during the 1960s and the 1970s while keeping the tasks of collecting further data bearing on the dietary change within manageable limits. Additionally, the region of five counties satisfied the important requirement that the selected region be as homogenous as possible in terms of consumption practices (ideally, all rural residents to be consumers of mămăligă up to a point and all consumers of bread afterwards) given the highly aggregated nature of the data for some of the factors that I intended to relate to the principal consumption of one or the other ‘core’ food. Because data has been usually available only at macro level, variables could not have been related to consumption practices based on a strict correspondence at the individual level (consumer who had/did not have the variable of interest consumed/did not consume bread preponderantly) but only with approximation at the regional level (X% of consumers had/Y% of consumers did not have the variable of interest while Z% of rural residents consumed bread preponderantly and W% consumed mămăligă preponderantly). In view of my methodological principle of giving precedence to competing interpretations whenever the observed data was ambiguous, a less heterogeneous region is, other things being equal,

more informative than a more heterogeneous region and, accordingly, the selection of the particular region of five counties was comparatively more advantageous.

The selected region was less heterogeneous than other possible candidates but it was nonetheless heterogeneous both in terms of dietary practices and in terms of access to maize products (from both commercial and non-commercial sources), to wheat products (both under the form of cereals and of bread) and to monetary incomes. The variation in these factors resulted from, or at least was associated with, the geographic diversity of the region. In particular, most rural residents from the selected region had lived throughout the studied period in hilly and mountainous areas (roughly defined by altitudes higher than 300 meters above sea level) but roughly a quarter of them (283100 out of 1283500), ranging between counties from over a half in Dâmbovița to very few in Gorj and Vâlcea, had lived in plain areas.⁴⁶ These differences in location are important because the available data suggests that the factors mentioned above have maintained a longstanding but changing relationship with the major geographic units of the region. For example, rural residents from plain areas appear to have had consumed bread more frequently than rural residents from hilly and mountainous regions up to at least the 1940s but less at least during the 1970s, to have had access to larger quantities of wheat and maize cereals throughout the studied period but to lower quantities of industrially-produced bread and of commercially distributed maize flour during socialism and to have had lower total and monetary incomes at least after the collectivization of agriculture. In addition to these differences, the secondary literature and un-elicited information from

⁴⁶ Calculated based on the information from Leonida Colescu, *Dicționarul Statistic al României întocmit pe baza rezultatelor definitive ale Recensământului General al Populațiunii din 19 decembrie 1912. Vol. I: Argeș-Iași și Vol. II: Ialomița-Vlașca* [The Statistical Dictionary of Romania Based on the Definitive Results of the General Census of the Population from 19th of December, 1912. Vol. I: Argeș- Iași and Vol. II: Ialomița-Vlașca] (Bucharest: Institutul de Arte Grafice C. Sfetea, 1914 and 1915).

the oral questionnaire indicate a possible East-West divide in consumption practices that cut across geographical units. Specifically, rural residents from regions corresponding roughly to the present-day counties of Gorj and, largely, Vâlcea are presented as having had consumed much greater quantities of maize flour under the form of turtă than the rest of the rural residents from the selected region. All these differences have informed my analysis, first, of the relation between ‘core’ food consumption practices and a selection of factors and, secondly, of the profile of the rural population from the selected region based on sample data. More concretely, because each geographic unit is less heterogeneous than the larger regional unit, whenever the data had permitted it, the relevant factors and consumption practices have been related to each other at this sub-regional level. Finally, whenever regional estimates had been required and only micro-level data had been available, the results from the application of statistical methods to the sample data have been corrected using the percentage of rural residents from each geographic unit as weights in the generalizing procedure.

The presentation of the analysis performed at the individual level and at the level of Argeş County completes the discussion of the units of analysis used in my study and of their relationship to territorial units. The opportunity to manage the entire process of data collection and analysis on the topic of current preferences for ‘core’-‘fringe’ combinations has enabled me to relate the early consumption practices of rural residents and their current preferences for bread or mămăligă with a sample of 6 ‘fringe’ dishes at the appropriate individual level. However, while the unit of analysis is in this case the individual, the macro-unit for which the data is relevant may be restricted to Argeş County alone since my entire sample consisted of 15 villages from the various

geographic and economic regions of the County.⁴⁷ The decision to limit my analysis to Argeş County was partly motivated by cost considerations and time pressures but partly also by early results which had shown no differences in the configuration of relative preferences for bread or mămăligă between the various regions of the County (East vs. West or Mountainous and Hilly vs. Plain) and by the assumption that dietary preferences are unlikely to have been defined by County borders. Nevertheless, the potential limitations of using a sample from a specific region have to be acknowledged and, together with them, the possibility that my results on the configuration of dietary preferences may not be entirely representative across the region. For instance, the finding that rural residents from the eastern part of the region had consumed turtă more frequently than the rest of the residents has to be incorporated into my interpretation of the dietary change from a hedonic preference perspective since turtă had been selected by rural residents as the most preferred accompaniment relative to both mămăligă and bread with at least one of the 6 side dishes. In addition to the rural residents' current preferences for bread or mămăligă, the proportion of rural residents who had access to sufficient quantities of maize to support a diet centered on mămăligă has been estimated directly only for Argeş County since information on the quantities of maize supplies obtained from Private Plot production and from Agricultural Cooperatives has not been available for the other counties at the appropriate level of aggregation. Based on the results for Argeş County, the proportion of rural residents from the entire region has been assessed by adjusting for differences in geographic configuration and distribution of maize supplies through the socialist commercial network. Given these differences in the

⁴⁷ The surveyed villages are Rociu, Căteasca, Retevoieşti, Bogaţi, Cerbu, Curteanca, Drăganu, Lăzăreşti, Ungheni, Băiculeşti, Mărghia, Măniceşti, Popeşti, Izvoru and Recea.

estimation procedures, I consider that the findings of my analysis on the availability of maize supplies and on the current and past relative preferences for ‘core’-‘fringe’ combination are accurate for Argeş County and reasonably accurate for the whole region.

Defining the Temporal Coordinates

My study follows the ‘core’ food consumption practices of rural residents from the relevant region over a period of 80 years, from 1900 to 1980. In selecting such a long period for analysis, my intention has been to assure adequate variation in dietary practices and in the factors potentially related to such practices and to demonstrate that the dietary patterns centered on mămăligă had been firmly established for a long period before the dietary change had happened. In this sense, the selected period covers both times of predominant consumption of mămăligă (roughly between 1900 and 1960) and of bread (roughly between 1960 and 1980) and, in the case of predominant consumption of mămăligă, times when rural residents had been actively engaged in the world wheat trade (1900-1914, 1930-1931 and 1936-1940) and participated in the co-dependent smallhold-large farm production system (1900-1914), when rural residents had been outside the world wheat trade (1921-1929 and 1932-1935) and participated in the consolidated smallhold production system (1921-1962) and when rural residents had been affected by the socialist regime’s policies of rapid industrialization and urbanization (1950-1960).

Seen from a purely research design perspective, the selection of an even longer period would have conferred certain advantages but I have, nonetheless, decided to limit my analysis to the 1900-1980 interval primarily because of the scarcity of adequate data for periods on either side of this interval. In particular, I have not been able to identify a major dietary study prior to 1900 that satisfied my criteria for inclusion in the analysis

and which was needed to qualify the macro-level data while for the 1980s the quality of the relevant data has been found to be generally unsatisfactory. In addition, the selected time interval already posed the challenge of adequately conducting an analysis that involved very different political, economic and social regimes, a problem that would have been particularly compounded by an extension of the analysis to the meager last decade of the socialist regime. In fact, to make manageable the project of researching a period of 80 years, I have considered necessary to limit my analysis to strictly those factors that have immediately contributed to the dietary change without exploring further the broader context of the change. In part, this approach reflects my interest of studying the dietary change in its own right rather than as a starting point for revisiting from a novel perspective the political and/or economic regimes which had succeeded each other during the selected time period and, given this purpose, indicators that summarized multiple aspects of rural life without requiring their detailed presentation were relatively more suitable for practical reasons. In addition, I have decided to concentrate my analysis on a period of 20 years (between 1960 and 1980) when the consumption data suggest that the dietary change had taken place and to use the period before 1960 as a source of contrasting cases defined by dietary practices centered on *mămăligă* within an asymmetrical comparison research design.⁴⁸

The asymmetrical comparison design retains the logical structure of a comparative study which permits it to describe relationships between variables within the limits of an observational research design but differs from a full-fledged comparison in that the units of analysis are not equally well developed. Overall, the practice of

⁴⁸ Jürgen Kocka, "Asymmetrical Historical Comparison: The Case of the German Sonderweg," *History and Theory* 38 (1999): 40-50.

asymmetric comparison has been criticized not just for the shortcomings characteristic of the comparative method⁴⁹ but also on the grounds that because the secondary unit is less well studied, the researcher usually manipulates only superficial knowledge of such units and that its rationale of studying selectively a unit only for the sake of understanding better the primary unit ‘abuses the unit of comparison’.⁵⁰ While acknowledging these criticisms as valid, I believe that the shortcomings of an asymmetrical comparison research design are less problematic in the case of my study. In this sense, I wish to clarify from the outset that my primary focus on the 1960-1980 time interval is justified by no other reason than the observation that at this time the majority of rural residents had changed to predominant consumption of bread. As a merely fortunate by-product, the focus of my analysis on the period 1960-1980 helps shed some light on a relatively under-researched social category during a relatively under-researched phase of socialism.⁵¹ Furthermore, I consider significant that given my general focus on the immediate contributing factors to the dietary change, the nature and depth of the analysis

⁴⁹ The criticism that the units of a comparison are rarely sufficiently isolated to exclude the possibility that developments in one unit affect the developments in the other unit coming from supporters of transfer, entangled or *histoire croisée* approaches are especially pertinent in the case of longitudinal studies. I understand this criticism to mean that the comparative method cannot definitively demonstrate causal relationships since the possibility always exists that the studied phenomenon may have emerged or not in one unit precisely because it did or did not emerge in the compared unit and that the results may have been different if the units did not influence each other. However, as I point out in my methodological section, my use of the diachronic comparative method is exploratory rather than demonstrative of causal relationships in the sense that I have tested with it only measures of association and not causation between variables and consumption practices. Furthermore, the idea that rural residents may have switched to bread precisely because they have consumed *mămăligă* when they were young or because their parents had consumed it throughout their lives and, as a result, *mămăligă* may have become invested with specific negative meanings is central to my argument and, in my view, in no contradiction with the use of the diachronic comparative method for illustrating, for example, the changing economic costs of consuming one or the other ‘core’ food. For a general criticism of the comparative method, see Michael Werner and Bénédicte Zimmermann, “Beyond Comparison: *Histoire Croisée* and the Challenge of Reflexivity,” *History and Theory* 45 (2006): 33-35.

⁵⁰ Jurgen Kocka, “Asymmetrical Historical Comparison,” 49.

⁵¹ For a review of the areas of interest and of the time periods that have dominated the study of Socialism in Romania see Bogdan Murgescu, *România și Europa. Acumularea decalajelor economice [Romania and Europe. The Buildup of the Economic Cleavage]* (Iași: Polirom, 2010), 325-328.

does not vary depending on whether the factors of interest belong to a pre- or post-1960 period and that only the range of factors that have been analyzed differ between the two periods. Illustrative more broadly of my approach for studying the dietary change, for the period 1960-1980, I have discussed: the rising availability of industrially-produced bread and some of the factors that had supported this development without going into the socialist regimes' broader turn towards promoting consumption; the free market and state fixed prices of wheat and maize without going into the wider economic configuration that had shaped them in the aggregate; the availability of maize supplies during the first half of the 1970s without going into the technical and organizational changes at the level of Agricultural Cooperatives and Private Plots that had permitted the production and distribution of such supplies; and the growth of real incomes without going into the political and economic underpinnings of this increase. Finally, the 'core' food consumption practices of rural residents had been analyzed using a combination of highly specific micro- and macro-level data. By comparison, for the pre-1960 period I have analyzed, using similar approaches, wealth of sources and degree of strictness, the 'core' food consumption practices of rural residents and the relative prices of wheat and maize. Accordingly, the asymmetry in my research design emerges only from the fact that more factors have been reviewed for the 1960-1980 time interval and does not apply to individual factors as these have been equally well researched across the two periods⁵² and, therefore, are adequate for being related to the rural residents' consumption practices within a comparative diachronic research design.

⁵² This aspect of my research design fits the customary criticism only to the extent that the analysis of more factors from one period clarifies better each factor in particular.

Methodology and Sources

Methodology

The analysis of the dietary change has involved successive assessments of the factors that have been considered to have had contributed to a predominant consumption of bread or mămăligă by means of controlling each factor or group of factors through a careful selection of cases and then observing the resulting impact on consumption practices. My study in this regard uses a non-experimental research design meaning that I have not manipulated the variable of interest but have constructed the units of analysis by assigning to each of them cases that have been observed to already display a certain configuration of the variable of interest.⁵³ By comparison, in an experimental research design, the researcher manipulates the variable of interest to create treatment conditions to which he/she randomly assigns individuals/cases.⁵⁴ The use of a non-experimental research design has important implications for my study primarily because it restricts the type of information that can be derived from my analysis to measures of association (different from causation) or, in terms of causation, at most to the information that a certain factor cannot by itself explain the consumption practices of rural residents. Acknowledging these limitations, I have designed my study to demonstrate, in decreasing order of confidence allowed by the research design, that no single reviewed factor can explain completely the dietary change, that consumers had preferred hedonically bread with certain ‘fringe’ dishes and that the rising consumption of bread made sense in economic terms given the contours of the centrally-planned, non-market economic system. In particular, I have designed my study to test whether an insufficient availability

⁵³ Thad Dunning, *Natural Experiments in the Social Sciences*, 1-21.

⁵⁴ Ibid.

of maize flour could explain the dietary change and a solution to this question was necessary to establish the presence of choice which alone could have justified any further discussion of the rural residents' motives for switching to bread. Subsequently, for rural residents who had access to sufficient quantities of maize to support a diet centered on mămăligă, I have tested whether financial aspects are sufficient to explain the dietary change in all cases or whether other factors (convenience aspects and/or hedonic preferences) have contributed as well to an increase in bread consumption. The financial factors have been selected as prime candidates for explaining the rising consumption of bread because a diachronic comparative analysis has shown that the dietary change has coincided with a historic reversal in the financial costs associated with consuming bread or mămăligă. Finally, controlling for the financial implications and convenience aspects of consuming bread or mămăligă, I have evaluated for a sample of rural residents their current preferences for bread or mămăligă with 6 typical 'fringe' dishes as a starting point for retrieving inductively a potential hedonic preference for specific 'bread'-'fringe' combinations at the time of the dietary change. Such a preference could have contributed, by itself or in combination with the other factors reviewed in my study, to the observed increase in bread consumption.

The analysis presented above is supported by information describing the relevant population which has been inferred based on sample data. For instance, the percentage of rural residents who had consumed predominantly bread or mămăligă at different points during the time period, who had access to sufficient quantities of maize to support a diet centered on mămăligă and who currently prefers bread or mămăligă with the 6 typical 'fringe' dishes has been estimated by applying statistical methods of inference to sample

data collected by myself or other authors. In this sense, for variables with a dichotomous outcome (did/did not consume mămăligă preponderantly or prefer/do not prefer certain fringe dishes with mămăligă more than with bread), 95% Confidence Intervals have been calculated as an approximation of the true population percentage.⁵⁵ This interval of percentages has not been assessed using the standard formulas for dichotomous variables but by calculating for each theoretically possible population percentage the probability of obtaining through repeated sampling under identical conditions the configuration of the variable of interest observed in the sample or a more extreme configuration and by retaining for the 95% Confidence Interval only those percentages that had probabilities above 2.5%.⁵⁶ This more laborious method of deriving the Confidence Interval has been preferred to the application of the standard formula because it has been found to produce more accurate estimates in the case of dichotomous variables.⁵⁷ For variables with continuous outcomes, the interval of percentages has been defined by the length of 2 or 2.5 standard errors, depending on the size of the samples, in both directions from the average observed in the sample.⁵⁸ For all instances, therefore, the estimation method assures that, on average, 95% of the Confidence Intervals contain the population average while 5% do not, assuming repeated sampling from the same population under identical conditions.⁵⁹ Finally, for inferring differences in preferences for specific ‘core’-‘fringe’ combinations based on the responses of a sample of 60 rural residents of appropriate age concerning their preferences for bread or mămăligă with 6 typical ‘fringe’ dishes, I have

⁵⁵ Michael Smithson, *Confidence Intervals* (Thousand Oaks: Sage Publications, 2003).

⁵⁶ This procedure for calculating the lower and upper limits of a Confidence Interval is outlined in *Ibid.*, 5-9.

⁵⁷ *Ibid.*, 5, 8-9.

⁵⁸ *Ibid.*, 19-23.

⁵⁹ *Ibid.*, 16-18.

applied the McNemar exact conditional test which is the appropriate test for evaluating the statistical significance of differences between variables that cannot be considered to be independent of each other.⁶⁰ The statistical significance of differences in the case of the McNemar test as well as in the case of other tests used less frequently in my analysis such as the t test for two independent samples, the Fisher's exact test and the Pearson product-moment correlation has been evaluated using a significance level of 5%.

The information summarized by the 95% Confidence Interval has been simplified to fit the purposes of my analysis by consistently selecting from the interval the least convenient value for my overall argument. For instance, according to the 1906 Dietary Survey, 40 out of 111 (36%) relatively well-off rural residents from the relevant region had not consumed any wheat/rye flour during the 2 weeks of observation which corresponds to a 95% Confidence Interval bounded by the values of 27% and 46%. Given that my intention has been to demonstrate based on the information from the 1906 Dietary Survey that the majority of rural residents had consumed preponderantly mămăligă at this date, I have preferred to use in my analysis the value of 27% for representing the percentage of rural residents from the well-off group who did not consume wheat/rye flour. This procedure guarantees with 97.5% confidence⁶¹ that the true population average is not below the selected value (in this case, 27%) but it also guarantees with, for example, 90% confidence that the selected value is below the true population average (in this specific case, by at least 3%). This manner of using the information from the 95% Confidence Interval illustrates a more general principle of

⁶⁰ Morten W. Fagerland et al., "The McNemar Test for Binary Matched-Pairs Data: Mid-p and Asymptotic are Better than Exact Conditional," *BMC Medical Research Methodology* 13 (2013) <http://www.biomedcentral.com/1471-2288/13/91>

⁶¹ The 95% Confidence Interval is bounded by two values each having probabilities equal to or less than 2.5% given the distribution observed in the sample.

giving precedence in my analysis to interpretations that go against my argument whenever the available evidence is not sufficiently clear-cut. In my dissertation, this principle has prevailed most consequentially in my assessment of the proportions of rural residents who had consumed mămăligă preponderantly during the period 1900-1960, who had consumed bread preponderantly during the period 1960-1980, who had access to sufficient quantities of maize to support a diet centered on mămăligă during the first half of the 1970s and who currently prefers each of the 6 ‘fringe’ dishes with mămăligă or bread. The principle has been implemented to boost the reliability of my overall findings by raising the level of evidence required for supporting each one of the multiple arguments that came together in my analysis. This procedure has been inspired by the standard practice of experimental quantitative studies of demanding a high level of proof for confirming a hypothesis in an attempt to limit the risk of erroneously accepting false hypotheses (Type I error) due, for example, to sampling imperfections even at the cost of increasing the risk of erroneously rejecting true hypotheses (Type II error).⁶² The application of the principle in my analysis performs the same function of cushioning the impact of imperfect data, a function which I consider indispensable more generally given that the arguments of an analysis are usually interrelated and, consequently, the errors associated with each of them are cumulative. As a result, the overall conclusion of a long enough sequence of arguments may actually end up being more likely to be false than true in its entirety and the application of the principle is intended to decrease the likelihood of such an outcome.

⁶² Frederick J. Gravetter and Larry B. Wallnau, *Essentials of Statistics for the Behavioral Sciences (8th Edition)* (Belmont: Cengage, 2011), 213-216.

A Note on Sources

My analysis draws on information from a variety of sources including, most importantly, published and unpublished studies on the rural residents' diets and dietary practices, official documents issued by central and local authorities concerning the economic and production performances of the Baking Sector and of the Agricultural Cooperatives, the major Population, Industrial and Agricultural Censuses from the relevant period along with the secondary literature discussing such surveys and the responses provided by 90 rural residents of appropriate age to an oral questionnaire administered by myself. Conspicuously absent among the sources used are any recordings produced by rural residents themselves concerning their dietary practices at the time of the dietary change, an absence motivated by the limited number of such recordings and by their problematic value. In fact, the sampling of a variety of sources has been in part intended to make up for this deficiency of direct information characteristic of a social group that has left behind comparatively little written materials. All these types of sources have been presented in detail in the introductory part of the appropriate chapters or sections and in the following paragraphs I wish merely to discuss how data from different types of sources have been related to each other in my analysis.

The method of data triangulation has been considered essential for my analysis given the quality of the available data. This method assumes that data derived from various types of sources are not inherently incompatible and, consequently, that by combining data from more sources that are susceptible to different kinds of errors, a more accurate description of the studied processes may emerge.⁶³ The method of data triangulation has been applied most persistently in my analysis of the dietary practices of

⁶³ Nigel G. Fielding and Jane L. Fielding, *Linking Data* (Newbury Park: Sage Publications, 1986), 23-35.

rural residents during the studied period. As an example, I have relied in my analysis of dietary practices on 5 Dietary Studies which provided detailed enough data on the rural residents' quantitative consumption of bread and mămăligă. However, such data commonly described the consumption practices of a sample of rural residents during a short observation period from a specific season of a specific year, a potentially significant shortcoming given that the available evidence suggested that 'core' food consumption varied by both season and year. Accordingly, I have decided to supplement the micro-level data with macro-level estimates of the quantity of wheat/rye flour - the primary ingredients for bread - that had remained available in each year during the period 1900-1980 to rural residents from the studied region. However, such estimates have been available only at a high level of aggregation - typically at the level of the 'average' rural resident - and are generally less accurate than the micro-level data since they also include quantities of wheat/rye cereals that had been used for other purposes. Overall, by confronting and qualifying the two types of datasets, my expectation has been that the shortcomings of each method may be overcome and, thus, the dietary practices of rural residents may be retrieved reliably for a sufficiently long time interval.

The confrontation of data from various types of sources acquires additional importance in the study of the socialist period in which it can perform the function of validating the official data. For example, the evidence supporting the argument of a dietary change includes commercial data showing a marked increase in the distribution of industrially-produced bread, consumption data from the Household Budgetary Surveys and from the 1979-1980 Dietary Studies showing a marked decrease in the consumption of mămăligă and the rural residents' responses to my oral questionnaire. However, since

the first three types of sources may all reflect external and/or internalized pressure to exaggerate the consumption of bread and, thereby, may be liable to the same kind of error, it has been necessary in line with the requirements of the triangulation method to verify from a source free of such pressures whether the dietary change had actually taken place. For topics from the socialist period for which data triangulation could not be performed, the application of the principle of high proof is expected to adjust for such potential misrepresentation in the official data. Significant in this regard, my analysis of quantitative data on economic performance and production from unpublished archival records, many of them carrying the label ‘strictly secret’ or ‘for internal use only’, and from published sources such as the Statistical Yearbooks shows very little disagreement for the period 1950-1980, consistent with the findings of other authors concerning the frequency and types of misrepresentation in Soviet and Socialist published statistics.⁶⁴ Nevertheless, the use of data available to central or even local administrators does not completely safeguard against possible distortions given a system of incentives and rewards that encouraged misrepresentations starting at the micro-level of data collection and a system of control which was less efficient at identifying such misrepresentations.⁶⁵ The application of the method of data triangulation and of the principle of high proof has been intended initially to be restricted to data produced during socialism in view of its low reputation but, since any data from only one type of sources can contain errors specific to that source, I have considered appropriate to extend their application to all datasets used in my analysis.

⁶⁴ Alec Nove, *The Soviet Economic System*, the chapter on “Sources, Statistics, Evidence,” (363-376); S. G. Wheatcroft and R. W. Davies, “The Crooked Mirror of Soviet Economic Statistics,” in *The Economic Transformation of the Soviet Union, 1913-1945*, ed. R. W. Davies, Mark Harrison and S. G. Wheatcroft (Cambridge: Cambridge University Press, 1994), 24-37.

⁶⁵ *Ibid.*

Structure of the Dissertation

A specific order of presenting and manner of structuring the chapters has been selected to fit the logical progression of my main argument. Specifically, the order of presenting the chapters matches the order of analytical operations performed for controlling the factors which are considered to have had contributed to the dietary change while the manner of structuring the chapters thematically rather than chronologically is better suited for an asymmetrical comparison research design. More concretely, the First Chapter has the task of introducing the phenomenon of interest: the dietary change, and to discuss its most important characteristics: its magnitude, timing, coverage and duration of the transition period. The Second Chapter describes the developments that had taken place in the industrial baking sector during the period 1950-1980. The position of this Chapter immediately after the Chapter on the dietary change is motivated by the assumption that the developments in the baking sector had actually set the context for the rural residents' decisional process rather than having represented responses to the rural residents' demand for industrially-produced bread. This assumption is more justified for the socialist period when production was centrally-planned and is less adequate for the pre-socialist period when production interacted more flexibly with demand but any misrepresentation is less consequential given the low production of bread during the pre-socialist period. The main finding of this chapter is that the dietary change was associated with a marked increase in the distribution of industrially-produced bread which indicates that the dietary change had also meant a move from home-prepared to purchased 'core' foods. The Third Chapter marks the shift of focus from producers to consumers and opens with the discussion of whether the rural residents had access to sufficient quantities of maize to support a diet centered on mămăligă at a time when the evidence presented in

the first two Chapters indicated that they were consuming predominantly bread. The second section of this Chapter analyzes the economic context associated with a diet centered on bread and contrasts it with the economic context associated with a diet centered on mămăligă. Finally, the last section discusses the rural residents' increasing reliance on baking services provided by Consumers' and Agricultural Cooperatives that involved preparing bread using the customers' ingredients against an in-kind or monetary fee. The main findings of this Chapter is that both an insufficient availability of maize supplies and the financial aspects of consuming bread or mămăligă cannot completely explain the dietary change and that other factors such as the convenience aspects of consuming industrially-produced bread and/or a preference for consuming bread have contributed to the dietary change. The Fourth Chapter takes up the task of discussing such non-economic factors and manages to show that rural residents may have preferred for physiological or cultural reasons certain 'fringe' dishes with bread at the same time that they had continued to prefer other 'fringe' dishes with mămăligă. The Concluding Section reevaluates and connects all these findings into a comprehensive interpretation of the dietary change and discusses their broader implications for the research questions presented above.

CHAPTER 1: LONG TERM TRENDS IN THE CONSUMPTION OF BREAD AND MĂMĂLIGĂ, 1900-1980

Introduction

The present chapter introduces the phenomenon under analysis: the rural residents' switch from predominant consumption of mămăligă to predominant consumption of bread, and describes several of its essential features such as its timing, magnitude and coverage. For these purposes, I have assessed and compared across the period 1900-1980 the levels of two indicators: the average consumption of bread relative to the total cereal consumption needs of a rural resident and the proportion of the rural population which consumed bread preponderantly. These two indicators build on data from a variety of sources including gross measurements of the quantity of wheat/rye available at the country level, large-scale Household Budgetary Surveys which collected information on the food intake of a considerable number of families and small-scale dietary studies which provide in-depth descriptions of the dietary practices of a limited number of individuals, all of which have been intended to complement each other in generating a clear depiction of the long term trends in the consumption of bread and mămăligă.¹ More precisely, in this interaction, the long series of macro-level estimates on the availability of wheat/rye flour provide a necessary context for interpreting the wider relevance of the more sensitive results from the smaller-scale dietary studies which usually described the consumption practices from a short period within a year or during an entire but specific year. In the opposite direction, the dietary studies which focus on a

¹ For a review of the strong and weak points of these methods of collecting data on dietary practices see the section on the sources of evidence for dietary changes in David A. T. Southgate, "Dietary Change: Changing patterns of eating," in *Food Choice, Acceptance and Consumption*, ed. H. L. Meiselman and H. J. H. MacFie (London: Blackie Academic & Professional, 1996), 366-371.

well-defined, small community provide the information on regional variations in the opportunity to access wheat/rye supplies needed to disaggregate the data from the national level to the appropriate level of the studied region.

The structure of the chapter mirrors the interaction between the various sets of data with each part opening with a discussion of the aggregate contribution of wheat/rye grains to the total cereal intake of rural residents at the national level and at the level of the relevant region. Once the general context has been established, each subsequent section discusses one of the five dietary studies which present a more accurate and detailed snapshot of the consumption practices of rural residents generally and from the relevant region along with the adjustments which have been applied in order to make their results comparable. These five studies have been selected for analysis primarily because they offer quantitative data on the relative consumption of bread and *mămăligă* which greatly facilitates a comparative analysis of consumption levels at different points in time and because they each describe the consumption patterns of a sufficiently large sample of rural residents to permit the formulation of confident inferences about consumption patterns at the population level. Beyond these common points, however, the studies differ widely in their criteria for selecting representative samples, in the methodology employed for gathering information on consumption, in the time interval of the year chosen for conducting the observation and in the duration of the observation period thus making necessary the application of several adjustments and qualifications in order to make the results comparable and meaningful. Finally, throughout the analysis information has flowed between the macro-level time series on the availability of wheat/rye flour and the in-depth case studies which focused on a relatively more narrow

community to produce the adjusted estimates reviewed in the concluding section of the chapter and which define the main issues and help frame the principal lines of inquiry that will be picked up in the following chapters.

1.1 Long Term Trends in the Consumption of Bread and Mămăligă, 1900-1940

1.1.1 Macro-Level Estimates of Quantities of Wheat/Rye Cereals available for Human Consumption

The estimates presented in this section refer to the quantity of grains suitable for bread making which theoretically remained available to rural residents from Moldavia, Oltenia and Muntenia during each agricultural year during the interval 1900-1939. These estimates have been calculated by deducting from the total production and imports for each year the quantities exported, used as seed, sold to urban residents and consumed by rural residents from the other provinces of Romania. Each net quantity has been then compared with the total cereal consumption needs of rural residents from the three provinces in order to evaluate in the aggregate the relative contribution of wheat/rye and maize to 'core' food consumption. According to the results of this analysis presented in Figure 1.1 from the Appendix to this Chapter, in 12 out of 32 years (37.5%) maize flour had been consumed in greater or roughly equal quantities to the wheat/rye flour which theoretically remained available to rural residents for human consumption and in 17 out of 32 years (53%) maize flour had been consumed up to a ratio of 1 unit to every 2 units of wheat/rye flour. In only 4 years, the available quantity of wheat/rye flour was sufficient to cover entirely the cereal consumption needs of rural residents and in only 13 years had been available in quantities which would have translated into a consumption ratio relative to maize flour equal to or above the 3:1 ratio. However, considering that

agricultural producers stocked part of the wheat/rye production in years of good harvests to cover consumption and production needs in years of bad harvests,² the quantities of wheat/rye flour available to rural residents for consumption in each year certainly varied less markedly between agricultural years than what is suggested by the data from Figure 2.1 and may have been more or less clustered around an average quantity of 92.2 kg (56.7% of total consumption needs) up to 1913 and of 109 kg (67% of consumption needs) during the Interwar period.

A proper appreciation of the significance of these estimates requires a brief discussion of the selected indicators and of the major adjustments which I have performed in order to make the available data suitable for my analysis together with an evaluation of their potential distorting effects on the accuracy of the final results. Among the figures used in my calculations, the quantities concerning the total production, the exports and the imports of wheat and rye are straightforward and have been taken without any adjustments from the statistics presented by Victor Axenciuc.³ However, the figures on the quantities of wheat/rye used as seed, consumed by urban residents nationally and by rural residents from Dobrogea up to 1913 and from Dobrogea, Basarabia, Banat, Crișana and Transilvania afterwards, are the product of extensive adjustments whose appropriateness affect the accuracy/reliability of the presented estimates.

² David Mitrany, *The Land and the Peasant in Rumania: The War and Agrarian Reform (1917-1921)* (New York: Greenwood Press, 1968), 298.

³ Victor Axenciuc, *Evoluția Economică a României. Cercetări statistico-istorice 1859-1947. Vol. III: Monedă- Credit- Comerț- Finanțe Publice [Economic Development of Romania. Historical-statistical Researches, 1859-1947. Volume III: Currency- Credit- Trade- Public Finance]* (Bucharest: Editura Academiei Române, 2000), 372-374, 386-392 and Victor Axenciuc, *Evoluția Economică a României. Cercetări statistico-istorice, 1859-1947. Vol. II: Agricultura [Economic Development of Romania. Historical-statistical Researches, 1859-1947. Volume II: Agriculture]* (Bucharest: Editura Academiei Române, 1996), 515-516.

The quantities used as seed have been calculated by assuming that each hectare cultivated with wheat/rye had been sown with 180 kg of grain-seed, the figure used by David Mitrany in his estimate of the volume of wheat which remained available for human consumption in Romania between 1911 and 1926.⁴ Mitrany does not discuss how he derived this particular figure for seed rate per hectare and it may be inferred that he had relied for information on reports from former landowners, an unrepresentative group for the total population of wheat/ rye growers but, admittedly, the best possible source of information given that the vast majority of peasants did not keep accurate accounts of how much seed they used per unit of land.⁵ In the absence of more direct evidence, the peasants' widespread practice of using more seed per unit of land than the optimum quantity of 140 kg per hectare for wheat and the average seed rate per hectare of 214.6 kg of wheat/rye observed for 30 Agricultural Cooperatives between 1963-1965, a time when peasant practices may have continued into the newly formed Cooperatives, tentatively suggest that a seed rate per hectare of 180 kg may be adequate for the period 1900-1940. For rye, I have adopted a seed rate per hectare of 135 kg which David Kerans reported for Russian peasants from the Central Black-Earth region at the beginning of the 20th century.⁶

For estimating the consumption of wheat/rye flour by the urban population, I have assigned to each person classified in the national censuses as an urban resident⁷ an annual consumption level of 150 kg based on the average per capita level recorded by Grigore

⁴ David Mitrany, *The Land and the Peasant in Rumania*, 298.

⁵ David Kerans, *Mind and Labor on the Farm in Black-Earth Russia* (Budapest: Central European University Press, 2001), 71-72.

⁶ *Ibid.*, 71-72

⁷ Data on the number of urban residents taken from Victor Axenciuc, *Evoluția Economică a României: Agricultura*, 20-21.

Benetato during one week of observation for 10 families located in Cluj-Napoca and comprising 53 members.⁸ Benetato's study has been selected for this purpose primarily because the method used for collecting consumption data has been exceptionally rigorous (the raw food items of each dish had been weighed before cooking by trained personnel and the surveyed families had been supervised during the observation week from early morning until late evening) and, accordingly, its results on the level of consumption of wheat flour can be accepted with a high degree of confidence. This gain in precision was considered sufficient to offset the biases that would inevitably be associated with any procedure of generalizing to the entire urban population the consumption level observed for a particular group of urban residents. Concerning this aspect of representativity, Benetato's study focused on a group of families in which at least the head of the household was employed in a large industrial enterprise (Dermata boots factory) which brought them, on average, a monthly income of 2925 lei, significantly higher compared to the national average of 2390 lei for 1938.⁹ In addition, the surveyed families lived in a city counting 100840 inhabitants, the fifth most populous city of Interwar Romania, while more than 50% of the urban population nationally resided in towns counting less than 50000 inhabitants and 33.7% in towns counting less than 20000 inhabitants. Differences in the size of cities corresponded not only to differences in the occupational profile and income of their residents but also to differences in the extent to which consumers relied on the market for obtaining their 'core' foods both because different housing conditions limited the possibilities of residents of populous cities to prepare these foods at home and

⁸ Grigore Benetato, *Problema Alimentației pentru Individ și Colectivitate*, 136.

⁹ Victor Axenciuc, *Evoluția Economică a României. Cercetări statistico-istorice 1859-1947. Vol. I: Industria [Economic Development of Romania. Historical-statistical Researches, 1859-1947. Volume I: Industry]*, (Bucharest: Editura Academiei Române, 1992), 125.

because the larger population allowed baking enterprises to develop economies of scale which made purchasing bread an appealing option. Finally, the city of Cluj was located in, and connected to, a region where rural residents consumed preponderantly bread whereas the cities in the Old Kingdom of Romania were closely surrounded by villages where mămăligă was consumed preponderantly and from where they received a regular influx of rural immigrants which may have maintained their dietary practices for certain periods and to various extents after moving into the city. These distinctive features of the surveyed families suggest, on the one hand, that the consumption level used in my calculation may underestimate cereal intake generally and wheat/rye cereal intake specifically in those towns located in regions where bread consumption was the norm even for rural residents (Crișana, Banat, parts of Transilvania and Basarabia) given that cereal intake was inversely related to income/purchasing power. On the other hand, the selected consumption level may overestimate the average wheat/rye flour intake of residents of small towns whose lifestyles combined typical urban and rural features and of residents of above-average cities from the Old Kingdom of Romania as first generation urbanites may have consumed larger quantities of maize flour than the 8 kg consumed, on average, by the 10 families from Cluj and correspondingly smaller quantities of wheat/rye flour.

The final adjustment has been to disaggregate the data on the quantities of wheat/rye flour available to rural residents from the national to the regional level given that rural residents from individual regions had access to markedly different quantities of wheat/rye flour for personal consumption. More specifically, the rural residents from

Dobrogea (4.8%¹⁰ and 4.3% of the rural population of pre-1914 and interwar Romania respectively) Transilvania, Crișana, Banat (31.3% of the rural population of interwar Romania) and Basarabia (17.4% for interwar Romania)¹¹ have been described by competent contemporary observers as consuming greater quantities of wheat/rye flour or, alternatively, smaller quantities of maize flour than their counterparts from the Old Kingdom of Romania.¹² Their cumulated consumption of wheat/rye cereals needs to be assessed and deducted from the total quantity available nationally to rural residents in order to derive estimates for the more appropriate territorial units of Moldavia, Muntenia and Oltenia. For pre-1913 Dobrogea, the quantities of wheat/rye cereals that remained within the province to cover the consumption needs of the growing rural population have been estimated at 36200 tons¹³ in 1900 and 43600 tons in 1912 on the assumption that the rural residents from this province consumed only wheat/rye flour¹⁴ and given a national per capita consumption level for cereal products of 162.5 kg. For all five provinces within Greater Romania, I have assigned a share of 59% of the total quantities of wheat/rye flour available nationally to rural residents which corresponds to the product of their cumulated

¹⁰ Calculated based on data from Leonida Colescu, *Dicționarul Statistic al României. Vol. I: Argeș and Iași*, VII-X.

¹¹ Sabin Manuilă, *Recensământul General al Populației României din 29 Decembrie 1930. Vol V-VI: Populația pe clase și grupe de profesii și situația în profesie pe sexe [The General Census of the Romanian Population from December 29th 1930. Vol. V-VI: Classification of the Population on Professional Categories and the Gender Distribution by Profession]* (Bucharest: Editura Institutului Central de Statistică, 1940).

¹² Ioan Claudiu, *Alimentația Poporului Român în cadrul Antropogeografiei și Istoriei Economice [The Diet of the Romanian People in Relation to its Antropogeography and Economic History]* (Bucharest: Fundația pentru Literatură și Artă 'Regele Carol II', 1939), 125-126.

¹³ The term 'ton' refers in this dissertation to the metric ton (1000 kg).

¹⁴ My assumption does not describe adequately the consumption practices of the rural residents from Dobrogea, but I have considered more practical to refrain from complicating the discussion further through the introduction of additional adjustments since even the correction of an unlikely high error of 73 kg would have limited impact on the other regional estimates (underestimation of 3.5 kg) given the small share of the rural population from Dobrogea in the total rural population. In addition, the amount of error associated with my assumption is partially offset by the use of an underestimated level of total cereal consumption (see main body of the text), a more probable level of 179 kg allowing for the consumption of 16 kg of maize.

weight of 53.1% in the total rural population of the country and of a per capita consumption level 27% higher than that of rural residents from the remaining three provinces. Such a ratio for consumption levels is based on the results of the 1938 Dietary Study which showed that 775 persons from 33 villages from the five provinces had made use, on average, of 465 gr. of cereals other than maize, significantly greater than the 250 gr. used by 665 persons from 26 villages from Moldavia, Muntenia and Oltenia. In order to control for probable sampling biases (see Section 1.1.3 for a more detailed discussion), I have opted for a ratio defined by two estimates which have been readjusted to produce the smallest relative difference in the consumption of wheat/rye flour between the two macro-regions (465 gr. and 365 gr. respectively) on condition that they are both located within a total of two standard errors from the observed averages (within the 95% Confidence Interval). The resulting estimate of a consumption level 27% higher for the rural residents from the five provinces is certainly conservative not just because the adjustment procedure has been designed to control against all but the extreme cases of sampling biases but also because the disproportionate focus of the 1938 dietary study on well-to-do families reduces the difference between villages from the two macro-regions given that ceiling effects applied to cereal consumption. Concerning this last aspect, 6 families from Naipu village, Vlașca County, surveyed for the 1938 dietary study, of which 2 owned more land than 98% of all village households and 2 owned 6-7 Ha of land, considerably above the village average of 4.5 Ha (excluding the 700 Ha owned by one large Landholder),¹⁵ have been found to consume, on average, approximately 20% of their cereal intake under the form of maize at the same time that the student research team

¹⁵ Arhivele Naționale ale României. Fundațiile Culturale Regale-Centrală. 97/1938, 111, 133.

entrusted with performing the survey readily affirmed in its general description of the village that maize was the staple food of its residents. These observations are consistent with data showing that in the territories of the Old Kingdom of Romania, considerably different levels of bread consumption corresponded to various positions in the socio-economic hierarchy (See Chapter 4, Section 1). By comparison, 182 persons from Măguri village (Transilvania),¹⁶ over 100 persons from Pojejena Română (Caraș County)¹⁷ and 88 persons from 18 families from Ineu (Bihar County),¹⁸ consumed 12.5% of their cereal intake under the form of maize.¹⁹ The relatively large samples drawn without restrictions from the village populations assures that these results are representative for the entire village which justifies the conclusion that bread was consumed more uniformly across socio-economic groups at least in villages located in the western provinces of Greater Romania. Given such distributions of bread consumption within villages, a comparison of the consumption levels for wheat/rye flour from Naipu and from Măguri, Pojejena and Ineu assessed through the methodology of the 1938 dietary study would show a maximum difference of 20%, considerably below the actual difference in consumption levels when assessed for the entire village population.

The resulting estimates have been compared to an annual consumption level for cereals of 162.5 kg to determine the contribution of wheat/rye cereals to total ‘core’ food consumption. This consumption level for cereal products is based on the data collected by Benetato through rigorous methodology on the dietary practices of 88 villagers from

¹⁶ Grigore Benetato, *Problema Alimentației pentru Individ și Colectivitate*.

¹⁷ Petre Râmneanțu, “Starea de nutriție și alimentație din trei comune ale județului Caraș [Nutritional and Food Situation in Three Rural Communes from Caraș County],” *Buletin eugenic și biopolitic [The Journal of Eugenics and Biopolitics]* 8 (1937): 114.

¹⁸ Grigore Benetato, *Problema Alimentației pentru Individ și Colectivitate*, 185.

¹⁹ *Ibid.*, 136, 185.

Ineu, Bihor County during one week of observation in October, a month defined by agricultural work of high physical intensity, and, for some families, in December and January, months defined by non-agricultural work of low physical intensity.²⁰ A consumption level of 162.5 kg is slightly below the consumption levels of 179 kg and 180.6 kg observed by Râmneanțu for the villages of Pojejena Română and Barlovenii Vechi²¹ and by Benetato for the village of Măguri and considerably below the 304 kg observed by Alexa et al. for 120 villagers from 22 families from the village of Osoi, Iași County (Moldavia).²² While a consumption level of 304 kg is certainly exceptional since it defined the consumption practices of pellagrous households in Osoi village, the consumption levels from Pojejena Română, Barlovenii Vechi and Măguri which have been assessed through an equally rigorous methodology, refer to representative samples from the village populations and describe consumption practices during months of agricultural work of comparable physical intensity, suggest that the consumption level from Ineu village may underestimate cereal consumption at the national level. Nonetheless, I have opted to generalize the lower consumption level of 162.5 kg to the entire rural population in order to secure a comfortable safety margin that would be capable of accommodating, together with the use of grain quantities as an indicator of ‘core’ food consumption, any errors that might be associated with the procedure of estimating annual consumption levels from data covering short time intervals.

This succinct review of the indicators used and adjustments made in the estimating procedure facilitates an appreciation of the direction of the bias that might be

²⁰ Ibid., 136.

²¹ Petre Râmneanțu, “Starea de nutriție și alimentație din trei comune ale județului Caraș,” 114.

²² Alexandry Slătineanu et al., *Plasa sanitară rurală de demonstrație Tomești: cinci ani de activitate [The Experimental Sanitary Station of Tomești: Five Years of Activity]* (Iași: Institutul de Arte Grafice, 1936).

present in the final estimates. On balance, an underestimation of the quantities of wheat/rye flour available to rural residents from the relevant macro-region associated with the application of a higher-than-probable consumption level to urban residents throughout the studied period and to rural residents from Dobrogea up to 1913, an overestimation that affects 25% of consumers, is more than compensated by the application of a lower-than-probable consumption level to rural residents outside of the relevant macro-region, an underestimation that affects 53% of consumers, and by the adoption of a conservative consumption level for cereals for all rural residents. The prevailing overestimating influences, together with the fact that the final estimates on the availability of wheat/rye flour are gross of transportation, processing and storage losses and include quantities of wheat/rye used as feed, strongly suggest that the estimates define a maximum limit for bread consumption for rural residents. It is noteworthy in this sense that a modest estimate of 5% of the total harvest for the quantities of wheat/rye cereals rendered unavailable for human consumption for various reasons would reduce the average level of available quantities from 92.2 kg to 71.3 kg (44% of total cereal consumption need) in the period up to 1913 and from 109 kg to 97 kg (60%) in the Interwar period.

1.1.2 The 1906 Dietary Study: Methodology, representativeness and results

The 1906 dietary study was the result of the personal initiative of two medical professionals, doctors Proca and Kirileanu, which designed it to produce information on the composition of the diets and the quantitative intake of a large number of rural families

from all over the country.²³ Confronted with the difficulty of conducting a dietary survey involving a significant portion of the rural population under conditions of limited personnel, the authors turned to rural teachers to collect the necessary information. Accordingly, each teacher was presented with the task of observing and registering the quantities of foodstuffs consumed by a family of mijlocași, and if time allowed, by a family of fruntași and codași as well, for one week of lent and one of carnival. By 1st of March, 1906, the deadline for receiving the filled in questionnaire, a total of 439 teachers had replied providing information on 496 rural families nationally and on 114 families from the relevant region.²⁴ Overall, the 1906 Dietary Study has the advantage that its results are representative at a regional level since they draw on information on the consumption practices of a large number of rural residents from villages located in different geographic areas. Conversely, the Dietary Study has the main disadvantage that its results describe the consumption practices of an unrepresentative group of rural residents over a short observation period of just two weeks. In addition, because the 1906 Dietary Study had relied for information on non-specialized personnel who did not have access to weighing devices, its results have been considered accurate on the relative consumption of wheat flour, bread and maize flour - as presumably the housewives used the same kitchenware in portioning flour for both bread and mămăligă - and more liable to error in reflecting actual quantities consumed. Consequently, I have compared in my analysis only the reported consumption frequencies for bread and mămăligă and have decided to disregard the information on quantitative consumption as inaccurate.

²³ Gheorghe Proca and Gh. I. Kirileanu, *Hrana țăranului: apel-chestionar adresat D-lor Învățători [The Peasants' Diet: Questionnaire-Survey Sent to Teachers]* (Bucharest: Imprimeria Statului, 1906), 1-8.

²⁴ Gheorghe Proca and Gh. I. Kirileanu, *Cercetări asupra hranei țăranului, de Profesori Doctori Gh. Proca și Gh. I. Kirileanu (raport) [Inquiries into the Peasants' Diet, by Professor Doctors Gh. Proca and Gh. I. Kirileanu (Report)]*. (Bucharest: Imprimeria Statului, 1907), 21-24.

According to the 1906 Dietary Study, there were no families that did not consume mămăligă during the observed weeks in the territories of the Old Kingdom of Romania outside of Dobrogea, where 4 out of 12 during the carnival and 6 out of 11 during the lent weeks ate only bread.²⁵ In addition, a quarter of the national sample during carnival and slightly more than a third during lent and 38% (95% Confidence Interval: 28%-48%) and 36% (95% Confidence Interval: 27%-46%) of the sample drawn from the relevant region did not consume any quantities of bread or wheat flour but only mămăligă.²⁶ For the families that did not consume only mămăligă, the relative consumption of wheat flour, of bread converted to its wheat flour equivalent and of maize flour has been estimated using the data for 18 families for which detailed information on quantities consumed has been available.²⁷ Of these 18 families, 2 families had consumed wheat flour more than maize flour (ratios of 1 kg of wheat flour to 400 gr. and 670 gr. of maize flour), 2 families had consumed wheat and maize flour in roughly equal quantities (ratios of 1 kg of wheat flour to 1.12 and 1.16 kg of maize flour), 6 families had consumed maize flour significantly more frequently than wheat flour (ratios between 1:1.5 and 1:2.6) and 9 families (50%) had consumed wheat flour to a ratio equal to, or higher than, 1 kg to every 3.5 kg of maize flour.²⁸

Overall, a strictly statistical interpretation of the sample data would suggest that no more than 73% of the corresponding population had consumed bread or wheat flour during the two weeks of observation and that only around 36.5% had consumed these foodstuffs in sufficient quantities to qualify them as noteworthy alternatives to the more

²⁵ Ibid., 25-26.

²⁶ Ibid.

²⁷ Ibid., 28-45.

²⁸ Ibid.

common ‘core’ foodstuff, mămăligă. Even in this statistical interpretation, the figure of 36.5% should be considered a maximum estimate not just because the upper bound of the Confidence Interval has been used in its calculation but also because two adjustments that I have made in measuring the consumption of the ‘core’ foods have had an overestimating effect. First, in calculating the proportion of rural residents who consumed bread, I have added together the respondents listed under the categories ‘consumed bread’ and ‘consumed wheat flour’ on the assumption that wheat flour had been used only for bread making and that the surveyors reported the consumption of bread for each family either in terms of wheat flour or of bread but not in terms of both. An analysis of the consumption patterns of 38 families for which the authors had provided detailed information on the quantities consumed for each foodstuff shows, however, that the assumption is not always justified.²⁹ Specifically, only 8 out of 9 families had consumed quantities of wheat flour sufficiently large to warrant the assumption that all or part of the wheat flour had been used for making bread and 4 of these 8 families have been reported to have had consumed bread as well. Given that for an unknown number of cases from the sample the assumption failed, the number of rural families considered to have consumed bread is inflated as families which had used wheat flour for culinary purposes other than bread making were nonetheless assigned to the ‘consumed bread’ category and families which used both wheat flour and bread contributed twice to this category.

Secondly, the selection of the indicator relating the consumption of wheat flour to maize flour for assessing whether bread or mămăligă formed the principal ‘core’ food in the diet of the surveyed families may be less than optimal for this purpose since it

²⁹ Ibid.

misrepresents the position of mămăligă within diets. This indicator approximates reasonably accurately the relative contribution of bread and mămăligă to total calorie intake but fails to reflect their relative contribution to total quantitative intake given the addition of significantly greater quantities of water in the preparation of mămăligă (see see page 6-7). As the available evidence seems to indicate that appetite and satiety are influenced more by a food's weight and volume than by its caloric load or macronutrient composition, the fact that maize flour produced 65% more 'core' food than wheat flour is likely to have translated into a relative frequency of mămăligă consumption that was greater than what the indicator from my calculation would suggest. The lack of adequate data precludes in both cases the possibility of deriving more precise estimates without incurring at the same time the risk of overestimating the consumption of mămăligă and for this reason I have decided to refrain from making any adjustments to the sample data in accordance with the general principle of giving precedence to arguments which go against my hypothesis when the evidence is ambiguous.

The pattern of consumption described above applies to a sample that is not representative of the general population as it included a disproportionately large number of well-to-do rural families. Specifically, 436 (88%) of the 495 surveyed families belonged to the mijlocași category while the remaining 59 families probably belonged evenly to the fruntași and codași categories. The authors of the study did not provide any kind of definition for the terms codași, mijlocași and fruntași and, accordingly, it is difficult to uncover what the rural teachers generally understood by these categories but the information from a contemporary work suggests that these were ordinal categories which had an economic meaning. This work entitled *Starea Socială a Săteanului* presents

the information from over 4800 questionnaires that had been addressed to all the mayors and schoolmasters from rural communes and which concerned various aspects of the socio-economic situation of the peasantry including the distribution of rural families among the categories *codași*, *mijlocași* and *fruntași*.³⁰ Like the authors of the dietary study, the authors of the questionnaires refrained from presenting a specific criterion for assigning rural families to one or another of the three categories on account that no uniform criterion could meaningfully describe socio-economic differences in all the particular cases of what was considered to be a heterogeneous rural world. For this reason, the authors had rejected as inadequate the application of the criterion enshrined in the 1864 Land Reform which linked a household's position in one of the three categories to its stock of draft animals and the responses received from the local authorities suggest that at least part of the respondents did not classify the rural families according to this criterion. Rather, the pattern of responses suggests that when the respondents assigned part of the families from their rural localities, for instance, to the *mijlocași* category, they signified that these families enjoyed greater access to economic resources - very probably understood in a composite manner to include agricultural land, livestock and non-productive wealth - compared to *codași* villagers but more restricted access to such resources compared to *fruntași* villagers. In addition, the respondents as a group may have recognized certain absolute thresholds which delimited the three categories since the local authorities from different regions of the country had assigned, in the aggregate, different shares of the population from their regions to each category and especially since

³⁰ Gheorghe Scraba, *Starea socială a săteanului: după ancheta privitoare anului 1905, îndeplinită cu ocaziunea Expozițiunii Generale Române din 1906 de către Secțiunea de Economie Socială [The Social State of the Villagers: According to the Survey for 1905 performed with the Occasion of the Romanian General Exhibition of 1906 by the Section on Social Economy]* (Bucharest: Institutul de Arte Grafice 'Carol Gobl', 1907), 246.

the resulting distributions are in substantial agreement with the corresponding distributions of rural households by size of their landholdings. For example, the share of rural families classified as fruntași ranged in Muntenia and Oltenia from 9% for Muscel County to 27% for Brăila County and varied together with the share of rural families which owned 5 Ha or more of arable land (Pearson's $r=0.72$, strong correlation).³¹ Furthermore, the share of rural families from the relevant region classified as fruntașe, mijlocașe and codașe was 12%, 45% and 43% respectively, considerably different from the shares of 19.5%, 42.3% and 38.2% which have been proposed for the rural families from the neighboring plain counties.³²

Returning to the dietary study, if the local authorities' distribution of rural families among the three categories approximates within reasonable limits how the rural teachers understood the position of a family classified as mijlocașă within the economic hierarchy of its village, then the results of the study describe predominantly the dietary patterns of the upper half of the rural population. A focus on such families is particularly relevant when generalizing the study's results to the entire population given that bread consumption was sensitive to a household's degree of access to economic resources regardless of whether these are defined in terms of livestock and/or landholding (see Chapter 4, Section 1). Accordingly, the estimate of 36.5% derived from the sample data is certainly overoptimistic for the bottom half of the rural population for which I consider more credible, although still optimistic, an estimate of 25%. Based on all this information, I have accepted for my analysis an admittedly ad-hoc, although generous,

³¹ The distribution of families by size of landholdings refers to 1896 and is based on data from George D. Creangă, *Proprietatea Rurală în România [Rural Landownership in Romania]* (Bucharest: Institutul de Arte Grafice 'Carol Gobl', 1907), 16-21.

³² Gheorghe Scraba, *Starea socială a săteanului*. 246.

estimate of 31% for the share of rural families from the general population which are considered to have had consumed wheat and maize flour in equal quantities.

Finally, the data from the 1906 study refer to the dietary practices of a particular social group over a specific time period from a specific agricultural year. More precisely, the consumption habits of the rural residents have been observed during January and February, halfway through the agricultural year bounded by the wheat harvests of 1905 and 1906. In an agricultural year defined in this manner, the wheat reserves of the rural population were most abundant in the months immediately after the harvest (late summer and autumn) only to decline continuously as the year progressed to reach very low levels during late spring and early summer. These differences in the availability of wheat suggests the possibility that bread consumption was not uniform throughout the agricultural or calendar year as, for instance, bread may have acquired particular importance in the months between the harvesting of wheat and of maize especially for families which did not have sufficient maize supplies to cover their consumption needs from one maize harvest to the next. Besides the constraints imposed by the cyclic patterns in the availability of wheat and maize, seasonal variations in the strength of competing claims on women's labor and in the use of fuel for heating encouraged relatively more frequent bread consumption during the late autumn and winter months when other labor requirements were low and when the oven which heated the house could be used for baking bread as well - an efficient use of fuel which appealed to rural residents from plain areas where timber and other forms of fuel were in short supply. Given the position of the months of observation in the cyclical trend of bread consumption, the figures presented above can be considered beyond short term variations in consumption occasioned by

extraordinary events as maximum estimates for the remaining half of the agricultural year but as minimum estimates for the preceding half. Accordingly, the 1906 dietary study, barring an implausible complete reliance from the part of rural residents on bread consumption during Autumn and early Winter which contemporary observers had failed to notice, provides persuasive evidence for the argument that the great majority of rural residents had consumed during the 1905-1906 agricultural year maize flour/mămăligă in greater quantities than wheat flour/bread. Significantly more generally, such consumption practices define an agricultural year in which wheat/rye flour reserves had been nationally the 5th highest (124.6 kg) during, and 30% higher than the average level for, the interval 1900-1913 suggesting that predominant consumption of maize flour/mămăligă had been the norm at that time.

1.1.3 The 1938 Dietary Study: Methodology, representativeness and results

The 1938 dietary study was part of an impressive project initiated by the Romanian Social Institute and the Royal Cultural Foundations of analyzing the rural household in all its aspects.³³ The task of collecting the material on diets was assigned to the student teams performing economic, sanitary and cultural activities in a number of villages and combined two approaches of surveying consumption: a budgetary-like approach assessing roughly all the quantities of foodstuffs consumed during one year and the more sensitive method of registering the daily consumption of the same household for one week per month over the course of three summer months. In each village, the surveyors were asked to choose for study six households representative for three broad socio-economic categories of peasants: codași (poor), mijlocași (middling) and fruntași

³³ D.C. Georgescu, *L'alimentation de la Population Rurale en Roumanie* (Bucharest: Institutul Central de Statistică, 1940), 7.

(rich). The results of the dietary study which included 48 families from 8 villages located in the relevant region have been presented in the final report down to the village level and have been expressed in terms of the nutritional contribution of each foodstuff to the total daily intake of proteins, fats, carbohydrates and calories. Accordingly, a conversion from nutritive values to physical quantities has been necessary in order to generate comparable estimates and has been performed at the rates of 100 gr. of maize flour for every 10 gr. of protein supplied by it and of 100 gr. of cereal flour other than maize for every 9 gr. of protein based on an averaging of the results of the chemical analyses from the studies quoted by Georgescu. Overall, the 1938 Dietary Study has the main advantage that its results describe the dietary practices of the surveyed residents throughout an entire agricultural year, the appropriate time unit of analysis in the case of rural residents. Conversely, the 1938 Dietary Study has the main disadvantages that its selected sample of 8 villages is not representative at the regional level, that its sample of 48 families is not representative at the village level given the disproportionate weight assigned to well-to-do families and that its results overestimate the rural residents' annual cereal consumption given the tendency of the budgetary-like method to conflate quantities of grain used for food and non-food purposes.

According to the results of the 1938 dietary study, none of the samples drawn from 8 villages from the relevant region had consumed, in the aggregate, wheat/rye flour in greater quantities than maize flour. More specifically, the consumption ratios ranged from 1 unit of wheat/rye flour to every 1.75 units of maize flour for Cârlișele village (Râmnicu-Sărat County) to 1 unit of wheat/rye flour to every 65 units of maize flour for Gura Păltinișului village (Buzău County) with a median of 1 unit of wheat/rye flour to

every 6 units of maize flour.³⁴ In order to increase the accuracy of the analysis concerning the relative contribution of wheat/rye and maize flour to ‘core’ food consumption, an alternative set of estimates comparing the consumption of wheat/rye flour to the annual consumption needs for cereals (146.25 kg converted to flour) has been proposed/selected given that the accounting method has been found to overestimate human consumption of cereals by inappropriately picking up quantities used for other purposes. In this regard, the average per adult consumption level of 282.1 kg of cereals recorded for 8 villages from Banat, significantly higher than the average consumption levels recorded for the villages of Măguri and Ineu through more sensitive methods support the suspicion that the consumption levels reported in the 1938 dietary study partly include quantities of cereals used as feed. This shortcoming of the accounting method acquires particular significance in the Romanian context as it may have inflated relatively the estimates for maize consumption given that maize was the rural residents’ grain of choice for fattening livestock and, therefore, its consumption ran a higher risk of being misrepresented. Nevertheless, the adjusted estimates likewise confirm that maize flour/mămăligă predominated in the diets of the sampled group as the annual consumption level for the 8 villages averaged 44.7 kg for all cereals other than maize (28% of the total cereal consumption needs) on the generous assumption that the recorded quantities had been used solely for human consumption. Furthermore, at the level of individual villages, only one village (Cârligele) displayed a consumption level that was sufficient to cover slightly more than half of the total cereal consumption needs (53%).

³⁴ Ibid., 32-33.

The sample of 8 villages does not reflect adequately the geographic distribution of villages from the relevant region and, consequently, the consumption level discussed above needs to be reconsidered in light of this mismatch. In this sense, the location of 5 of the 8 villages near the altitude limit beyond which sizable, permanent settlements virtually disappear influenced the observable consumption level for wheat/rye flour given the evidence suggesting that the consumed quantities of these grains decreased as altitude increased. For example, a comparison by geographic categories of the consumption ratios of maize to wheat/rye flour for all 15 villages from Muntenia and Oltenia surveyed in the 1938 dietary study shows that villages located in Plain regions were significantly more likely to display balanced consumption ratios or even ratios in favor of wheat/rye flour while villages located in Hilly and Mountainous regions were more likely to display more unbalanced consumption ratios in favor of maize flour (Fisher's exact test=0.0317, phi coefficient (ϕ)=0.61, moderate to strong correlation).³⁵ On the assumption that this relationship between a locality's elevation and its level of wheat/rye flour consumption held across the entire range of altitudes, I consider that the results of the 1938 Dietary Study apply only to the group of Mountainous villages which comprised roughly one third of the rural population from the relevant region. For villages from other geographic areas, I consider that a consumption level of 124.7 kg (80.7% of the total cereal consumption needs), the mid-point between the consumption levels observed for Mountainous (44.7 kg) and Plain villages (204.8 kg), applied to the group of Hilly villages which comprised the majority of the rural population. Finally, a level of consumption of 204.8 kg (33% above the total cereal consumption needs) observed for

³⁵ Ibid.

Plain villages has been considered to apply to villages located on the narrow strip of plain land from Argeş, Dâmboviţa and Prahova counties (roughly a quarter of the entire rural population).

The annual consumption levels presented above define an absolute upper limit of consumption for the combined village populations from each geographic unit considering the composition of the samples used in the 1938 dietary study in which the well-off category of peasants were overrepresented compared to their weight in the general population. Acknowledging that land ownership was the principal marker and source of wealth in the rural world at the moment of the study and that a household's level of bread consumption increased together with the size of its landholding, it is particularly relevant for interpreting the results that 21 of the 71 surveyed households (29%) from Muntenia and Oltenia owned land which put them above 95% of the total number of households from their villages, 39 households (54%) owned land which put them above 85% of the total households while the bottom 25 households (35%) owned an average of 1.5 Ha which put them above 47% of total households.³⁶ As the topmost 15% of the village households accounted for more than half of the sample group, the average estimate concerning the socio-economic sensitive consumption of bread should be regarded as considerably overestimating the consumption level for the village population. The degree of overestimation is tentatively illustrated by an evaluation of how well the results of the 1938 dietary study for the villages of Drăguş and Naipu compare with observations drawing on more representative data for the entire village population. For Drăguş, a

³⁶ Percentages calculated from Anton Golopenţia (Ed.), *60 Sate Româneşti cercetate de echipele studenţeşti în vara 1938. Vol II: Situaţia economică. [60 Romanian Villages Studied by the Student Research Teams in the Summer of 1938. Vol. 2: Economic Situation]* (Bucharest: Institutul de Ştiinţe Sociale al României, 1941), 48-52, 268-287.

village from Transylvania, whose sample of households for the 1938 dietary study had been reported to consume, on average, only 28% of the total cereal intake under the form of maize, the 1932 dietary study, which also applied the budgetary method but to survey a much larger sample of 50 families comprising 15.2% of the village population, had described as displaying a consumption pattern in which maize and wheat/rye flour were consumed in roughly equal quantities.³⁷ The different weight of maize flour in total consumption might be related to a change in cultivation practices favoring wheat and rye crops but as late as 1936, a member of the student research team reported in his detailed socio-economic description of Drăguș village that mămăligă was the principal item of consumption in a dietary pattern specific to south-east Transylvania in which mămăligă and dairy products participated at two of the three meals of the day.³⁸ In addition, an assessment of the quantity of wheat/rye flour production net of seed requirements and sales available to rural residents from Drăguș during the 1937/1938 agricultural year returns a maximum per capita consumption level of 98 kg, considerably below the consumption level of 240 kg reported by the 1938 dietary study, and sufficient to cover 64% of the total annual consumption needs for cereals.³⁹ This consumption level represents a maximum estimate not just because it includes quantities of wheat/rye flour lost during storage, transportation and processing but also because it includes the entire

³⁷ D.C. Georgescu, *Drăguș. Un sat din Țara Oltului (Făgăraș): Demografia și Igiena Populației [Drăguș. A Village from Olt Country (Făgăraș) : Demography and Hygiene]* (Bucharest: Biblioteca de Sociologie, Etică și Politică, 1945), 86-87, 96.

³⁸ Arhivele Naționale ale României. Fundațiile Culturale Regale- Centrală. 59/1936, 412, 421-422.

³⁹ The per capita level of wheat/rye flour has been calculated using data on total production, surfaces cultivated, quantities sold outside the village and total population from Marin Popescu-Spinieni, "Geografia economică a satului Drăguș [The Economic Geography of Drăguș]," *Sociologie Românească* 4 (1939): 191-192, 195. The village population in 1938 has been estimated by applying to the village population from 1930 (1511 residents according to the 1930 General Census as reported in the quoted article) the annual rate of growth of 1.16% observed at the national level for the interval 1930-1938. The quantity of grain used as seed has been estimated by multiplying the cultivated surfaces with an average seed rate per hectare of 208 kg, the figure reported by the agronomist from the student research team in 1936.

net production of rye flour - which accounts for 45 of the 98 kg - although only ‘some’ households used it for baking the ‘poor man’s’ bread while others used it to feed livestock and to manufacture spirits.⁴⁰ Similarly, for Naipu, a village from Vlașca County, Muntenia, the 1938 dietary study reported for the sampled group of households a share of 20% for maize consumption but a 1936 report claimed that mămăligă was the basic foodstuff for the majority of the population.⁴¹ Reviewing the proposed consumption levels in light of this evidence, I consider most probable that the vast majority of rural residents from Hilly and Mountainous regions, and quite likely the majority of rural residents from Plain regions, had consumed the greater part of their total cereal intake under the form of maize flour/mămăligă.

Finally, the consumption practices suggested by the data from the 1938 dietary study characterize an agricultural year in which the quantities of wheat/rye flour available nationally to rural residents were the 7th largest out of 18 years and only 10% below the average level for the Interwar period. In other words, the rural residents from the relevant region might have had, on average, a higher consumption level during the Interwar period but not by a sufficient margin, in the aggregate, to modify the relative contribution to ‘core’ food consumption in favor of wheat/rye flour. Reversing the flow of information, the results of the 1938 Dietary Study, by showing that rural residents from the Hilly and Mountainous Counties of Muntenia and Oltenia had lower consumption levels of wheat/rye flour compared to rural residents from Plain counties but not significantly different consumption levels compared to rural residents from Moldavia, indicate that the average availability levels presented in Section 1.1 are overly optimistic for the relevant

⁴⁰ Fundațiile Culturale Regale- Centrală. 59/1936, 69.

⁴¹ Fundațiile Culturale Regale- Centrală. 43/1936, 185.

region. In this regard, a consumption level for the top third percentile of rural residents from the Plain Counties of Muntenia and Oltenia 85% higher compared to the consumption level of the corresponding group of rural residents from the relevant region would have reduced the average per capita level of wheat/rye flour available nationally to rural residents outside of the plain areas by 8.5 kg and the difference in the relative contribution of wheat/rye and maize flour to total cereal intake from 56.1 kg to 39.1 kg.

1.2 Long Term Trends in the Consumption of Bread and Mămăligă, 1950-1980

1.2.1 Macro-Level Estimates of the Contribution of Industrially-Produced Bread to Total Cereal Consumption

The estimates presented in Figures 1.2 and 1.3 (see Appendix to this Chapter) describe the contribution of industrially-produced bread distributed in rural areas to the total cereal consumption needs of a rural resident of 162.5 kg. The method of calculating the distribution of industrially-produced bread per rural resident and the sources used for this purpose are discussed in detail in Chapter 2, Section 3 and for the present analysis it is sufficient to emphasize that the estimates define a minimum limit for the contribution of bread to total cereal intake. Specifically, the proportions presented in Figures 1.2 and 1.3 underestimate the participation of bread to total ‘core’ food consumption, first, because the quantity of industrially-produced bread which remained available to rural residents is very probably underestimated given the assignment of a high consumption level to urban and suburban residents particularly during the late 1960s and the 1970s, second, because the contribution of homemade bread is not represented in the estimates and, third, because the consumption level of 162.5 kg may be too high for rural residents after 1960 given direct and indirect evidence suggesting that ‘core’ food consumption per rural resident declined continuously during the subsequent decades (see Section 1.2.3 for

more details). For these reasons, the estimates presented in Figures 1.1 and 1.2 are not equivalent since the former defines a maximum level of wheat/rye availability per rural resident and the latter a minimum level as both sets of data submit to the same principle of preferring estimates which go against the argument that a change from *mămăligă* to bread had taken place or which minimize the magnitude of the change. Secondly, because the estimates presented in this section do not include all sources of bread, they can only show that bread consumption had reached at least a certain level but cannot show that bread consumption was not considerably above that level. In this sense, a low level of availability for industrially-produced bread is not necessarily indicative of a correspondingly low level of bread consumption since rural residents may have consumed considerable quantities of homemade bread. Consequently, only high levels of availability for industrially-produced bread provide adequate information for assessing whether bread or *mămăligă* predominated in the rural residents' diets and these estimates are discussed below.

According to the available data, the average contribution of industrially-produced bread to the total cereal intake of rural residents nationally had increased from 5% in 1959 to 35% in 1980. While the average contribution of industrially-produced bread to total consumption at the national level appears unimpressive, regional data summarized in Figure 1.3 show that for rural residents from the relevant region, the average contribution of industrially-produced bread excluding bread produced through baking services had increased from a maximum estimate of 12.8% in 1959 to a respectable level of 76.8% in 1978. In other words, the 'average' rural resident from the relevant region

was consuming by 1978 three times more grain flour under the form of bread than under the form of mămăligă.

Concerning differences in the rural residents' degree of access to industrially-produced bread, the average contribution of industrially-produced bread to the total cereal intake of a rural resident amounted to 72% for Vâlcea County, 73.5% for Argeş and Dâmboviţa Counties, 83% for Prahova County and 84% for Gorj County indicating that industrially-produced bread was relatively evenly distributed between the macro units of the relevant region. In addition, the geographic distribution of industrially-produced bread at the national level suggests that, within each county, rural residents from Hilly and Mountainous areas received greater quantities of industrially-produced bread compared to rural residents from Plain areas. Such a distribution pattern had been the result of the planning authorities' policy of distributing bread produced using state-supplied flour to rural residents who did not have access to sufficient quantities of wheat/rye flour from private plot production and from payments from Agricultural Cooperatives and to provide mainly baking services to rural residents from agricultural areas who had access to adequate quantities of wheat/rye flour. Unfortunately, beyond these differences at a highly aggregated level, sufficient information has not been available on differences in the distribution of industrially-produced bread at the more appropriate level of individual households, or, at least, of villages. As a result, it is not possible to entirely dismiss the possibility that a minority of villagers had access to such high quantities of industrially-produced bread to leave the majority of villagers with availability levels below 50% of the total cereal consumption needs. However, the improbable elements of such a scenario together with the contribution to total

consumption of homemade bread and of bread produced through baking services - which had reached 13.5 kg per rural resident nationally in 1975 and whose distribution did not overlap with that of industrially-produced bread made from state-supplied flour - strongly suggest that the majority of rural residents had access to sufficient quantities of bread to cover more than half of their total cereal consumption needs.

Finally, the observed high level of distribution of industrially-produced bread in the relevant region has not been specific to 1978 but characterized at least the entire second half of the 1970s. More precisely, the distribution of industrially-produced bread in the relevant region covered 57.6% of the total cereal consumption needs of rural residents during the interval October 1975-June 1976,⁴² had been forecasted to cover 75.5% in 1979⁴³ and had been planned to cover 63% during the interval October 1976-June 1977 and 87.8% in 1980.⁴⁴ As a side note, the relatively low figures for the intervals October-June 1975-1976 and 1976-1977 are only partly explained by the higher production and distribution of industrially-produced bread during 1978 and afterwards as they also register the underestimating effect of not including, compared to the year-round estimates, the intervals July-September 1976 and 1977, months typically characterized by the highest level of distribution of industrially-produced bread. In this regard, the industrialization of bread production had changed the annual pattern of cyclical availability of bread as industrially-produced bread was typically most abundant during the interval July-September, its availability then decreased slightly during the interval October-December and dropped markedly during the interval January-March only to rise

⁴² C.C. al P.C.R. Secția Economică. 195/1976, 47-48.

⁴³ C.C. al P.C.R. Secția Economică. 18/1979, 41.

⁴⁴ Ibid.

again continuously and significantly during the interval April-June. By comparison, wheat/rye supplies in the period before collectivization were typically most abundant during late August and September and declined continuously as the agricultural year progressed to reach very low levels during the Spring and especially the Summer months immediately before and after the next harvest.

Overall, the level of distribution of industrially-produced bread represents the first line of evidence that by 1975 the ‘average’ rural resident as well as the majority of the rural population from the relevant region were consuming over half of their total cereal intake (162.5 kg) under the form of bread. Beyond the contribution of setting an upper limit for the date of the dietary change, the levels of distribution of industrially-produced bread provide the appropriate framework for assessing the general relevance of consumption data from the more sensitive studies presented below which either describe the consumption practices of rural residents during short observation periods within a year or the total bread intake during a specific year. Anticipating the discussion from subsequent sections, the new cyclical pattern for the availability of industrially-produced bread throughout the year helps explain the 6.5% higher level of bread consumption reported by the 1979-1980 dietary study for rural residents from the relevant region during the months of September/October compared to the level observed for March/April and helps contextualize the results of the Household Budgetary Survey for 1968 and invest its conclusions with more general relevance. In addition, the long-term data on the availability of industrially-produced bread in rural areas provides valuable information on the typical duration of the transition from mămăligă to bread. Significant in this regard, the data presented in Figures 2.3 (see the Appendix to Chapter 2) show that the entire

growth in per rural resident availability of industrially-produced bread had taken place up to 1971 and that most of this growth had been concentrated during the intervals 1961-1963 (from 14 kg to 30 kg) and 1969-1971 (from 33 kg to 63 kg). Furthermore, considering the information on the concentration of production in larger industrial units (see Chapter 2, Section 1), the data at the national level of aggregation mask rapid, even more marked increases in bread availability at the local level that had accompanied the one-off entering into production of large-scale baking enterprises. Given all this evidence, I believe that the transition from mămăligă to bread had been in the majority of cases as abrupt as the opening of a major production unit in the nearby urban locality, as the opening of a baking unit within the Agricultural Cooperative or, as the respondents to my oral questionnaire have indicated, as the major life changes (attending urban schools, urban employment) that have brought them into closer contact with sources of bread availability.

1.2.2 The 1957 Dietary Study: Methodology, representativeness and results

The 1957 dietary study has been performed by the personnel of the Public Health Institute from Bucharest in collaboration with regional and local public health employees and covered 9 villages considered representative for the economic and general health conditions of the five administrative regional divisions of Muntenia and Oltenia.⁴⁵ In each village, ten families ‘representative’ for its socio-economic structure were selected for observation using the family bookkeeping (inventory, register) method, in practice the

⁴⁵ I. Ardelean and A. Sporn, “Particularitățile alimentației în mediul rural din regiunile București, Argeș, Oltenia, Dobrogea și Ploiești” [The Particularities of Rural Diets in the Regions of București, Argeș, Oltenia, Dobrogea and Ploiești],” in *Culegere de lucrări metodologice și documentare. Probleme de igienă și sănătate publică în sectorul agricol (din materialele consfățuirii de la Constanța) 1961* [Collection of Methodological and Documentary Papers (From the Materials of the Conference from Constanța) in 1961] (Bucharest: Ministerul Sănătății și Prevederilor Sociale Institutul de Igienă și Protecția Muncii- R.P.R., 1962), 84-86.

24-hour recall method since the task of filling the information on daily consumption was assigned to a local medical practitioner rather than to a family member.⁴⁶ The duration of observation was one year and the gathered information referred to the frequency of consumption of various foodstuffs. Since the study provides information only on the consumption frequency of bread and mămăligă but not on quantities consumed, the relative contribution of bread and mămăligă to total 'core' food intake has been assessed by comparing the number of meals centered on mămăligă with the number of meals centered on bread on the assumption that an equal quantity of 'core' food was consumed at daily meals regardless of whether bread or mămăligă performed this function. Such a method of assessing the quantitative consumption of bread and mămăligă rests on an extreme interpretation of data showing that satiety is relatively insensitive to the caloric load of a food and more sensitive to its weight and/or volume but any measure of caloric compensation would support my argument that rural residents consumed preponderantly mămăligă since it would have translated into an increased intake of the less energy-dense food (mămăligă). Finally, the results on the relative consumption of bread and mămăligă have been converted to estimates of the relative consumption of wheat/rye and maize flour by applying a conversion rate of 0.435 units of maize flour for every unit of mămăligă and 0.63 units of wheat/rye flour for every unit of bread.

According to the data on frequencies of consumption presented in the 1957 Dietary Study, the surveyed sample of families had consumed mămăligă 293 days and bread 134 days at least at one meal of the day.⁴⁷ More precisely, the surveyed families had consumed, on average, mămăligă at all meals of the day during 231 days (63.3% of

⁴⁶ Ibid., 84.

⁴⁷ Ibid., 85.

the year), bread at all meals of the day during 62 days (17% of the year) and both bread and mămăligă during 72 days (19.7% of the year). Furthermore, during the 72 days characterized by consumption of both foodstuffs, meals involving mămăligă were twice as many as those involving bread.⁴⁸ Overall, assuming a stable pattern of three meals per day, the average distribution of consumption days by the prevailing ‘core’ food corresponded to a ratio of 3.25 meals centered on mămăligă to every meal centered on bread, which would have translated into a ratio of quantities consumed of 2 units of maize flour to every unit of wheat flour. Transposed into physical quantities, the ‘average’ rural resident consumed according to the 1957 Dietary Study approximately 97 kg of maize flour and approximately 48 kg of wheat/rye flour assuming a total flour intake of 146.25 kg. However, it should be considered that these figures define an optimistic level for the consumption of wheat/rye flour by rural residents from the relevant region given that at least three of the 9 surveyed villages had been selected from Dobrogea and București Regions, territories which according to the 1906 and 1938 dietary studies displayed wheat/rye consumption levels above the average for the region.

Regarding variation between families in the frequency of consuming mămăligă, the 1957 Dietary Study found that only 6% of the total number of surveyed families had consumed mămăligă during less than 200 days per year, 10% of families had consumed mămăligă between 200 and 250 days, 34% of families between 250 and 300 days and 50% of families had consumed mămăligă during more than 300 days.⁴⁹ This distribution of families by their frequency of consuming mămăligă is compatible under the most probable scenarios with at least half of them having had consumed the greater part of

⁴⁸ Ibid.

⁴⁹ Ibid.

their total cereal intake under the form of mămăligă. Specifically, each one of the 44 families classified as consuming mămăligă during at least 300 days per year would have had to consume bread at one meal of the day for at least 250 days per year - significantly above the average number of days observed for the entire sample group of families - in order to qualify as predominant consumers of bread even if it is assumed that they had consumed bread at all three meals of the day during the maximum possible number of 65 days. Moreover, any such extreme cases would have been more than compensated by cases of below-average consumption of bread among the group of 30 families which had consumed mămăligă at least at one meal of the day between 250 and 300 days and which themselves, as a group, required generous assumptions to qualify as preponderant bread consumers.⁵⁰

A dietary pattern centered on mămăligă for the ‘average’ rural resident from the relevant region may have not been specific to 1957 as consumption data from the Household Budgetary Survey shows that rural residents nationally had consumed wheat/rye flour and flour-based products equivalent to 103.3 kg of grain (67% of total cereal consumption needs) in 1953 and 113.9 kg (74%) in 1958.⁵¹ The Household Budgetary Survey had been performed in rural areas each year beginning with 1952 by the National Center of Statistics and summarizes data on the quantities of food consumed by 3000 families during an entire year. The relevant data was collected by means of a household journal with a family member having the responsibility of filling in the

⁵⁰ The assumptions are generous because the group of families from this category had to consume bread in any combination between the limits of 115 days for all three meals of the day and 99 days for one meal of the day and 77 days and 212 days respectively at a substitution rate of one day of solely bread consumption for every 3 days of bread consumption at only one meal in order to qualify as predominant bread consumers.

⁵¹ C.C. al P.C.R. Secția Economică. 220/1959, 55.

requested information. Overall, the large number of surveyed families, carefully selected to achieve proportionate representation of macro and micro-regions in the national sample, assures that the results are representative within narrow error margins at the national level. For the present analysis, because the consumption levels of 103.3 kg and 113.9 kg represent national averages, they overestimate the level of wheat/rye consumption of rural residents from the relevant region given that a considerable number of rural residents from Crişana, Banat, Transilvania and Dobrogea (37% of the total rural population) consumed insignificant quantities of cereals other than wheat/rye flour and rural residents from the Plain areas of Muntenia and Oltenia (16% of the total rural population) had traditionally had higher consumption levels of wheat/rye flour compared to the rest of the rural residents from the Old Kingdom of Romania. In addition, the practice of relying on untrained persons for the recording of consumption data may have produced inaccurate results and, in the case of cereal products including wheat/rye products, inflated results through the conflation of grain quantities used for food and for non-food purposes, a possibility strongly supported by the high consumption levels reported for all cereals of 228 kg in 1953 and 254 kg in 1958.

1.2.3 The 1979-1980 Dietary Study: Methodology, representativeness and results

The 1979-1980 dietary study had been conducted by specialized personnel from the Public Health and Hygiene Institute from Bucharest in 4 villages from the relevant region, one each from Mehedinţi, Vâlcea, Argeş and Dâmboviţa Counties, on a total of 962 participants.⁵² This study was part of a wider project of examining the 'dietary practices and nutritional status of the population' which, in addition to the 4 villages, had

⁵² Data summarized in Iulian Mincu, *Impactul Om-Alimentaţie*, 287-297.

produced information on 8 villages from the Plain Counties of Oltenia and Muntenia and, through the collaboration of the Public Health and Hygiene Institutes from Cluj-Napoca, Iași and Timișoara, on 13 villages from the rest of the country.⁵³ Furthermore, a prototype version of the study had been tested in 1975 and 1976 in two other villages from the relevant region and the standard version had been applied to a third village in 1982-1983. The consumption data presented in this section comes from the four villages studied in 1979 and 1980 but information from the 8 villages from the plain region and from the 3 villages from the relevant region had been included for comparative purposes and to provide a broader empirical basis for the argument that by the date of these studies a change in the diets of rural residents had occurred.

In terms of methodology, the 1979-1980 dietary study followed a rigorous research protocol: the 24-hour recall method had been employed in collecting the data on consumption, a large sample of at least 10 to 12% of the total families in each village had been surveyed, the families had been selected through systematic sampling ('metoda pasului') which assured adequate geographic coverage within the villages and the villages had been chosen following a zoning of the territory in view of climatic, geographical, socio-economic, demographic and sanitary conditions.⁵⁴ The consumption practices of each villager had been recorded for 7 consecutive days during September or October and for 7 consecutive days during March or April and the results have been

⁵³ Ibid.

⁵⁴ Sebastian Dumitrache et al, "Studiul structurii alimentației și stării de nutriție a populației [A Study of the Dietary Configuration and of the Nutritional Status of the Population]," in *A XVI-a sesiune științifică organizată în cadrul festivalului național 'Cîntarea României': Rezumatele Lucrărilor [The 16th Scientific Session Organized with the Occasion of the Symposium 'Cîntarea României': Summary of Papers]*, (Bucharest: Ministerul Sănătății, 1981), 20-29.

reported in terms of consumed quantities of foodstuffs for age and sex categories.⁵⁵ Concerning this last aspect, because the mămăligă to bread consumption ratio sets a more demanding threshold than the maize flour to wheat/rye flour consumption ratio for evaluating whether a change in the diets of rural residents had occurred, I have converted the consumption of maize flour reported in the dietary study to consumption of mămăligă at a rate of 2.3 units of mămăligă to every unit of maize flour and have compared the resulting quantity to the rural residents' consumption of bread. Overall, the 1979-1980 dietary study has the strong point that its results are representative at the village level given the size of the samples and the distribution of selected families within each village. Conversely, the 1979-1980 dietary study has the weak point that its results may not be representative at the regional level given that the 4 surveyed villages were larger and better connected to urban localities/transportation network compared to the average village. In addition, the results of the dietary study are based on a short observation period of just two weeks and, therefore, they may not represent adequately cereal consumption patterns throughout the year although the historically smaller difference in the seasonal availability of maize flour and wheat/rye flour products makes this shortcoming less consequential.

According to the 1979-1980 dietary study, the rural residents from the 4 villages had consumed, on average, 359.5 gr. of bread and 28.25 gr. of mămăligă each day during the spring weeks of observation and 382.8 gr. of bread and 28.5 gr. of mămăligă during the autumn weeks of observation.⁵⁶ By comparison, rural residents from 8 villages had consumed, on average, 337.5 gr. of bread and 112.1 gr. of mămăligă and 363.4 gr. of

⁵⁵ Ibid., 23.

⁵⁶ Iulian Mincu, *Impactul Om-Alimentație*, 287-297.

bread and 126.7 gr. of mămăligă respectively⁵⁷ which tentatively suggests that the state's policy of preferential distribution of industrially-produced bread in non-agricultural regions (Hilly and Mountainous Counties, see Chapter 2, Section 3 for more detailed information on the distribution of bread by counties) had reversed the geographic pattern of bread consumption observed in the previous studies. Recasting the data under the more appropriate form of a classification of rural residents by the predominant 'core' food of their diets, the average consumption levels presented above support the conclusion that in both regions the majority of rural residents had consumed bread in greater quantities than mămăligă. Specifically, even under the generous assumption that all participants who consumed mămăligă have done so sufficiently to cover no more and no less than 60% of their total 'core' food consumption - the optimum level of consumption for maximizing the number of participants who consumed mămăligă in meaningfully greater quantities than bread - only 114 individuals from the 4 villages (12.1%) from the relevant region and 574 individuals from the 8 villages (42.2%) from the Plain region could count as having consumed preponderantly mămăligă. Furthermore, concrete data from Bălțești village, Prahova County, tentatively suggests that mămăligă consumption within each village conformed to a pattern that would be associated with a much higher share of rural residents which qualified as bread consumers. Specifically, within the confines of an average daily consumption of 315 gr. of bread and 37 gr. of mămăligă based on data collected during three weeks of observation in the Winter, Spring and Autumn of 1983, 12 respondents (6% of the total sample) had consumed only mămăligă, 37 respondents (18% of the sample) had consumed both mămăligă and bread but on an average ratio of

⁵⁷ Ibid., 276-284.

3:1 in favor of bread and 154 respondents (76% of the sample) had consumed only bread.⁵⁸ Finally, bread consumers formed the majority of the population in each one of the 4 villages from the relevant region even if it is assumed that the entire reported quantity of maize flour had been consumed in only one village and that respondents either consumed mămăligă in quantities sufficient to cover exactly 60% of their ‘core’ food consumption or did not consume mămăligă at all. Under conditions of random sampling, this configuration of the sample of 4 villages would be compatible with 95% confidence with a consumption pattern for the relevant region in which the majority of residents of at least half of all villages consumed bread preponderantly.

The general profile of 2 of the 4 villages which have been identified in the sources (Leordeni, Argeş County and Rogova, Mehedinţi County)⁵⁹ show that the selected sample may have included localities which were demographically large, well-positioned on major transportation routes and situated geographically in areas which combined hilly and plain features. Consequently, the consumption pattern described above may overestimate bread consumption at the regional level given that the majority of villages from the relevant region were located in typical Hilly and Mountainous areas and were less well integrated into the transportation network. Nevertheless, concerning geographic differences, information limited to a Mountainous village (Nehoiu, Buzău County) and to a Hilly village (Domneşti, Argeş County) shows that a combined total of 227 families had consumed bread during two observation periods (Spring and Autumn of 1975 and

⁵⁸ Ibid., 325 and 327-328.

⁵⁹ Ibid., 275.

1976) close to the daily recommended quantity of 290 gr.⁶⁰ This level of bread intake corresponds to 83% of the consumption level observed for rural residents from the 8 Plain villages and to 78% of the consumption level observed for rural residents from the 4 villages from the relevant region. By comparison, the group of families surveyed in the 1938 dietary study from Gura Teghii, a village 16 km from Nehoiu, from Corbeni, a village 26 km from Domnești, and from all the Hilly and Mountainous villages from Muntenia and Oltenia had levels of bread consumption of 153 gr., 53 gr. and 181 gr. respectively, significantly below the consumption level of 840 gr. reported for Plain villages. These results further confirm that a locality's position at a higher altitude, which for the period up to 1940 was indicative of a considerably lower level of bread consumption, had lost this association as the collectivization of agriculture and the centrally-planned distribution system leveled geographically the opportunities of rural residents to access wheat/rye products. If anything, Hilly and Mountainous villages benefitted from a policy of preferential distribution of industrially-produced bread and their above-average share of rural residents employed in the more remunerative non-agricultural sector generated higher levels of disposable income available for purchasing bread (See Chapter 3, Section 3). Overall, although geographic differences as such between the sampled villages and the entire population of villages from the relevant region have the potential to only minimally affect the general relevance of the results of the 1979-1980 dietary study, differences at the level of employment profiles and in the

⁶⁰ Sebastian Dumitrache et al., "Cercetarea modului de alimentație și a stării de nutriție a populației din două localități rurale în curs de urbanizare [Research on the Dietary Patterns and Nutritional Status of Residents from Two Rural Communes in the Process of Urbanization]," in *A XII-a sesiune științifică organizată în cadrul festivalului național 'Cîntarea României': Rezumatele Lucrărilor [The 12th Scientific Session Organized with the Occasion of the Symposium 'Cîntarea României': Summary of Papers]*, (Bucharest: Ministerul Sănătății, 1977), 85-86.

degree of integration into the socialist commercial network are more problematic and suggest the possibility that the sample data might overestimate bread consumption at the regional level.

The rural residents' general move from *mămăligă* to bread consumption after collectivization is further demonstrated by data from the Household Budgetary Surveys which, although less accurate than the consumption data from the 1979-1980 Dietary Study, describe the consumption practices of a representative sample of rural households during an entire year. According to the Household Budgetary Surveys from 1958 and 1968, the two years for which data had been readily available, wheat/rye flour consumption by peasant families had increased nationally from a per capita level of 113.9 kg to 135.6 kg while maize flour consumption had decreased from 140.1 kg to 103.5 kg indicating conclusively that the 'average' Romanian resident in 1968 was consuming the greater part of his/her cereal intake under the form of bread.⁶¹ Moreover, the rising trend of bread consumption may have continued up to the 1979-1980 dietary study as per rural resident quantities of wheat/rye flour remained stationary between 1968 (171.5 kg) and 1978 (177.4 kg) but as their distribution under the processed form of industrially-produced bread increased from a per rural resident level of 31.2 kg to 66.5 kg. For rural residents from the relevant region, their privileged access to industrially-produced bread which contributed to a reversal of the geographic differences in bread consumption and the influence of ceiling effects on quantities reported by rural residents from regions which traditionally had high consumption levels tentatively suggest that the national average may be for the first time representative for their consumption level.

⁶¹ C.C. al P.C.R. Secția Economică. 8/1970, 90.

The 1979-1980 Dietary Study adds important information on two other aspects of the rural residents' dietary practices involving 'core' foods. First, an analysis of bread consumption by age categories shows that all rural residents had high levels of bread consumption with rural residents aged between 1 and 16 at the moment of the dietary study (born after collectivization) having consumed 270 gr. of bread and 21.2 gr. of mămăligă, rural residents aged between 20 and 60 having consumed 400 gr. of bread and 30.35 gr. of mămăligă and rural residents aged 60 or older having consumed 351.4 gr. of bread and 29.4 gr. of mămăligă. Secondly, the 1979-1980 Dietary Study provides the first reliable indication that 'core' food consumption had decreased from its pre-Second World War average level with an estimated per rural resident annual cereal consumption of 112 kg based on the data from the weeks of observation from September/October compared to 162.5 kg reported for rural residents from Ineu village based on observations from one week of observation from October, 1936. The difference between consumption levels remains considerable even if the comparison is restricted to adult respondents and, in the case of the 1979-1980 Dietary Study, to adult respondents which had performed work of high physical intensity during the week of observation (148 kg against 179 kg) suggesting that the results were not confounded by the selection of a period within a year defined by work of unusually low physical exertion. This long term decrease in the consumption of 'core' foods was determined partly by a decrease in the physical intensity of work which accompanied the progressive mechanization of industrial and agricultural operations and partly by an increased consumption of foods of animal origin during the 1960s and 1970s including milk, eggs and meat. Regardless of the exact causes behind the declining consumption of 'core' foods, an average annual cereal consumption level of

112 kg for rural residents from the relevant region during the second half of the 1970s would indicate that the distribution of industrially produced-produced bread was actually sufficient to cover entirely and more the total consumption needs in 1978, a level high enough to accommodate the use of as much as one third of the entire bread production for non-human consumption purposes and still leave 84% of the rural population capable of consuming only bread. Assuming a distribution pattern in which rural residents either had consumed the equivalent in bread of 149 kg of cereals (the observed consumption level of 112 kg plus 33% from it) or had consumed the equivalent in bread of 62 kg (49.5% of total cereal consumption needs), a pattern which minimizes the proportion of the rural population which would qualify as predominant bread consumer, roughly 75% of rural residents would nonetheless have had access to sufficient quantities of industrially-produced bread to cover entirely their total cereal consumption needs.

1.2.4 The 2013 Retrospective Dietary Study (1950s vs. 1960s): Methodology, representativeness and results

The 2013 Dietary Study had been performed by this author during August and September, 2013 with the primary purpose of obtaining retrospectively consumption data for rural residents from a more representative sample of villages for the 1950s and the post-collectivization period. Accordingly, consumption data had been collected for 68 respondents of appropriate age from 15 villages from Argeş County which had been selected to assure adequate representation of the different geographic (7 villages from Mountainous and Hilly regions and 8 villages from Plain regions from different parts of the County) and economic areas of the County (7 villages far from, and 8 villages close to, urban localities). The relevant data had been collected during face-to-face interviews through the administration of an oral questionnaire.

The questionnaire opened with two questions which asked respondents to indicate the number of meals at which they had consumed bread/mămăligă (presented in balanced order) during the past week. These questions have been intended to familiarize the respondents with the format of the oral questionnaire, to dispel any uncertainties a respondent might have had concerning the topic under discussion and his/her capacity to answer the questions properly and to provide a benchmark for framing subsequent questions. Consequently, the answers from these questions had not been analyzed statistically beyond the result that the vast majority of respondents had consumed bread preponderantly during the reference weeks. The next pair of questions asked respondents whether ‘they had consumed at any point during their lives, from childhood or early adulthood up to the present time, bread/mămăligă (presented in balanced order) more/less frequently (presented in balanced order) than they had done during the previous week’. The majority of answers to these questions contained information sufficiently clear-cut on the relative consumption frequency of bread and mămăligă during a well-defined life stage to enable the classification of respondents into one of the categories ‘had consumed mămăligă preponderantly in their youth’ or ‘had always consumed bread preponderantly’. For example, a number of respondents had straightforwardly indicated that up to early adulthood, which for most of them coincided with major life events such as entering formal employment or moving into the city, they had consumed bread only at meals occasioned by major religious holidays or extraordinary occasions. Other respondents have indicated that for them, bread had performed the function of a special treat much like cozonac does today - the term they had usually used for referring to bread in their childhood - while others have indicated that they had consumed bread at most

once a week, a probable exaggeration of actual consumption levels since respondents had to relate their uneven and occasional consumption of bread to the presented reference period of one week. Alternatively, a number of respondents had indicated that they have consumed bread preponderantly throughout their life time and some of them insisted to underline their exceptionality among village residents whom they considered to have had consumed mămăligă preponderantly. Finally, a minority of respondents which did not express clearly which ‘core’ food predominated in their past dietary practices had been presented with a question which specifically asked them ‘whether in their childhood or youth they had consumed bread more often than mămăligă or mămăligă more often than bread (presented in balanced order)’. In addition to the two categories presented above, the responses to the follow-up question contributed also to a third category - ‘alternating consumption of bread and mămăligă’ - which in the statistical analysis of responses had been merged with the category ‘had always consumed bread preponderantly’. The decision to combine the responses from the two categories acknowledged, first, that equally frequent consumption of bread and mămăligă most likely corresponded to a relatively higher consumption of bread measured in terms of flour and, secondly, that the statistical analysis and the interpretation of results would be greatly facilitated with the acceptable trade-off of raising the level of proof required for validating the argument that the majority of rural residents had consumed mămăligă preponderantly at one point during their lives.

Overall, the 2013 Retrospective Dietary Study makes the important contribution of providing information on the dietary practices of rural residents from a representative number and selection of villages. Conversely, the dietary study has the main disadvantage

of having collected consumption data based on the respondents' descriptions of their dietary practices from 40 to 50 years ago and of having presented approximate estimates about the consumption frequencies of bread and mămăligă. Nevertheless, the confidence with which rural residents readily affirmed that mămăligă had predominated in their childhood or youth diets and the large differences in the reported consumption frequencies suggest that the retrospective method may be less problematic when applied to the study of salient phenomena such as 'core' food consumption.

According to the 2013 Retrospective Dietary Study, 51 respondents (75% of the total number of respondents) with a median age of 69 years had ordinarily consumed mămăligă more often than bread at one point during their lives - commonly in their childhood or youth -, 12 respondents (17.6%) with a median age of 63 years had always consumed bread more often than mămăligă and 5 respondents (7.4%) with a median age of 58 years had consumed bread and mămăligă with roughly equal frequencies in their childhood. The 95% Confidence Interval compatible with the distribution of respondents from the selected sample ranges from 63% to 85% for the proportion of the rural population from the appropriate age groups which consumed mămăligă preponderantly. Restricting the analysis to the group of respondents aged between 58 and 65 in 2013 on the consideration that they could not refer in their answers to periods before 1948 but most likely described the consumption practices of the 1950s and early 1960s, 19 respondents (73.1% of all respondents) indicated that they had consumed mămăligă preponderantly while 7 respondents (26.9% of all respondents) indicated that they had consumed bread preponderantly or as frequently as mămăligă. These results are compatible with a 95% Confidence Interval ranging from 52% to 89% for the entire rural

population from the appropriate age group which consumed mămăligă preponderantly. By comparison, only 3 out of 9 respondents (33%) aged 57 or younger had consumed mămăligă predominantly, a significantly lower proportion than that observed for the 58-65 age category (Fisher's exact test, $p=0.0435$) and compatible with a 95% Confidence Interval ranging from 0.07% to 71% for the proportion of rural residents from the appropriate age group that had consumed mămăligă predominantly. In this regard, the distribution of responses to the oral questionnaire confirms the finding of the 1957 Dietary Study that the majority of rural residents consumed mămăligă preponderantly during the 1950s. Secondly, the distribution of responses by age categories adds further weight to the argument that a change from mămăligă to bread had taken place some time during the 1960s or early 1970s by showing that at least the generation of rural residents which grew up during the 1960s had consumed, on average, mămăligă less frequently than the generation which grew up during the 1950s. Unfortunately, the small size of the sample and the correspondingly wide 95% Confidence Interval does not permit to evaluate the findings of the 1979-1980 Dietary Study and of the analysis on the distribution of industrially-produced bread that the majority of rural residents had began to consume bread preponderantly although the evidence tentatively supports this hypothesis.

Conclusions

In order to assure greater clarity for my arguments but at the expense of exaggerating the equivalent quality of the presented data and of the methodologies used for evaluating them, the estimates on the average contribution of wheat/rye to the total cereal consumption needs of rural residents and on the proportion of the rural population

which consumed bread preponderantly have been summarized in Tables 1.1 and 1.2. According to these estimates, the average rural resident from the relevant region had increased considerably his/her consumption of wheat/rye between 1957 and 1975 which translated into an increased proportion of rural residents which consumed preponderantly bread from a minority throughout the first half of the 20th century to the greater part of the rural population during the second half of the 1970s. The argument that rural residents from the relevant region had changed considerably their 'core' food consumption practices during the 1960s and early 1970s is supported by data from a variety of sources including macro-level estimates on the availability of industrially-produced bread per rural resident, the large-scale Household Budgetary Surveys, the small-scale in-depth 1979-1980 Dietary Study and by the distribution of responses to the 2013 oral questionnaire. Concerning the magnitude of the dietary change, according to the available data, the average rural resident from the relevant region had increased his/her consumption of wheat/rye from long term maximum levels ranging between 57% to 62% of the total cereal consumption needs for the periods 1900-1914 and 1921-1939 and a maximum level of 33% for 1957 to a minimum level of 77% for 1978. However, in interpreting these results, it has to be considered that all data referenced in the tables has been consistently selected and adjusted to produce the minimum possible difference between pre- and post-dietary change consumption levels for wheat/rye and, therefore, that the actual increase in bread consumption was certainly higher than the 24% to 35% increase rate showed by the presented data. The same preference for the minimum possible estimate applies to the difference between the proportions of rural residents which had consumed bread preponderantly before and after 1957 as the highest estimates

from the 95% Confidence Intervals have been assigned to the entire rural population from the relevant region based on the information from the 1906 and 2013 Retrospective Dietary Studies. Conversely, the estimate that about three fourths of the rural population from the relevant region had consumed bread preponderantly during the second half of the 1970s is based on a distribution model for industrially-produced bread which minimizes the number of rural residents that would qualify as bread consumers and, in addition, it does not take into account the availability of homemade bread and of bread produced through baking services whose distribution did not overlap with that of bread produced using state-supplied flour.

Overall, the available evidence strongly indicates that the rural residents from the relevant region had increased their consumption of bread beginning with the 1960s in absolute terms but especially relative to a declining level of ‘core’ food consumption and had done this by externalizing the preparation of the ‘core’ food to predominantly large-scale industrial enterprises. In addition, more detailed evidence from the 1979-1980 Dietary Study, from the dietary study of Bălțești Village (1983) and from the responses to the oral questionnaire shows that rural residents from all age categories had participated in the dietary change meaning that individuals which had consumed mămăligă preponderantly during an important part of their lives had come to consume bread preponderantly during the second half of the 1970s. What motivated these rural residents to switch from a diet centered on mămăligă to a diet centered on bread and their perceptions of the dietary change are the central topics that will be examined in the following three chapters.

CHAPTER 2: THE ROLE OF BAKERIES IN PROMOTING BREAD CONSUMPTION IN RURAL AREAS¹

Introduction

This chapter tells the success story of how the state gradually became a major supplier of bread to the rural population. By its topic, it contributes to a better understanding of the everyday life of the rural population during the 1960s and the 1970s by drawing attention to two important developments at the dietary level: the nation-wide increasing reliance on convenience foods and the regional specific process of replacing *mămăligă* with bread in the regular diet. For the rural population, market-acquired baking products best exemplify the turn towards convenience foods both in view of the extent to which they had participated in the regular meals of rural households and of the amount of housework they had ultimately freed. Moreover, the rising availability of bread affected perceptions of standards of living since it intersected consumers' appreciation of bread consumption particular to rural areas where bread performed the function of status food (see Chapter 4). The last section of this chapter will provide an assessment of the contribution of industrially produced bread to regular consumption and to the dietary change.

Switching from consumers to producers, the first section of the chapter includes an assessment of the economic performance of the baking industry during the interval 1950-1975 with a focus on its taylorist and fordist underpinnings. Given the importance of the baking sector among the branches of the Food Industry and of baking products in

¹ A version of this Chapter has been published as 'The Growth of Bread Consumption among Romanian Peasants, 1950-1980,' in *The Food Industries of Europe in Nineteenth and Twentieth Centuries Europe*, ed. Derek J. Oddy and Alain Drouard (Farnham: Ashgate, 2013), pp. 213-229. Copyright © 2013.

the daily expenditure of consumers, developments in efficiency and production costs carried significant implications for capital accumulation and real incomes. In particular, the authorities' ability to implement constructive cost-reducing measures represented the best strategy to assure sustainable capital accumulation given rising general labor costs without risking to antagonize consumers. The second section of the chapter picks up several such alternative, tension-ridden strategies for increasing capital accumulation and illustrates how the centrally-planned non-market production system adjusted imperfectly and selectively to consumers' preferences. The capacity of the Baking Sector to generate 'adequate' capital resources by alternating antagonizing and non-antagonizing strategies in a constant interaction with consumers, themselves moving from resistance to accommodation towards such strategies, determined to a considerable degree the level of bread production and distribution in rural areas.

In the final analysis, the Baking Sector, whether motivated by economic and/or political reasons, contributed significantly to the dietary change by making available sufficient quantities of industrially-produced bread in rural areas. On the other hand, the extent to which the authorities were able to convert one of its more successful attempts of influencing rural lifestyles into political capital was diminished by hidden price increases, low sensitivity to consumer demand in terms of output mix and the unreliable quality of the commercialized product.

2.1 Developments in the Baking Industry, 1950-1980: Production, economic performance and contribution to capital accumulation

Statistics on bread production for the 25 years following the nationalization act show an increase in total output of industrially-produced bread from 444400² tons to 2358000.³ The mechanism behind this impressive increase can be best mapped out by disaggregating the growth in output on production sectors and analyzing the relevant developments in each sector separately. Thus, roughly 10.5% of the 1975 output of bread came from consumers' cooperatives using state-provided flour, 6.5% took the form of dough preparation and/or baking services using customers' flour by Consumers and Agricultural Production Cooperatives and 83% was the share in output of state-owned factories. Considering that in 1950 all production took place in state-owned units, alternative units of production such as Consumers and Agricultural Production Cooperatives accounted for slightly more than one fifth of the increase in output. Since state-owned units were responsible for the largest part of the increases in bread production throughout the entire period and since they had remained the principal suppliers of industrially-produced bread to the population, I begin my analysis with this production sector.

2.1.1. Developments in the State-Owned Sector

Complete state ownership over the means of production in the baking industry was established only in 1950, the relatively less intense push for nationalization up to that

² C.C. al P.C.R. Secția Economică. 119/1952, 52.

³ Calculated from data on per capita consumption of bread in 1975 from C.C. al P.C.R. Secția Economică. 134/1976, 4 and from data on size of the population from *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică, 1977), 9.

date⁴ probably reflecting the authorities' concerns over its detrimental effects on the production of a highly valued and still scarce commodity. The small number of bakeries, 1017, that passed into state ownership indicates the extent of the contraction from interwar levels caused by war devastation and nationalization. These bakeries were organized by Decree No. 1065 of the Council of Ministers from October 5th, 1950 into 92 enterprises and 20 baking trusts,⁵ administrative entities that grouped all production units from a region or locality and constituted an intermediate level in a hierarchical administrative structure headed by the General Department of Baking and Flour Products (Direcția Generală de Panificație și Produse Făinoase) as part of the Ministry of the Food Industry.⁶

From an economic perspective, Table 2.1 summarizes the developments that have accompanied and enabled a 2.75 increase in the production of bread between the nationalization of enterprises and 1975. Two general remarks are supported by the data: first, that growth originated from a combination of increases in labor and investments and from technical and production changes, and second, that growth proceeded in stages in terms of both the magnitude of the increase between representative years and of the relative contribution of each factor to these increases. According to this data, the directly productive labor force had grown between 1959 and 1975 by approximately 73%. Quantitatively, the labor input measured in work hours matched or fell slightly behind the

⁴ Alexandru Negreanu and Ioan M Popa, "Un sfert de veac de adânci și importante transformări în dezvoltarea industriei de panificație și produse făinoase [A Quarter of a Century of Profound and Important Developments in the Baking and Flour Products Industries]," *Revista Industriilor Alimentare [Review of the Food Industry]* 8 (1969): 422.

⁵ C.C. al P.C.R. Secția Economică. 119/1952: "Raport cu privire la situația actuală și perspectivele de dezvoltare ale Industriei Panificației și Produselor Făinoase [Report on the Current Situation and Prospects for Development of the Baking and Flour Products Industry]," 3.

⁶ "Hotărârea Numărul 1065 privind înființarea 'Trusturilor de Panificație' [Decision Number 1065 concerning the Institution of 'Baking Trusts']," *Industria Alimentară.[The Food Industry]* 10 (1950): 3-5.

growth of the labor force, considering the constant length of 8 hours of one work shift⁷ during a 6 days workweek but allowing for more frequent or longer holiday leaves. Limiting the analysis only to directly productive workers, labor productivity measured in equivalent black bread units per hour of work grew from 49.2 kg in 1959 to 71.4 kg in 1975 (45% increase) and accounted for 52% of total production growth. For the entire period, simple increase in labor input contributed to 48% and simple productivity growth to 30% of the growth in production resulting from the combination of higher labor input and productivity growth. Part of the labor productivity growth resulted from qualitative changes in labor input such as superior qualification of workers, improved payment schemes rewarding productivity and better organization of work. For instance, the number of engineers and technicians increased as a percentage of total labor force from 1.04% in 1952⁸ to 3.1% in 1959⁹ and to 6.4% in 1975 concomitant with a rising share of blue collar workers trained through trade school rather than workplace courses.

The largest part of labor productivity growth can be attributed, however, to a sharp rise in the value of fixed funds¹⁰ and, implicitly, in the flow of capital services to production. The result of sustained investment in the baking industry, the rising value of fixed funds reflects primarily the intensification of production through progressive

⁷ For 1950 see “Organizarea muncii pe brigăzi în industria de panificație [The Organization of Work in Brigades in the Baking Industry],” *Industria Alimentară [Food Industry]* 1 (1950): 34, for 1960 see “Organizarea și mecanizarea divizării și prelucrării aluatului pentru pâinea albă [The Organization and Mechanization of Dough Division and Preparation in the case of White Bread],” *Industria Alimentară: Produse vegetale [Food Industry: Vegetal Products]* 11 (1960): 326 and “O noua metodă pentru stabilirea normelor de personal cu motivare tehnică în industria panificației [A New Method for Establishing Work and Payment Norms in the Baking Industry],” 392, for 1965, Olga Borda, “Fabrica de pâine a Combinatului de morărit și panificație ‘Dobrogea’ [The Baking Factory of the ‘Dobrogea’ Milling and Baking Enterprise],” *Industria Alimentară [Food Industry]* 9 (1965): 453.

⁸ C.C. al P.C.R. Secția Economică. 119/1952, 17

⁹ C.C. al P.C.R. Secția Economică. 77/1959, 15

¹⁰ The concept of ‘fixed funds’ is equivalent to the net wealth stock and includes the original value of buildings, machinery and technical equipment adjusted for depreciation.

mechanization and concentration in larger units rather than extensive development. During an initial phase covering the first two five-year plans, mechanization of the most demanding operations - flour sifting and dough kneading - had been extended from 30%¹¹ and 44% of total production in 1952¹² to 60% and 75% in 1959.¹³ In addition, baking in the less efficient earthen ovens had declined from overwhelming predominance in 1952¹⁴ to 48% of total production in 1959 at the expense of baking in ovens with indirect heating (47%) and in mechanical ovens (5%).¹⁵ However, the loading and unloading of bread from ovens and the dozing of raw materials continued to be performed manually while the operations of dividing, weighing and modeling the dough were mechanized to a limited degree.¹⁶ Several such operations were mechanized during a second phase characterized by higher levels of investment and emphasis on up to date technology. Mechanical dozers of raw materials were used for 37% of total production in 1975,¹⁷ baking in ovens with indirect heating became predominant by 1967¹⁸ while baking in the more advanced mechanical ovens covered 29% of production in 1975.¹⁹ Sifting and kneading had been completely mechanized and by 1970, 16% of total bread production was mechanically loaded and unloaded from ovens.²⁰ Finally, 11.4% of total

¹¹ Optimistic estimate based on the number of factories equipped with mechanical sifters and their assumed share in total production. Ion Mirea, "Dezvoltarea Tehnică a Industriei Panificației [Technological Developments in the Baking Industry]," *Revista "Industria Alimentară": Produse Vegetale [The "Food Industry" Review: Vegetal Products]* 3 (1956) 6-11.

¹² C.C. al P.C.R. Secția Economică. 119/1952, 23.

¹³ C.C. al P.C.R. Secția Economică. 77/1959, 41 and 23/1961, 92.

¹⁴ C.C. al P.C.R. Secția Economică. 119/1952, 3.

¹⁵ C.C. al P.C.R. Secția Economică. 77/1959, 42.

¹⁶ Ibid.

¹⁷ C.C. al P.C.R. Secția Economică. 134/1976, 20.

¹⁸ Niculae I. Niculescu, "Mecanizarea prelucrării aluatului, baza creșterii productivității muncii în industria panificației [Mechanizing the Operation of Dough Preparation, Basis for Raising Productivity in the Baking Industry]," *The Food Industry* 1 (1967): 14.

¹⁹ C.C. al P.C.R. Secția Economică. 134/1976, 20

²⁰ Alexandru Negreanu and Ioan M. Popa, "Un deceniu de la Scrisoarea conducerii partidului, adresată lucrătorilor din industria de morărit și panificație [A Decade from the Letter of the Party Leadership to the

bread production in 1975 was conducted in integrated production lines that were fully mechanized and automated. In dividing, weighing and modeling the dough however, mechanization lagged behind the other operations, a serious drawback considering their share of total labor input of 36-44% if un-mechanized under the technological conditions prevailing in 1967.²¹

The application of mechanization benefited from, and favored, the concentration of production in larger units. The average capacity per unit of production increased four times from 1952 to 1975 and reflected the marked decline of bakeries with capacities below 5 tons/24 hours, the sharp rise of bakeries with capacities of 10-20 tons/24 hours and a small but with large implications rise of bakeries with capacities over 40 tons.²² As a result, units with capacities above 10 tons/24 hours had a share of 70% of the capacity of production in 1970, up from 29% in 1950 and the rising trend continued until at least 1975 as the number of baking units decreased and the average capacity increased.

The progressive mechanization of production affected production prices and capital accumulation to an extent determined by the share of the relevant factors in the production cost. Similarly to other branches of the food industry, the value added component represented barely 8.3% of production costs in 1959²³ with shares of 7.35%

Workers of the Milling and Baking Industry],” *Industria Alimentară [The Food Industry]* 9 (1971): 496 on the share of production in tunnel-ovens and N. I. Niculescu, “Mecanizarea și automatizarea cuptoarelor pentru pâine [The Mechanization and Automatization of Ovens for Breadbaking],” *Industria Alimentară [The Food Industry]* 2 (1962) 14-18, on the automatic operations of loading and unloading bread in case of this type of oven.

²¹ Niculae I. Niculescu, “Mecanizarea prelucrării aluatului, baza creșterii productivității muncii în industria panificației,” 14.

²² Alexandru Negreanu and Ioan M. Popa, “Un sfert de veac de adânci și importante transformări în dezvoltarea industriei de panificație și produse făinoase [A Quarter of a Century of Profound and Important Developments in the Baking and Flour Products Industries],” *Revista Industriilor Alimentare [Review of the Food Industry]*, 8 (1969): 423.

²³ The following discussion is based on data from C.C. al P.C.R. Secția Economică. 77/1959, 91-92.

for labor remuneration and social security expenses and 0.92% for capital amortization. Given such low shares, the substitution of mechanical power for manual labor under the 1959 conditions of production would have reduced production costs by merely 0.75% but would have increased profits by 11% if the cost of electricity is considered to increase proportionally to the growth in value of fixed funds. A long term saving effect of mechanization has to be considered as well, since by reducing the number of workers needed to produce a given quantity of bread, it cushioned the consequences of a 2.2 times increase in medium wages between 1959 and 1975 that would have otherwise cancelled 82% of profits. Together with the mechanization of production, the introduction of more input efficient machinery, the rising quality of labor and its reorganization in accordance with tayloristic principles enabled planning authorities to maintain unchanged the standard average production price for black bread at the price readjustment of 1975 and to increase the share of turnover tax at the expense of the enterprises' profits. Both decisions tentatively suggest that average performance by baking enterprises was comparatively higher in 1975 than in 1959 by a margin sufficient to mitigate the effects of higher wages. Finally, a restructuring of the output in the direction of more profitable varieties (discussed below) determined value added per worker (profits and accumulation) to increase at even faster rates than labor productivity expressed in equivalent black bread units.

From a financial standpoint, the Baking sector achieved continuously growing accumulation levels but it began to face diminishing returns to costs. Accumulation - understood as non-retained profits and turnover tax - represented throughout the studied

period the principal source of revenue to the state budget (52.6% in 1956²⁴ and 38.7% in 1977²⁵) and, as such, contributed significantly to the financing of the economic (primarily investments), social and cultural activities of the state. Between 1959 and 1975, accumulation (profits plus turnover tax) in the Baking sector had increased from 205824000 lei²⁶ to 514655000 lei²⁷ primarily through a restructuring of the output in the direction of more profitable varieties. Besides references in the economic literature to the comparative profitability of producing higher-grade breads, profits increased faster than labor requirements with each superior variety of bread (from black to semi-white to white and to baking specialties and from simple to potato bread) with higher capital requirements unlikely to have been responsible for the differential. Concomitantly however, accumulation became progressively costlier: in 1959, 100 lei of accumulation was generated by 96 lei worth of costs whereas in 1975, 100 lei of accumulation was generated by 144 lei. The accumulation to cost (i.e. consumption) ratio represents a rough indicator²⁸ for the economic contribution of any product to the politically-desired objective of securing higher investments for economic sectors of choice. In this sense, given real or politically imposed constraints on labor recruitment and relatively similar capital costs, policies promoting the distribution of products displaying high ratios of accumulation to costs were comparatively more successful in securing, among other

²⁴ C.C. al P.C.R. Secția Economică. 27/1956, 64.

²⁵ C.C. al P.C.R. Secția Economică. 130/1976, 79.

²⁶ C.C. al P.C.R. Secția Economică. 77/1959, 91-92.

²⁷ Author's calculations, see the Annex to this Chapter for a detailed presentation of the method of calculation.

²⁸ The roughness of the indicator reflects its context-specific validity. The strength of the relationship between the distribution of products characterized by high accumulation to costs and investment resources depends on the availability of labor reserves and on the capital costs of alternative products. The distribution of a product characterized by a relatively lower accumulation to costs ratio and by a relatively higher accumulation to capital costs ratio may in the final analysis generate (secure) higher net investment resources if labor availability (or alternatively, consumption) is capable of accommodating its repercussions.

things, a higher rate of investments. Against the corresponding expenses for 100 lei of accumulation in the national economy of 184 lei in 1959²⁹ and 165 lei in 1975³⁰, a preliminary assessment suggests that the performance of the Baking Industry permitted well-above average ratios of accumulation to consumption at least during the initial stage of extensive development and generalization of potato bread.

The contribution of the Baking Industry to accumulation changes radically if, besides value added, primary inputs are included in the analysis. Throughout the period, the application of different retail prices to flours distributed directly to consumers and to flours intended to serve in the manufacturing of baking products produced, under conditions of identical production prices, different levels of turnover tax. Up to the price readjustment of 1963, retail prices for black and white flour were considerably higher than the corresponding delivery prices paid by baking units (2.575 lei and 5.3 lei against 2.22 lei and 4.55 lei). As a result, turnover tax charged on black and white flour sold directly to the population was higher by 0.355 lei (0.520 lei against 0.165 lei) and 0.750 lei per kg (2.225 lei against 2.975 lei).³¹ Between the major price readjustments of 1963 and 1975, turnover tax continued to be higher for black flour delivered directly to consumers (0.404 lei against 0.145 lei) although the difference diminished to 0.259 lei. For white flour however, turnover tax applied on flour delivered to baking units was now 0.930 lei higher following a reduction in the retail prices of unpacked and pre-packed flour to 3.62 lei per kilogram.³²

²⁹ C.C. al P.C.R. Secția Economică, 27/1956, 64, 98.

³⁰ C.C. al P.C.R. Secția Economică, 22/1976, 142.143.

³¹ Direcția Județeană Alba a Arhivelor Naționale. Întreprinderea de Morărit și Panificație Alba. 7/1963, 83-87.

³² Direcția Județeană Alba a Arhivelor Naționale. Întreprinderea de Morărit și Panificație Alba. 7/1973, 1-4.

The influence of these pricing practices on capital accumulation can be broadly assessed by using prices on the peasant market (free) as rough indicators of consumer demand. Taking existing prices on the state-controlled commercial network as given, price series for flour sold on the peasant market suggest that a) black flour sold as bread was less profitable compared to the alternative of selling it as such, b) white flour before the 1963 price readjustment was intermittently more profitable if sold as such and c) white flour fetched the highest price if sold as bread during the early 1970s and thus represented the optimum choice for increasing profits. The argument supporting the first assertion is straightforward: black flour was consistently priced highest on the peasant market³³ and lowest under the form of bread suggesting that existing consumer demand would have accommodated a transfer of flour from bread-making to direct delivery at the prevailing retail price. For semi-white and white flour, the above conclusion applies given identical configurations of prices - a situation most frequently encountered according to the recordings of prices on the peasant market but not without exceptions.³⁴ A radically different price configuration emerged during the early 1970s with white flour having its highest price when sold as bread, its second highest price on the peasant market and the lowest price when sold through the socialist commercial network. Under such a configuration of prices, the insignificant share of unsold quantities of bread (approximately 2% of total quantities distributed through the socialist commercial

³³ According to regular surveys of prices on the peasant markets from the main urban localities, the weighted average price of black flour was 3.98 lei on January 12th, 3.66 lei on August 15th and in October 1955, 4.92 lei in October 1956, 3.41 lei in 1969 and 4.1 lei in 1970.

³⁴ The price of white flour on the peasant market was 5.28 lei on January 12th, 4.89 lei on August 15th, 4.69 lei in October 1955, 6.2 lei in October 1956, 5.65 lei in 1963, 5.89 lei in 1964, 3.92 lei in 1969, 5.19 lei in 1970, 4.55 lei in 1972 and 4.22 lei in 1973.

network)³⁵ suggests first that the baking sector did not suffer losses due to insufficient demand that would have required a redistribution of flour through the commercial network at a lower price and second that competition from the state sector had not led to an equalization of prices on the peasant market. The lower price of white flour on the peasant market is particularly interesting as it indicates that consumers were willing to pay a premium for bread over and above the value added component. Compared with the more inclusive analysis, I consider that the narrow-focused analysis overestimates the sector's actual contribution prior to 1963 and underestimates it afterwards because it disregards the influences and potential alternatives offered by the multiple price system for raw materials.

The economic assessment presented above highlights both the importance and limitations of an economic explanation for the authorities' interest in the development of bread production. The high potential for accumulation, the product of a high rate of profits to costs, considerable quantitative production and accommodating consumer demand, certainly appealed to budget administrators, whether central or local depending on the administrative subordination of the baking units. For instance, at a 1959 meeting of the regional representatives of Local Industry on the current problems in the Baking and Milling industries, the participants frequently referred to the indispensable contribution of bread production to local budgets or to the overall profitability of local industries by covering the deficit caused by loss-making sectors.³⁶ The existence of a

³⁵ Calculated based on data from C.C. al P.C.R. Secția Economică. 19/1974, 15 and 17.

³⁶ C.C. al P.C.R. Secția Economică. 30/1960, 76, 84. The representative of the Craiova Region made the following comment which, I believe, illustrates perfectly the general opinion among decision-makers and the complex political and economic ramifications of bread production: '...Let me explain how it happens: in Craiova Region, if the production plan for bread is not fulfilled, there is a budget deficit of 16.000.000 lei. If they do not fulfill the production plan for bread, they have to cover the deficit from somewhere else.'

special regulation considering the production plan for baking and flour products fulfilled if demand by beneficiaries has been met did not mitigate internal profit-related incentives for expanding production given the rigidity of the planning system.³⁷ The delayed, partial and difficult adjustment of production and financial plans canceled profits and consequently affected the salaried personnel by denying them profit-related bonus payments in addition to creating a deficit in the local budget that was infrequently covered by state subsidies.³⁸ When adjustments did occur, the procedure was complicated and did not always cover adequately the incurring loss in profits: in the first semester of 1974 the Alba County Industrial Enterprise received a calcareous quarry as compensation for profit losses due to a restructuring of the output mix and level of output but still had to cope with a deficit of 583000 lei.³⁹ The adjustment process was smoother after the baking sector had moved under the authority of central administrators: a planned reduction of profits for 1979 of 49 million lei was intended to be absorbed completely by central budgetary reserves with no more annoyance than that occasioned by the loss of profit itself.⁴⁰ Only half the amount of the baking industry's profits was now reserved for local budgets and the transfer was performed indirectly from the proceeds of the reorganized sector. All these examples suggest a high awareness among decision makers of the financial repercussions on budgetary revenues and work payments of plan specifications and their implementation. The budgetary revenue-bread production link provides part of

They have reported this to the Ministry. Seeing that the Popular Council does not answer, they decided to send bread by trucks to rural localities so that they would be able to fulfill the production plan. The same situation happened in Pitești. This is not a local thing.'

³⁷ C.C. al P.C.R. Secția Economică. 8/1970, 4.

³⁸ C.C. al P.C.R. Secția Economică. 30/1960, 74, 80, 83.

³⁹ Only 46% of the resulting deficit was covered by the annual proceeds of the quarry. Direcția Județeană Alba a Arhivelor Naționale. Întreprinderea de Morărit și Panificație Alba. 22/1973, 193.

⁴⁰ C.C. al P.C.R. Secția Economică. 4/1979, 32- 37.

the explanation for the higher-level decision makers' choice to distribute growing quantities of bread in rural areas and for the medium- and low-level decision makers' participation in such distribution even at times when such practices were considered 'grain wasting' by higher authorities.

The explanatory power of economic factors should not be overestimated however. As explained previously, more profitable alternatives could have been implemented involving either an increase in the quantities of black flour distributed as such or an increase in the retail price of black bread. The authorities' preference for relatively high levels of supply of black bread at low prices is to be understood in light of the political function of bread distribution of rewarding the regime's privileged groups. Throughout the 1950s, distribution of bread was regulated to secure sufficient supplies for industrial workers and the urban population. This regulation entailed a considerable economic advantage for the beneficiary group as prices for black bread and black flour sold as such diverged considerably suggesting either a disguised subsidization of black bread or an overpricing of black flour on the socialist commercial market. The comparative advantage of buying black bread was significant and obvious to consumers as they had to pay for 720 gr. of black flour (the quantity prescribed in the normative recipe for producing 1 kilogram of bread) distributed through the socialist commercial network (the second best alternative) almost as much as for one kilogram of black bread (1.973 lei compared to 2 lei). Under these circumstances, a readjustment of retail prices and/or distribution patterns would have affected the welfare and supply conditions of the privileged group with potential negative political consequences for the regime. The distribution of black bread might thus illustrate the constraining effect of the regime's

own political aim of guaranteeing the supply and wellbeing of a privileged group on its capacity of generating increased accumulation. Anticipating a more detailed discussion in section 3 of this chapter, I argue that it was the inability of the rationing system to protect adequately the bread supply of the privileged group from frequent infringements by the non-privileged group that adds another dimension - political as opposed to economic - to the higher-level authorities' decision of distributing higher quantities of bread to the rural population.

2.1.2 Developments in the Cooperative Sector

Concentration of production was characteristic for units administered by the Ministry of Food Industry given their predominantly urban location. In general however, the optimum size of baking factories was considered to be largely determined by the size of the immediate consumer population in view of the economic inefficiency of transporting large quantities of bread on a daily basis over long distances and of the detrimental effects of transportation on the quality of a delicate product.⁴¹ Accordingly, the construction of small scale bakeries was proposed as a more economic solution to the task of promoting consumption of industrially produced bread in villages beyond certain distances from urban localities.

With the exception of a few state-owned units, rural bakeries belonged to either Consumers or Agricultural Production Cooperatives and their administrative subordination determined several aspects of their production activities. On the one hand,

⁴¹ Vintilă Rotaru, "Mărimea optimă a unei întreprinderi de industrie alimentară. Factorii tehnico-economici care o determină [The Optimum Size of a Food Processing Unit. The Determining Technical and Economic Factors]," *Industria Alimentară [The Food industry]* 3 (1969): 123-127 and Gheorghe Udrea, "Limita eficienței concentrării producției la fabricile de pâine [Limits to the Efficient Concentration of Production in Case of Bakeries]," *Industria Alimentară [The Food Industry]* 11 (1968): 625-627.

bakeries belonging to Consumers Cooperatives engaged in typical bread production using state-supplied flour but also provided baking services ranging from producing bread with grains and flour provided by customers to baking home-prepared dough.⁴² In calculating prices for their baking services, these bakeries followed the practice of state-owned factories and added production costs, profits and accumulation. On the other hand, bakeries belonging to Production Cooperatives provided only baking services to cooperative members and charged in exchange a sum needed to maintain the bakery operational and to assure accumulation. Without the profit component, prices for baking services were 20-25% lower at the Agricultural Production Cooperatives compared to the Consumers Cooperatives.⁴³ Nevertheless, adjusting for the consumers' input into the production process, the prices charged by all cooperative bakeries for their services were higher than the value of benefits, accumulation and production cost of the same operations performed by units of the baking industry. For instance, consumers had to pay between 0.40 and 0.65 lei to the Consumers Cooperatives or between 0.30 and 0.55 lei to the Production Cooperatives for having their own prepared dough (raw materials and labor) baked in the cooperatives' ovens. In the state baking sector under the technological conditions of 1959, the cost of all inputs except flour plus retained profits and accumulation amounted to 0.2954 lei⁴⁴ for one kilogram of black bread. The higher tariffs practiced by cooperatives reflected higher production costs due to small scale and lower

⁴² C.C. al P.C.R. Secția Economică. 10/1967, 57-59.

⁴³ Ibid. 58

⁴⁴ I have considered the labor input in the case of simple baking services by cooperative bakeries to include the modeling and baking of the dough. The share in total labor of these two operations for the baking industry has been calculated based on data on the number of workers involved in producing 100 kg of bread from Nicolae Cordăreanu, "O nouă metodă pentru stabilirea normelor de personal cu motivare tehnică în industria panificației, [A New Method for Fixing the Work Norms of Working Personnel from the Baking Industry]," *Industria Aliamentară [The Food Industry]* 2 (1965), 101.

mechanization of production but also higher accumulation values for the production of 1 kilogram of black bread of 72 lei and 110 lei for the services provided by Consumers and Production Cooperatives compared to 45.4 lei in the case of the State-Owned Baking Industry. Beyond pure economic calculation, the simple baking service might have not been particularly appealing especially to customers who had the possibility of buying ready-made bread using state-supplied flour at 2 lei per kilogram. The other offers, payment in wheat flour or grain, found more favor among consumers considering that the prevailing payment scheme in C.A.P.s involved both monetary and in-kind remuneration.

The proliferation of rural bakeries after 1960 translated a new-found concern among authorities with supplying industrially-produced bread to the rural population. Even though the task of establishing bakeries was stipulated in the 1948 model charter of the Consumers Cooperatives,⁴⁵ by 1960 simple bread production had barely reached 55000 giving a probable number of 230 bakeries.⁴⁶ Galvanized by state support, production doubled by 1965⁴⁷ and again by 1970⁴⁸ and finally settled at around 250000 tons in 1975.⁴⁹ Energetically advocated by authorities, production through baking services was introduced in 1960 but lagged behind simple production with increases to an estimated 46100 tons in 1970⁵⁰ and finally to 152450 tons in 1975.⁵¹ Indicative for the

⁴⁵ C.C. al P.C.R. Secția Economică. 56/1948, 5.

⁴⁶ Calculated as the difference between marketed quantities and the quantities produced by the baking industry in 1960. Data on bread production by the baking industry is taken from C.C. al P.C.R. Secția Economică.11/1960, 1.

⁴⁷ C.C. al P.C.R. Secția Economică. 15/1966, 12.

⁴⁸ C.C. al P.C.R. Secția Economică. 51/1971: "Proiectul de plan de dezvoltare a economiei naționale în perioada 1971-1975. Anexe la raportul de prezentare. Volumul 1: Principalii Indicatori [Project for the 1971-1975 Plan for the Development of the National Economy. Annexes to the Presented Report. Volume 1: Main Indicators]," 41.

⁴⁹ Ibid. Adopted based on the identity between planned and production figures for total bread production in 1975.

⁵⁰ Calculated as the difference between total bread production and the quantities produced by the baking industry (State-owned units and Consumers Cooperatives) in 1970. The data on total bread production is

lower appeal of baking services when other alternatives were available, production through the provisioning of such services was only 7% of the total production of Consumers Cooperatives in 1965.⁵² Throughout the period, Production Cooperatives had been responsible for the largest share of the growth in production.

2.2 Developments in the Baking Industry, 1950-1980: Looking at the bread

The following section aims to qualify the quantitative and technical developments by presenting the accompanying changes in the quality of bread. This analysis is intended to soften the homogenizing effect of using the umbrella-term bread to describe the end-product of different baking practices. Grounded in anthropological and consumer behavior theories on the consumers' specific expectations about the physical characteristics of the 'core' foodstuff, an analysis of the characteristics of the standard types of bread from different production sources helps identify misalignment between consumers' expectations and the actual product in a distribution system characterized by low adjustment to the particularities of demand. The analysis proceeds from the most obvious markers of quality change, such as modifications in the share of bread varieties in total production to more elusive effects linked to mechanical and scientific processes of production. As a context to this analysis, I start with a discussion of the actors involved in, and the workings of, the decision processes that directed production in an economic system where market prices did not perform this function.

taken from C.C. al P.C.R. Secția Economică. 24/1972, 74 and the information on bread production by the baking industry is taken from C.C. al P.C.R. 51/1971, 41.

⁵¹ C.C. al P.C.R. Secția Economică. 134/1976, 4. Calculated as the difference between total production and the quantities produced using state-supplied flour in 1975.

⁵² C.C. al P.C.R. Secția Economică. 10/1967, 57.

The responsibility for elaborating the production plans was considered to be shared by the General Directory, the bread trusts and enterprises and the Executive Committee of the Popular Councils as it was theoretically envisioned that the plan would be the outcome of a two-way dialogue between central and local institutions. In this interaction, the trusts in collaboration with local planning authorities had the task of assessing the demand for bread and the production potential within their jurisdiction and the representative of the Popular Council had the task of verifying the appropriateness of this assessment and of forwarding it to the General Directory. At the central level, the General Directory would draft, by drawing on the requirements formulated by the State Planning Commission and in view of the information received from the trusts, a ‘general’ production plan which had to be submitted for review to the State Planning Commission and finally to the Government for approval and implementation.⁵³ Finally, the Ministry of Internal Trade was supposed to contract the planned production of bread for sale to the population through its marketing networks.

The prevailing practice throughout the period was, however, for the central authorities to settle the details of each plan and to leave to the trusts the sole responsibility of implementing them at the regional and local level. The situation was less straightforward at the central level where, at times, conflicts of interests emerged between the representatives of the Ministries of Internal Trade and Food Industry that altered the conventional practice. The propensity for conflict was present under the centrally-

⁵³ “Decret Nr. 428 pentru înființarea și organizarea Ministerului Industriei Alimentare [Decree No. 428 concerning the Institution and Organization of the Ministry of Food Industry],” *Industria Alimentară [The Food Industry]* 1 (1950): 52 and “Hotărârea Numărul 1065 privind înființarea ‘Trusturilor de Panificație’ [Decision Number 1065 concerning the Institution of ‘Baking Trusts’],” *Industria Alimentară [The Food Industry]* 10 (1950): 3-5.

directed system of production because developments within the two Ministries influenced their respective capacities of fulfilling their assigned plans. As the performance of the Ministry of the Food Industry was measured by its effectiveness in implementing production plans and as the performance of the Ministry of Internal Trade depended on its capacity to sale products, production plans that allowed higher accumulation rates but were at odds with consumers' demand and vice versa had the potential to create frictions at the decisional level. During negotiations of plans, the Ministry of Internal Trade assumed the role of spokesperson for the consumers by virtue of its dependence on the consumers' purchasing propensity for achieving its assigned goals. The scope of the Ministry's intervention was limited to situations of manifest consumer opposition, rare under conditions of insufficient supplies and rising incomes, but with all its shortcomings its activity assured a certain degree of flexibility to the centrally-planned system.

The rising share of higher-grade bread in total production throughout the period has been the most important qualitative change. Higher-grade bread refers to semi-white and white breads and baking specialties that are made from flours with lower extraction rates from grain compared to black bread. Figure 2.1 illustrates this trend, with black bread declining from overwhelming predominance (98.3% of total production) in 1950 to just above one quarter by 1976.⁵⁴ Among the higher-grade bread, the most significant increases occurred for white and semi-white bread which by 1976 accounted for 32.3% and 29.7% of total production respectively. While the proportional decline of black bread

⁵⁴ The Figure 2.1 is based on data from Alexandru Negreanu and Ioan M Popa, "Un deceniu de la Scrisoarea conducerii partidului, adresată lucrătorilor din industria de morărit și panificație," 426 for the interval 1950-1969 and on data from C.C. al P.C.R. 14/1977, 31 for the interval 1970-1976.

had been continuous, individual higher-grade breads alternated periods of bursts with periods of leveling-off and even slight decline reflecting changes in the official policy.

The first burst of rapid growth occurred in 1951, one year after the government allowed the production of a limited quantity of white bread and baking specialties to be sold freely on the market.⁵⁵ Throughout the 1950s, the share of white bread remained constant at roughly 10% of total production but during the first part of the 1960s it slightly declined only to soar again from 1968 onwards. Semi-white bread and baking specialties entered production in 1953⁵⁶ and 1950, but quantities produced remained modest up to 1963 and 1966 respectively when production was boosted as part of a comprehensive project of improving the quality of bread along with the profitability of the industrial baking sector.

In addition, the extraction rate for flour defining each type of bread had changed successively. For black bread, the level of extraction decreased from 0.90 to 0.85 in 1961⁵⁷, increased to 0.92 in 1969⁵⁸ and decreased again to 0.88 in 1976.⁵⁹ The standard extraction rate for semi-white bread had been 0.75 between 1953 and 1969⁶⁰ but had increased to 0.78 in 1969⁶¹ and 0.81 in 1976.⁶² At some point between 1964 and 1969,

⁵⁵ C.C. al P.C.R. Secția Economică. 15/1950: “Hotărârea Secretariatul C.C. al P.M.R. din 21.XI. 1950 cu privire la reglementarea consumului de pâine și al produselor de panificație [The Decision by the Secretariat of the Central Committee of the Romanian Workers Party from November 21st, 1950 Concerning the Regulation of Consumption of Bread and Baking Specialties]”, 1.

⁵⁶ Gheorghe Popescu, “Tot mai multe produse de panificație [Ever More Baking Products],” *Industria Alimentară [Food Industry]* 8-9 (1953): 9.

⁵⁷ C.C. al P.C.R. Secția Economică. 15/1950, 6 and “Ridicarea calității produselor - sarcină centrală în industria alimentară [Raising Product Quality - A Priority in the Food Industry],” *Industria Alimentară: Produse Vegetale [Food Industry: Vegetal Products]* 8 (1961): 229.

⁵⁸ C.C. al P.C.R. Secția Economică. 23/1975, 2.

⁵⁹ C.C. al P.C.R. Secția Economică. 14/1977, 35.

⁶⁰ C.C. al P.C.R. Secția Economică. 77/1959, 12.

⁶¹ C.C. al P.C.R. Secția Economică. 23/1975, 2.

⁶² C.C. al P.C.R. Secția Economică. 14/1977, 35.

the extraction rate for white flour was changed from 0.30⁶³ to 0.32.⁶⁴ The increases in extraction rates were implemented to improve accumulation per unit of bread by reducing production costs and, together with the concomitant emphasis on the production of higher accumulating varieties of bread (white bread and specialties), to fill the gap in revenue caused by the non-fulfillment of the 1966-1970 production plan in its initial form.⁶⁵

The rising share in production of higher-grade breads and the general increase in the flour extraction rate after 1965 combined to affect the quality of lower-grade breads. Specifically, the generalization in the Milling Industry of the practice of producing two types of flour from the same grain: higher-grade flour from the innermost part of the grain (up to 0.3 or 0.32) and lower-grade flour from the remaining part of the grain (0.3-0.83) had contributed to a decrease in the performance in baking of the lower-grade flour by having reduced the amount of high-quality gluten present in the second batch of flour.⁶⁶ These effects were exacerbated by the increase in the official extraction rate (from 0.85 to 0.92 parts of grain) which brought into flour outer parts of the grain that had high percentages of ash and cellulose and which were poor in gluten⁶⁷ with the overall result, according to the planning authorities, that the quality of black bread had decreased

⁶³ Mircea Nicolaescu, "Metode experimentale de laborator pentru efectuarea probelor de coacere în scopul verificării în producție a însușirilor de panificație ale făinurilor [Laboratory Experimental Methods for Conducting Baking Sampling for Determining the Baking Properties of Flours used for Bread Production]," *Industria Alimentară [The Food Industry]* 6-7 (1964): 267.

⁶⁴ Gheorghe Moldovan, "Cercetări cu privire la extracția făinii de grâu pentru panificație [Research on the Extraction Rate of Wheat Flour Used for Baking Bread]," *Industria Alimentară [The Food Industry]* 8 (1969): 434-438.

⁶⁵ C.C. al P.C.R. Secția Economică. 62/1966, 79 and 148 and 37/1969, 27.

⁶⁶ Simion Popescu, "Tipizarea Făinurilor de Grâu," *Revista "Industria Alimentară": Produse Vegetale [The "Food Industry" Review: Vegetal Products]* 10 (1956): 5.

⁶⁷ Gh. Moldovanu, "Cercetări cu privire la extracția făinii de grâu din panificație [Research on the Extraction Rate of Flour Used for Baking Bread]," *Industria Alimentară [The Food Industry Review]* 8 (1969):

markedly between 1965 and 1975.⁶⁸ Nevertheless, it is difficult to evaluate whether consumers agreed with the conclusion of the authorities responsible with setting and enforcing quality standards for production that the quality of black bread had deteriorated especially considering their previous practice of baking bread from flours with very high extraction rates. Based on un-elicited information from my oral interviews with rural residents, I believe that rural consumers may have perceived more negatively the change from baking bread in earthen ovens to baking bread in mechanical and electrical ovens given their preferences for bread baked ‘pe vatră’ and the recognized differences in the physical properties of bread baked in different types of ovens. Overall, the most important point of this discussion is that bread identified consistently with the same label throughout the studied time may have looked very differently at various points in time in terms of properties that may have been relevant to consumers.

The choice of products had also become more varied as the number of marketed baking products increased to 80 by 1955⁶⁹, 112 by 1960⁷⁰ and 180 by 1967⁷¹ with the baking sector being one of the most active branches of the Food Industry in introducing new products.⁷² The new kinds included varieties of established products of differing weight or shape but also new products in terms of ingredients. In 1976 for example, the offer for bread ranged from loaves of 4000 to 250 gr. of round or elongated shapes and

⁶⁸ C.C. al P.C.R. Secția Economică. 23/1975, 2.

⁶⁹ E Trattner, “Aspecte sociale actuale ale producției industriei alimentare în R.P.R. [Current Social Aspects of Industrial Food Production in R.P.R.],” *Industria Alimentară: Produse Vegetale [Food Industry: Vegetal Products]* 11 (1956): 13 (includes biscuits and other flour products as well).

⁷⁰ C.C. al P.C.R. Secția Economică. 11/1960: “Referat cu privire la situația sectorului de morărit și panificație [Report on the Situation of the Milling and Baking Sectors],” 14.

⁷¹ Teodor Zaharia, “Îmbunătățirea aprovizionării populației cu pâine și produse de panificație [Improving the Distribution of Bread and Baking Specialties to the Population],” *Industria Alimentară [The Food Industry]* 4 (1967): 1965.

⁷² “1947-1972: Un bilanț semnificativ pentru industria alimentară [1947-1972: An Assessment of Developments in the Food Industry],” *Industria Alimentară [The Food Industry]* 12 (1972): 655.

was complemented by baking products of down to 50 gr. of various shapes. New ingredients such as potato paste, milk byproducts, soybean, vitamins and minerals were added to the usual ingredients to enhance the nutritional value of the resulting bread while some ingredients such as salt were eliminated to produce special kinds of breads.

Among the new ingredients introduced into bread making, potato paste had been the single most important addition to the established recipe as indicated by the considerable share of potato bread in total production. On the market since at least 1960, the production of potato bread was boosted to significant levels by a Council of Ministers' decree from 1963.⁷³ For instance, in the Dobrogea regional baking trust production of potato bread spiked up from 3% of total production in 1963⁷⁴ to 75.7% in 1965⁷⁵ while in the Dobrogea Milling and Baking Enterprise it rose from 8.5%⁷⁶ during the fourth trimester of 1963 to 37% in 1964.⁷⁷ Such high levels proved to be unsustainable in view of consumers' opposition towards the more expensive potato bread and thus production levels for 1966 were scaled down to 65%⁷⁸ of total production in the Dobrogea regional baking trust and to 31.6% from a planned share of 49.9% for the national production during the first semester of 1966.⁷⁹ Nonetheless, the share of potato

⁷³ Direcția Județeană Constanța a Arhivelor Naționale. Trustul de Panificație Constanța. 256/1965: "Raport: Privind rezultatele obținute în prima etapă de fabricare a pâinii cu cartofi- octombrie 1963- mai 1964 [Report: On the Results of the First Phase of Producing Potato Bread - October 1963 - May 1964]," 65- 72.

⁷⁴ Direcția Județeană Constanța a Arhivelor Naționale. Trustul de Panificație Constanța, 176/1961, 12-13; 24. Since production of potato bread commenced in October, the entire quantity for 1963 was produced during the fourth trimester when it represented 16.5% of total production.

⁷⁵ Direcția Județeană Constanța a Arhivelor Naționale. Trustul de Panificație Constanța. 183/1961-1966, 96-98 and 256/1965, 90.

⁷⁶ Direcția Județeană Constanța a Arhivelor Naționale. Întreprinderea de morărit, panificație și produse făinoase Constanța. 34/1963, 10-11.

⁷⁷ Direcția Județeană Constanța a Arhivelor Naționale. Întreprinderea de morărit, panificație și produse făinoase Constanța. 24/1965.

⁷⁸ Direcția Județeană Constanța a Arhivelor Naționale. Trustul de Panificație Constanța. 183/1961-1966, 96-98.

⁷⁹ C.C. al P.C.R. Secția Economică. 18/1966, 123.

bread in total production remained high with just the black and semi-white potato bread varieties accounting for a full one-third of the planned production quantities for 1977.⁸⁰

An in-depth look at the negotiation processes leading to the qualitative changes described so far discloses the tensions inherent to the decisional system in the Baking Industry and also some of the consumers' reactions. The successive measures of reducing the extraction rates for black and semi-white flour and of increasing the shares of semi-white and potato bread reflected the government's concern for improving the quality of industrially-produced bread, as well as - in the case of the last two measures - its desire to increase capital accumulation in the baking sector. According to data for 1966⁸¹, capital accumulation relative to simple black bread was 56% higher for semi-white bread, 143% for white bread and 2500% for baking specialties while capital accumulation for potato bread relative to its corresponding simple type was 835% higher for black potato bread, 426% for semi-white potato bread and 326% for white potato bread. In all cases, increased capital accumulation was realized through higher selling prices. Consumers were charged 3.2 lei for semi-white bread, 60% more than for black bread (2 lei) while white bread and baking specialties were 120% (4.4 lei) and 260% (7.2 lei) more expensive than black bread. The potato bread varieties were one quarter, one eighth and one twelfth more expensive than the simple kinds.

Correspondingly, the rising share of higher grade bread in total production increased the average price consumers had to pay for one kilogram of bread from 2 lei in

⁸⁰ C.C. al P.C.R. Secția Economică. 14/1977, 33, 29.

⁸¹ All subsequent figures in this paragraph are based on information taken from C.C. al P.C.R. Secția Economică. 13/1967, 81.

1952 to 2.44 lei in 1959 to 2.8 lei in 1965⁸² and to 3.72 lei in 1973.⁸³ Structurally, the average price increase reflected the combined effects of growing production of more expensive varieties and of declining production of cheaper varieties as illustrated in figure 2.2.⁸⁴ Beginning with 1963, the relative decline of the cheaper black bread turned into an absolute decline with marketed quantities falling from approximately 1175000 tons to 737600 in 1970 and to a planned figure of 650000 in 1977.⁸⁵ Moreover, for the latter year potato bread accounted for 58% of the planned production of black bread meaning that by that date the cheapest bread had declined to a quarter of its pre-1963 level. For semi-white bread, absolute decline had been less marked with quantities falling from 859200 tons in 1971 to 705900 in 1976.⁸⁶ Nevertheless, the rising share of the potato variety from approximately 9% in 1965 to 63% in 1977 kept quantities of simple semi-white bread at roughly the same level in spite of the steep rise in production during the second half of the 1960s.

The diminishing availability of simple black bread sparked a series of conflicts between the Ministry of Food Industry, the Ministry of Internal Trade and consumers. The first signs of trouble became evident with the non-fulfillment of the production plan by value in 1965,⁸⁷ possibly due to planned production quantities for semi-white bread in excess of consumers' demand. To make good the deficit in revenue, in May 1966 the Ministry of Food Industry revised the gradual pattern of growth in share of black potato

⁸² C.C. al P.C.R. Secția Economică. 12/1966, 41.

⁸³ C.C. al P.C.R. Secția Economică. 19/1974, 17.

⁸⁴ The increases in the average price of 1 kilogram of bread reflect almost exclusively the indirect effect of the changing weight of bread types in total production as, disregarding a small drop in the price of white bread and the abolition of subsidized prices for rationed black bread in 1955, bread prices had remained unchanged up to the end of the 1970s.

⁸⁵ C.C. al P.C.R. Secția Economică. 14/1977, 33.

⁸⁶ C.C. al P.C.R. Secția Economică. 14/1977, 33.

⁸⁷ C.C. al P.C.R. Secția Economică. 13/1966, 99, 131.

bread in the direction of an immediate significant increase followed by steady decline to slightly higher levels than originally planned (26.3% against 23.5%).⁸⁸ The revisions were adopted against the objections of the Ministry of Internal Trade that the new quantities of black potato bread did not correspond to consumers' demand but only added to their expenses. On these grounds, the Ministry of Internal Trade responded to a planned increase from 27% to 49.9% in the share of potato bread between the first semesters of 1965 and 1966 by commissioning quantities amounting to just 31.6% of total production. The gap between the planned and commissioned figures was located at the level of black potato bread where barely 190000 of the planned 316000 tons were eventually produced. The misalignment continued in 1967 when, in the Mureș Autonomă Maghiară region for example, semi-white potato bread represented 35% compared to 60% of semi-white bread in accordance with the recommendations of the regional Commercial Direction and against the indicators received by the region's baking trust.⁸⁹ The representatives of the Ministry of Internal Trade justified their dissent by referring to repeated consumers' complaints about the insufficient availability of simple black and semi-white bread.⁹⁰ In fact, archival documents discussed in Chapter 3, Section 3 indicate that the central planning authorities were equally aware that the changes in the output mix went against consumers' preferences but had nonetheless decided to push forward with the changes in order to increase capital accumulation.⁹¹

The end result of these skirmishes for the Ministry of Food Industry had been a bigger deficit in 1966 and the adoption of another approach for raising the value of

⁸⁸ C.C. al P.C.R. Secția Economică. 18/1966: "Notă privind producția de pâine în perioada planului cincinal 1966-1970 [Note Concerning the Production of Bread during the 1966-1970 Production Plan]," 121-123.

⁸⁹ C.C. al P.C.R. Secția Economică. 13/1967, 78.

⁹⁰ *Idem.* 78, 80.

⁹¹ C.C. al P.C.R. Secția Economică. 19/1974, 17-19.

production combining increased output of baking specialties (beginning with the fourth trimester of 1966)⁹² and white bread with decreased extraction rates for all types of flour. For the consumer, it stabilized the share of potato bread at approximately one third of bread production but it could not reverse the relative and absolute decline of black bread. Ultimately, the trade-off reflected, albeit in a distorted manner, the consumers' choice under restricted alternatives in view of their preference to pay an extra larger amount for higher valued types of bread than to pay an extra lower amount for the subtle benefits of potato bread: delayed staling, better coloring and enhanced fragrance.⁹³ Moreover, the burden of increased expenditure had been shifted to higher earning categories and in particular to the urban population in view of a distribution pattern favoring the rural population in the allocation of black bread and the urban population in the allocation of baking specialties and white bread.

2.3 Macro-Level Distribution of Industrially-Produced Bread

By 1975, the date of the first studies indicating that a significant change in the consumption patterns of bread and mămăligă had occurred, the yearly per capita output of industrially-produced bread had increased from 41 kg in 1950 (maximum estimate) to 111.5 kg.⁹⁴ The final section of this chapter provides an estimate of the contribution of industrially-produced bread to the growth of bread consumption among the rural population of Oltenia and Muntenia. The analysis starts with a calculation of the

⁹² C.C. al P.C.R. Secția Economică. 18/1966: "Notă cu principalele probleme ale planului pe anul 1967 al Ministerului Industriei Alimentare [Note Concerning the Principal Problems of the Proposal for the Production Plan for 1967 Presented by the Ministry of Food Industry]," 230-231 and 62/1966, 148.

⁹³ Nicolae Spătaru, "Fabricarea pînii cu cartofi [Producing Potato Bread]," *Industria Alimentară [The Food Industry]* 10 (1964): 457-462.

⁹⁴ *Anuarul Statistic al Republicii Socialiste România pe 1968 [Statistical Yearbook of the Socialist Republic of Romania for 1968]* (Bucharest: Direcția Centrală de Statistică, 1969). 444 and C.C. al P.C.R. Secția Economică. 134/176, 4 and 9.

quantities of industrially produced bread distributed in the countryside and progresses gradually to a more geographically focused discussion of the participation of industrially produced bread to the dietary change.

I have calculated the quantity of bread reaching the villages as the residual quantity of bread left after urban consumption at a certain level has been satisfied. The urban population considered here includes the residents of towns and cities and of suburban communes although in the latter localities up to one half of the residents were occupied in agriculture.⁹⁵ The levels of consumption considered to apply to the urban population are taken from official surveys of working class and salaried urban households and they show an increase from 105 kg of bread per year per person in 1948⁹⁶ to 139.3 in 1952⁹⁷, 159.6 in 1956⁹⁸ and to 169.74 in 1958.⁹⁹ After 1958, the level of consumption is considered to have remained constant in spite of reported small drops.¹⁰⁰ Three assumptions are made concerning the levels of consumption and their appropriateness affects the precision of my results: that the levels have not been inflated, that they are representative for the entire urban population as defined above and that they register

⁹⁵ *Recensământul Populației și Locuințelor din 15 martie 1966. Vol. I: Rezultate Generale. Partea Întîi-Populație [The Population and Housing Census of March 15th, 1966. Volume I: General Results. First Part: The Population]* (Bucharest: Direcția Generală de Statistică, 1969), XXVII.

⁹⁶ C.C. al P.C.R. Secția Economică. 58/1953: "Material Informativ cuprinzând date cu privire la nivelul de trai al populației din R.P.R. - muncitori, ingineri, tehnicieni, funcționari, țărani colectivști și țărani individuali [Informational Material with Data on the Standard of Living of the Population - Workers, Engineers, Technicians, Bureaucrats, Collectivized and Un-Collectivized Peasants]," 5.

⁹⁷ Ibid.

⁹⁸ E. Trattner, "Aspecte sociale actuale ale producției industriei alimentare din R.P.R.," *The "Food Industry" Review. Vegetal products* 3 (1956): 13.

⁹⁹ C.C. al P.C.R. Secția Economică. 220/1959: "Creșterea Nivelului de trai în perioada 1960-1975. Material Documentar pentru elaborarea schiței program pe perioada 1960-1975 și a planului economiei pe perioada 1960-1965 [Increases in Standards of Living in the period 1960-1975. Documentary Material for the Elaboration of the Draft Program for the period 1960-1975 and of the Economic Plan for the Period 1960-1965]," 52.

¹⁰⁰ Mihai Căliman, "Evoluția producției sortimentelor de franzelărie și posibilitatea de lărgire a acesteia [Developments in the Production of Baking Specialties and the Possibilities for its Diversification]," *Industria Alimentară [The Food Industry]* 1 (1968): 39.

consumption of market-acquired bread. The final component of my formula, marketed quantity of bread, is determined by aggregating the production of state-owned and cooperative bakeries. Since this figure is not adjusted for losses during transportation, commercialization and stocking, it overestimates the actual quantities of bread reaching the consumers. However, in the calculation of bread quantities reaching rural consumers, this upward bias in actual consumption is counterbalanced by the underestimating effects of using higher than probable urban levels of consumption after 1958 and of urban levels in measuring consumption of industrially produced bread by suburban residents.

Figure 2.3 presents estimates of the quantities of industrially-produced bread available to rural residents based on the movement of the relevant factors illustrated in figure 2.4. According to this data, between 1948 and 1959 the quantities of industrially produced bread per rural resident declined slightly as marked urban and small rural population growth and higher levels of bread consumption in urban areas absorbed the one and a half increase in bread production. Throughout this period, high irregularity characterizes the pattern of growth involving significant swings from the highs of 1948 and 1956 to the troughs of 1952 and 1959. The first trough in 1952 was the result of a discriminatory policy against rural residents in the granting of food cards. Between 1947 and 1967, part of the bread production was reserved for holders of cards or buying tickets selected according to consistently urban biased regulations. The system of regulated distribution up to 1954 covered all basic consumer goods and was initially intended to secure minimum supplies under scarcity conditions to the entire industrial labor force. However, from 1947 onwards a series of rulings drastically reduced the number of rural beneficiaries. One of the first such rulings from 1949 denied access to bread to holders of

food cards who owned, themselves or through their families, more than 1.5 hectares of land. Further limitations, this time banning access to food cards to rural workers on grounds of land ownership above a certain quota¹⁰¹ or to their families because of rural residence,¹⁰² reduced the number of rural cardholders from an average of 1453400 in 1948 to 705830 in 1952.¹⁰³ As a result, the quantity of rationed bread reaching the villagers dropped by 77500 tons (from 173800 to 96250 tons),¹⁰⁴ a loss of a guaranteed and subsidized share¹⁰⁵ of almost 10% of total bread production in 1952 at the predominant expense of former family member cardholders. Nevertheless, evidence presented in the draft-proposal for the scrapping of the card system indicates that rural levels of card ownership gradually recovered to approximately 1300000 cardholders by 1954.¹⁰⁶

The second trough in 1959 was the endpoint of a steady decline in quantities of bread that reached the rural population that reflected the combined effects of modest production growth beginning with 1955 and of higher levels of consumption by a moderately growing urban population. In total, the quantity of industrially-produced bread reaching rural residents in 1959 was 74690 tons lower than in 1956 amounting to a drop of 6 kg in per capita terms. The transfer of this quantity from rural to urban consumers was realized through the distribution system based on cards and, more

¹⁰¹ C.C. al P.C.R. Secția Economică. 149/1952, 30-34.

¹⁰² Ibid. 42.

¹⁰³ C.C. al P.C.R. Secția Economică. 339/1952, 6-7.

¹⁰⁴ Calculated using data on number and type of cards owned by rural residents from C.C. al P.C.R. Secția Economică, 339/1952, 6-7 and on the daily ration of bread corresponding to each type of card from C.C. al P.C.R. Secția Economică. 15/1950 for 1948 and 1952 and 339/1952, 12 for inferring the ration for the new type of card D3.

¹⁰⁵ The price of rationed black bread, the standard type of bread distributed by cards, was 70 bani, just 35% of the price of black bread sold on the free market.

¹⁰⁶ C.C. al P.C.R. Secția Economică. 70/1955, 30.

generally, through the central authorities' command over the allocation of bread. The urban bias in the card system persisted after 1954 as well, when preferential access was abolished for all other food products except bread and sugar. Proposed as a temporary measure to cope with the insufficient grain harvest of 1955, the system of restricted distribution based on tickets remained in force until 1967 as a response to ongoing difficulties in adequately satisfying consumer demand for bread. The supply problem became particularly serious during the last years of the Second Five-Year Plan as bread production fell 30000 tons short of the already modest figure of 1140000 tons planned for 1960.¹⁰⁷ The deteriorating conditions of supply determined another reduction in the number of workers with rural residence rewarded according to urban distribution norms from 1212000 in 1956 to 790000 in 1959¹⁰⁸ and the redistribution of the resulting quantities of bread on the free market. Given the restriction attached to the selling of non-rationed bread through urban outlets to customers who could not provide proof of urban residence at purchase¹⁰⁹ and the insignificant quantities sold through the rural retail network, the larger part of the newly available quantities accrued to the urban consumer.

The 1960-1965 six-year plan marked a turning point in the central planners' policy regarding the distribution of bread to the rural population. In forecasting the production of bread for the next 15 years, the planners proposed an increase in deliveries

¹⁰⁷ C.C. al P.C.R. Secția Economică. 27/1956, 33.

¹⁰⁸ C.C. al P.C.R. Secția Economică. 77/1959, 4.

¹⁰⁹ It is evident from archival sources that the free market was not quite 'free'. The allocation system might have operated since the beginning and certainly during the second half of the 1950s on two levels of exclusion: the card/ticket level separated the urban salaried personnel and the rural employees in key industrial and administrative positions from the rest of the population and the regulated market level separated the urban from rural residents. Precedence was given in the distribution of bread to the salaried group which received tickets to support their claim to a guaranteed quantity of bread and to the urban population in the distribution of non-rationed (residual) bread by the requirement that consumers present their identity cards on every purchase to confirm their urban residence. C.C. al P.C.R. Secția Economică. 34/1956, 7.

of bread to rural residents from 40000 tons in 1960 to 250000 in 1965 and 420000 in 1975.¹¹⁰ As a result, per rural resident consumption of industrially produced bread using state-owned flour was expected to increase from 14.14 kg in 1959 to 38 kg in 1975. Additionally, the planners aimed at initiating and extending the provisioning of baking services using customers' flour to that part of the population that had access to sufficient quantities of wheat as a complementary route of reducing consumption of maize flour and home-made bread in the countryside.¹¹¹ As a result of these measures, optimistic forecasts predicted that by 1975 the baking industry would supply 90% of total bread consumption¹¹² while consumption of mămăligă would drop proportionally with rising living standards.¹¹³ These goals steadily became a priority for the baking industry so much so that by the time of the programmatic study outlining the prospective developments of bread production between 1975 and 1990, they justified by themselves a considerable increase in output beyond the growth rate of the population.¹¹⁴

The performance of the Baking Industry between 1959 and 1975 confirms the decision-makers' commitment to the new policy line. According to my calculations, the planned indicators for 1975 had been largely achieved by 1965 when 401000 tons of bread made their way to rural consumers giving a per rural resident consumption of

¹¹⁰ C.C. al P.C.R. Secția Economică. 77/1959, 5, 9-10. The quantity of industrially produced bread planned for distribution in the countryside in 1975 has been calculated based on the projected figure of 3 million 'rural consumers' at a level of consumption of 140 kg per year. Per rural resident consumption for the same year has been obtained by dividing this quantity with the predicted size of the rural population (11 millions).

¹¹¹ Ibid. 5, 9.

¹¹² Ion Munteanu, "Dezvoltarea în Perspectivă a Industriei Alimentare [The Development Prospects of the Food Industry]," *Industria Alimentară: Produse Vegetale [The Food Industry: Vegetal Products]* 7 (1960): 199.

¹¹³ C.C. al P.C.R. Secția Economică. 13/1967, 4.

¹¹⁴ C.C. al P.C.R. Secția Economică. 134/1976: "Program privind dezvoltarea producției de pâine, specialități de panificație și produse făinoase în perioada 1976-1980 și principalele direcții până în 1990 [Program outlining the Development in the Production of Bread, Baking Specialties and Flour Products between 1976 and 1980 and the Main Directions of Development up to 1990]," 24.

industrially produced bread made with state-provided flour of 34 kg.¹¹⁵ This growth in per rural resident production of bread was made possible by an over fulfillment of the production plan for the 1959-1965 Six Year plan of almost 100000 tons, the Baking Industry managing to achieve the 8th rate of growth among 16 major branches of the Food Industry. As production by the Baking Industry was expected to grow at the most modest rate - a mere 39% increase compared to a median planned growth rate of 127% for the 16 branches of the Food Industry - the actually realized output might reflect a higher responsiveness among decision-makers to the demands and disposable income of post-collectivization rural inhabitants.¹¹⁶ Reinforcing the impression of a realignment of political attitudes towards the peasantry, the Sugar and Cooking Oil Industries, which catered to the needs of rural populations more extensively than the more urban-oriented Milk, Meat, Confectionary and Flour Products Industries, displayed the second and fifth highest rates of growth¹¹⁷

Per rural resident distribution reached its peak at 63 kg in 1971¹¹⁸ but by 1975 had decreased to 54.5 kg reflecting the combined effects of stagnation in production and

¹¹⁵ Data on rural and urban population has been taken from *Anuarul Statistic al Republicii Socialiste România pe 1968 [Statistical Yearbook of the Socialist Republic of Romania for 1968]* (Bucharest: Direcția Centrală de Statistică, 1969), 67.

¹¹⁶ C.C. al P.C.R. Secția Economică. 77/1959: "Studiu privind Dezvoltarea Industriei Alimentare in cursul Planului de Șase Ani (1960-1965) și in Perspectivă până în Anul 1975 [Study concerning the Development of the Food Industry during the Six-Year Plan (1960-1965) and Prospectively up to 1975]," 12, 107-108.

¹¹⁷ First and second rates of growth if industries characterized by very low levels of production at the base year are excluded.

¹¹⁸ Data on bread production was taken from C.C. al P.C.R. Secția Economică. 14/1977: "Evoluția producției de pâine și specialități de panificație precum și ponderea principalelor sortimente [Developments in the Production of Bread and Baking Specialties and the Share in Production of the Main Bread Types]," 31 and on urban and rural population from *Anuarul Statistic al Republicii Socialiste România pe 1971 [Statistical Yearbook of the Socialist Republic of Romania for 1971]* (Bucharest: Direcția Centrală de Statistică, 1972), 65.

urban population growth.¹¹⁹ The levels recovered during the next year as total production jumped by 150000 tons¹²⁰ and finally settled around 51 kg (not including bread produced through baking services) by 1980, a level five times higher than in 1950.¹²¹ Regionally, the uneven geographic distribution of this growth changed hierarchies and exacerbated existing differences between provinces. In 1959, Oltenia and Muntenia had an average production per rural resident of 17.6 kg, slightly higher than the 9.25 kg for Moldova and Bucovina and the 5.4 kg for Transylvania, Banat and Crișana.¹²² Dobrogea was well ahead of the other provinces with an average production of 35.9 kg and owed its advanced position to its status as the first province where collectivization was completed and to preferential access to investments due to the government's intention of using the region as a showcase for the benefits of collectivization. By 1976, Muntenia and Oltenia enjoyed the highest per rural resident consumption at 49 kg followed by the cluster regions Transylvania, Banat and Crișana with an average of 27.56 kg. Moldova and Bucovina witnessed more modest growth to 14 kg and Dobrogea a marked decline to 10 kg.¹²³

¹¹⁹ For developments in bread production during 1970-1976 see C.C. al P.C.R. Secția Economică. 14/1977, 31. The data for urban and rural population refers to the 5th of January 1977 and was taken from *Anuarul Statistic al Republicii Socialiste România pe 1981* (Bucharest: Direcția Centrală de Statistică, 1982), 45.

¹²⁰ C.C. al P.C.R. Secția Economică. 14/1977, 31.

¹²¹ On deliveries of bread to the population see *Anuarul Statistic al Republicii Socialiste România pe 1981 [Statistical Yearbook of the Socialist Republic of Romania for 1981]* (Bucharest: Direcția Centrală de Statistică, 1982). 513. On urban and rural population see *ibid.* 45.

¹²² Per rural resident consumption in 1959 for each province has been calculated based on production data for constituent administrative regions found in C.C. al P.C.R. Secția Economică. Files: 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104/1959. In case of regions divided by provincial borders, the practice has been to assign them to the province holding the largest part. The most important additions were made to Moldova by the transfer of raionul Măcin from Dobrogea and of the future territory of Brăila County from Muntenia. However, the impact of these transfers is not significant: an incorporation of the county of Brăila with the rural population of 1976 but with no bread quantities in 1959 Muntenia lowers average per resident production by only 0.5 kg.

¹²³ Calculated based on data on bread distribution in constituent counties from C.C. al P.C.R. Secția Economică. 196/1976, 21, 47-48. The data refer to quantities of bread distributed during the first three Quarters of the Agricultural Year 1975-1976 (October 1975-June 1976).

Within provinces, wide differences existed across regions and counties. Besides Constanța region, the regions of Stalin in Transylvania and Pitești and Ploiești in Muntenia and Oltenia had significantly higher than average per resident consumption levels of 32.6 kg, 25.8 kg and 25.7 kg respectively. All the remaining regions except Galați (19.1 kg) displayed consumption levels below the national average (see Figure 2.5 in the Appendix to this Chapter). The hierarchy at the top changed little by 1976, the successor counties of Ploiești and Pitești regions, Vâlcea, Argeș, Dâmbovița and Prahova enjoying per rural resident distribution levels during the first three Quarters of the Agricultural Year 1975-1976 (October 1975-June 1976) of 91 kg, 87 kg, 79 kg and 83 kg, second (behind) only to Gorj (104 kg) at the national level. One half of the former Stalin region, Brașov County, enjoyed a per rural resident level of 50 kg, while the other half, Sibiu County, and the western portion of Ploiești region, Buzău county, displayed levels of distribution of 34 and 37 kg respectively. Altogether, approximately one third of the counties had distribution levels above 35 kg, one third between 25 kg and 35 kg and one third below 25 kg (see Figure 2.6 in the Appendix to this Chapter). This hierarchy does not change substantially when the data on the distribution of industrially-produced bread during an entire calendar year is considered (see Figure 2.8 in the Appendix to this Chapter for distribution levels in 1978). For both time intervals, the distribution of per resident levels follow a consistent geographic pattern characterized by higher levels among predominantly Mountainous and Hilly units compared to neighboring Plain units. Official policy contributed to the development of these geographic differences through its focus on supplying villagers from mountainous areas and from regions devoted to agricultural purposes other than cereal cultivation - in general those populations that

could not be catered through the provisioning of baking services. For Muntenia and Oltenia, per rural resident distribution of bread reached in 1978 129.5 kg in the counties located on the Carpathian Mountainous and Hilly belt and 35.6 kg in the southern Plain counties. The counties of Dolj (42 kg) and Olt (37 kg) even fell behind their northern neighbors Gorj, Vâlcea and Argeş by more than 100 kg.

The close timing and geographic overlap between the dietary change and the rising availability of industrially-produced bread suggests their interconnectedness. Whatever the exact relationship, by 1976 the contribution of market-acquired bread to daily consumption in the five counties under analysis was great: industrially-produced bread excluding baking services covered 84% of the observed 1979-1980 average individual consumption of 140 kg of bread per year. The contribution of industrially-produced bread to total consumption in plain areas is less clear partly because the exclusion of baking services has greater underestimating impact in this case and partly because lower distribution levels translated into lower total consumption levels. At the risk of exaggerating actual bread consumption, I adopt the 1979-1980 level of 125 kg as representative for the entire plain region and estimate a share for industrially produced bread of 28.5% of total consumption. By assuming a uniform distribution of industrially produced bread through baking services among rural residents, the share of industrially produced bread rises in the plain counties to 39% of total consumption with market-acquired bread complementing home-baked bread in household consumption. Nationally, 40% of the standard consumption level was provided by baking units of every kind, but considering the low consumption of bread in several rural regions, the share of industrially-produced bread in actual consumption is certainly greater.

Conclusions

The developments in the distribution of industrially-produced bread discussed in this Chapter had created a specific context for the rural residents' decision to consume preponderantly bread or mămăligă. Most consequentially, the distribution of industrially-produced, ready-to-consume bread using wheat flour from the state's central reserves had increased nationally to a per rural resident level of 54.4 kg and of 117 kg in the relevant region, quantities sufficient to cover 41% and 84% respectively of the total cereal consumption needs of rural residents at the level observed in the 1979-1980 Dietary Study (see Figures 2.7 and 2.9 in the Appendix to this Chapter). Against this background, the greater maneuvering space enjoyed by the rural population in terms of food supplies makes possible the formulation of more confident assessments of the effects of the rising availability of marketed bread on perceptions of standards of living than it would have been otherwise possible given the specificity of the centrally-planned system. It is the task of the next Chapter to present such a detailed interpretation of the consumers' responses to the rising availability of industrially produced bread and in this section I intend only to discuss the consumers' reactions to the changes in the output mix of bread.

If the rising availability and purchasing of industrially-produced bread is compatible with the interpretation that the development fitted broadly with consumers' preferences, the archival evidence strongly suggests that the changes in the production assortment at administratively-determined prices did not. This only partially successful attempt of disguising a price increase for a basic product affected perceptions of standards of living and had political repercussions for the regime given a system of production and distribution that automatically politicized economic performance. To counter possible mismatches, adjusting mechanisms and institutions were in place and

my analysis shows that while they did not pick up efficiently consumers' preferences, they were not as insensitive to them as previously thought - a conclusion of relevance for interpreting the impact of other significant changes in lifestyles occurring during those times. Nevertheless, a parallel, negatively-perceived development closely related to the - so far only presumed - positively-perceived rising availability of industrially produced bread significantly complicates the interpretation of the overall dietary change from a standard of living perspective by allowing the possibility that the frustration of consumers' desires for cheap, black bread may have considerably overshadowed the other developments.

Beyond its contribution to a better understanding of the context of the dietary change, my analysis of the economic performance of the Baking Industry confirms the consensus among scholars that the socialist variant of industrialization resembled in its production processes the capitalist variant with its fordist and taylorist characteristics. Specifically, the data presented in this Chapter indicates a moderate reduction in production costs that has been achieved through mechanization of production operations and through an improved organization of production processes. Despite these advancements, however, my analysis shows that it had become increasingly difficult for the Baking Industry to satisfy both consumer demand and the requirements for capital accumulation as constructive, cost-reducing strategies failed to keep up with mounting labor costs. As a result, planning authorities had to rely on more problematic strategies (higher extraction rate, sub-optimal output mix) that indirectly raised the price the consumers had to pay for the established products and which influenced the extent to

which the regime could have capitalized politically from the increased availability of industrially produced bread.

Annex to Chapter 2

The volume of accumulation generated by the Baking Sector in 1975 has been calculated using data on average cost prices, profits and turnover tax for the base year of the 1971-1975 five year plan (presumably applicable in all enterprises) or planned data regulating production for the year 1974 in the Alba County Baking Enterprise.¹ Specifically, I have used base year data in the case of black bread (1 kilogram- simple and with potato), semi-white potato bread (1 kilogram) and five baking products. For all other products, I have used the 1974 planned indicators for the Alba County Baking Enterprise either because base year data was unavailable or because the current data seemed more appropriate (the volume of profits was lower) given my inclination to secure a comfortable margin of error for my calculations (semi-white simple bread). Among the products characterized by current regional data, the task of selecting the representative amount of accumulation for white bread and baking specialties was complicated by the highly aggregated form of their presentation in national statistics. For white bread, I have chosen the volume of profits corresponding to simple white bread 750 gr. (228 lei - the lowest generated by the three types) as representative for the varieties simple white bread- 1 kilogram and 500 gr. as well. For baking products, the estimation procedure was further complicated by the large number of assortments and by the significant differences in profitability and tax revenue (accumulation ranged from 0.183 lei to 2.3 lei per kilogram). As a substitute for detailed data on production, I have used the average price for baking products to infer a reasonably reliable approximation of the share in output for two subgroups of products: franzelărie characterized by relatively low profits, turnover tax and retail prices and small baking products characterized by high profits, turnover tax and retail prices. The calculation of the average price for baking specialties itself required the introduction of an assumption concerning the amount and type of unsold quantities of bread in 1973. The assumption is needed because the archival material provides information solely on the average prices of actually sold quantities of

¹ Data available at Direcția Județeană Alba a Arhivelor Naționale. Întreprinderea de Morărit și Panificație Alba, 22/1973, un-numbered.

bread (3.34 lei) and of distributed quantities of bread and baking products (3.72 lei).² Depending on the characteristics of unsold bread, the average price for baking products is located within the interval of prices 6.825 lei -7.21 lei. The calculation behind the low-bound limit of the interval assumes that a total quantity of 34470 tons (first assumption: an equal share of baking products and bread from total production were distributed through the commercial network) of exclusively white bread (second assumption) had not been sold for various reasons (transportation and handling losses, insufficient demand etc.). The upper-bound limit describes the hypothetical situation in which 34470 tons of exclusively black bread had not been sold. The price interval is consistent with previous data on the average price of baking specialties: 7.34 lei in 1966 and 7.23 lei in the fourth trimester of 1970. A further drop in average price by 1973 is very likely considering the continuous rise in share of low- retail price varieties: in 1977, the production of franzela Dâmbovița (profits- 300 lei, retail price- 4.5 lei) reached 22% of the planned production of baking specialties. In order to secure a wide enough margin of error for my estimation of accumulation per kilogram of baking specialties, I have opted for the lower average price in spite of its low likelihood. Compared to this price, the 1974 planned average price of 7.314 lei per kg of baking products is significantly higher as planned production of low- retail price varieties in the Alba County Baking Enterprise was very limited (less than 3%). If this planned average price and output structure of baking products is considered representative for the high- accumulation and retail price subgroup, to an average price of 6.825 lei corresponds an output composition of 20% low-retail price (4.8 lei) varieties and 80% high-retail price (7.314 lei) varieties. However, the average price of 7.314 lei per kg of baking products may underestimate the real price as a number of higher-priced varieties listed in the 1972 catalogue of products and prices were not included in the production plan of the Alba County Baking Enterprise. As a precaution against such a possibility and in due consideration of the planned production of low-retail price varieties for 1977 (referred above) I have decided to use a share of 35% for low-retail varieties and 65% for high-retail varieties.

² C.C. al P.C.R. Secția Economică. 19/1974, 16-19.

In view of all these qualifications, the corresponding volume of accumulation per kilogram is 0.806 lei for baking products, 0.203 lei for bread and 0.262 lei altogether. These values most likely underestimate actual accumulation levels. Besides the reasons presented above, the indicators for the Alba County Baking Enterprise very probably underestimate actual performance at the national level. Using information on types of ovens as a proxy for mechanization of production and assuming a cost-reduction effect associated with it (very likely considering the analysis of production factors presented above), the Alba County Baking Enterprise produced under relatively less favorable technological conditions and consequently may have displayed higher production costs and correspondingly lower volumes of accumulation.

CHAPTER 3: RISING INCOMES, DEMAND FOR ANIMAL PRODUCTS AND APPRECIATION OF CONVENIENCE FOODS: CONSUMER - CENTERED DETERMINANTS OF THE DIETARY CHANGE

Introduction

This chapter completes the analysis of producer-consumer interactions on the baking products market by considering the socio-economic factors that motivated rural residents to accommodate the growing distribution of industrially-produced bread in rural areas and, more generally, to consume bread rather than mămăligă. The chapter opens with an evaluation of the rural residents' access to sufficient quantities of maize to support a diet centered on mămăligă. Given insufficient private production of maize and, therefore, a dependence on a state-sponsored distribution system that adjusted imperfectly to consumer demand, the clarification of the issue of sufficient availability of maize is crucial for understanding the degree of choice involved in the dietary change from mămăligă to bread. In the second subsection, I develop the argument that the dietary change coincided with a reversal in favor of bread of the relative financial advantages of consuming bread or mămăligă. Throughout the first half of the 20th century, consumption of bread, whether home baked or market acquired, entailed a considerably higher financial effort from the part of rural households compared to the consumption of mămăligă. However, under the new conditions produced by collectivization and industrialization, I argue that consumption of market-acquired bread became financially more advantageous than consumption of mămăligă as it allowed rural households to commercialize maize supplies at lucrative prices or to convert them to highly valued animal products. In subsection 3, I discuss in more detail the connection between consumption of bread and availability of animal products and present the arguments for

conceptualizing bread consumption as an instance of forced substitution given a centrally planned economy. In particular, I argue that a substantial rise in the disposable income of rural residents together with the planning authorities' decision to absorb the additional income through the distribution of cereal-based products under the form of bread persuaded rural residents to accept industrially produced bread as a less-than-perfect solution to the shortage of grain-based fodder. In the opposite direction and in anticipation of the discussion of the social and cultural determinants of the dietary change from Chapter 4, the fourth subsection underlines the insufficiency of an economic explanation of the dietary change. Specifically, the rising consumption throughout the 1970s of bread prepared through baking services provided by Agricultural Cooperatives at higher costs, financially and in terms of fodder availability, compared to consumption of *mămăligă* shows that rural residents valued consumption of industrially-prepared bread beyond its contribution to the household budget or to the consumption of animal products.

The arguments for a socio-economic explanation of the dietary change are developed through a case-study analysis of Argeş County, a representative unit in terms of economic development, level of industrialization, geographic conditions and level of distribution of cereal products per rural resident for the region of five counties studied in my dissertation. The case-study analysis is informed by data from the Annual Reports to the County Statistical Office of a sample of more or less 30 Agricultural Cooperatives for each year between 1963 and 1975 randomly selected from the list of available archival records of the Argeş Departmental Archives. The sample of roughly 30 Agricultural Cooperatives assures coverage of 20% of the entire rural population and of at least 25%

of the entire rural population living in localities that had Agricultural Cooperatives. The Annual Reports contain detailed information on a number of indicators required by my analysis and their availability for a significant number of Agricultural Cooperatives determined the selection of Argeş County for the case-study analysis. The usual pattern of analysis has been to progress from the case-study to the macro-level, the second subsection being exceptional in this sense in that the analysis of the financial costs associated with the consumption of mămăligă and bread progresses from the national to the regional and finally to the Argeş County level.

3.1 Availability of Maize as Food: Private plot production, commercial supplies and in-kind remuneration for work performed in Agricultural Cooperatives

For estimating the number of rural residents that had access to sufficient quantities of maize to support a diet centered on mămăligă, I have used a probabilistic model that relates consumption needs to opportunities to access maize supplies given the individual's residence in a certain locality and his membership in a household having certain consumption needs and labor resources. The model is proposed as a more valid alternative to the simple use of local per capita or per consumption unit averages to assess maize availability relative to consumption needs. In particular, the model is more sensitive to the considerable differences between households in terms of consumption needs and access to maize supplies and, therefore, it can identify better households that were not in position to maintain their established diets in localities where the majority of households were or vice-versa without having to assume a hypothetical redistribution of supplies from surplus to deficient households for a product with multiple usages.

The rural household has been selected as the unit of analysis: quantities of maize secured by one member were considered to have been available to all members within the household and no member was considered to have had access to sufficient quantities of maize if the consumption needs of all members were not satisfied in their entirety. The first assumption is well grounded in the internal dynamics of the rural household but the second restriction may underestimate the number of individuals that had access to sufficient quantities of maize by ignoring preferential distribution of maize supplies among household members. For example, a number of younger respondents specified that the older generations (parents and grandparents) continued to consume *mămăligă* more frequently than they had, as children and young adults benefited first and foremost from the rising availability of bread. Nevertheless, I have retained the restriction in unmodified form in accordance with a principle which has prevailed throughout the analysis of preferring to underestimate rather than to overestimate maize availability among rural residents.

In order to reflect adequately existing differences between households in terms of consumption needs and labor resources, the analysis has been run on six categories of households differentiated by their total consumption needs.¹ To completely control against the possibility of underestimating the consumption needs of households within the categories, for each category except the last, the household with the highest consumption need was considered representative for the consumption needs of all

¹ The first category included households having consumption needs under 201 kg of maize flour, the second category households having consumption needs between 202 kg and 328 kg, the third category households having consumption needs between 329 kg and 391 kg, the fourth category households having consumption needs between 392 kg and 455 kg, the fifth category households having consumption needs between 456 kg and 518 kg and the sixth category households having consumption needs of 634 kg and above.

households. For the last category, the presence of a few households with exceptionally high consumption needs rendered their use as indicators inappropriate and therefore a more representative value equivalent to the consumption needs of five male adults has been selected. Next, I have assigned to each category a weight that was used in aggregating the results from the category to the village level and which equaled the share in the village population of all household members from the respective category. Based on the analysis of the consumption needs of all households from Vața and Dobrești villages,² 31.4% of all residents lived in households that required 634 kg of maize flour to support a diet centered on mămăligă, 14.5% in households requiring 513 kg, 9.3% in households requiring 450 kg, 20% in households requiring 386 kg, 21% in households requiring 322 kg and 4% in households requiring 127 kg. Finally, the median number of members of working age per household was considered representative for all households within the respective category and this value was used to assess each category's opportunities to access maize supplies from Cooperative and Private Plot production. Referring again to the data on the age and gender distribution of household members from Vața and Dobrești villages, households having consumption needs of 513 kg and above included 3 members of working age, households having consumption needs between 322 kg and 450 kg included 2 members of working age and households having the lowest consumption needs included only one member of working age. The median value has been found to be representative for the labor resources available to households comprising 49% of residents from Vața and Dobrești, to overestimate the labor resources

² Direcția Județeană Argeș a Arhivelor Naționale. C.A.P. Vața, 4/1964 and C.A.P. Dobrești, 4/1964.

available to households comprising 22% of residents and to underestimate the labor resources available to households comprising 29% of residents.

The model has been used to analyze the distribution among rural households of maize supplies from three major sources: in-kind payments for work performed in the Agricultural Cooperatives, Private Plot production and the State-Controlled Commercial network. The adjustments made to the data on maize supplies from these sources in order to arrive at estimates of maize availability for each category of households are presented in detail in the following subsections of the chapter. A fourth source of maize supplies - the peasant market - has been excluded because not enough data has been available on quantities of maize sold and their distribution among buyers. However, the peasant market performed a redistributive function for maize supplies, with rural households that had access to sufficient or insufficient quantities of maize to maintain a diet centered on mămăligă selling part or all of their supplies to other households that already had sufficient or insufficient quantities of maize. Since my purpose is to estimate the number of rural households that had access to sufficient quantities of maize to maintain their usual diets irrespective of how they had ultimately used their supplies (whether as food, livestock feed or commodity on the peasant markets), the exclusion of transactions on the peasant market can only underestimate the number of residents that ultimately had access to sufficient quantities of maize.

3.1.1. Availability of Maize from In-Kind Payments for Work Performed in Agricultural Cooperatives

In-kind payments for work performed in Agricultural Cooperatives remained an important source of maize supplies for the rural population throughout the period, both nationally and in Argeş County. Each cooperative member was assigned a certain number

of labor-days or work-norms for their work performed in the Cooperative during the current year with each labor-unit entitling the worker to a fixed quantity of wheat, maize, potatoes, legumes and other agricultural produce. For wheat and maize, the amounts paid for one labor-unit were determined by dividing the quantities left from the Cooperative's annual production - after the Cooperative had fulfilled its deliveries to the State fund and has met its obligations towards suppliers - to the total number of labor units performed.³

A comparative and longitudinal analysis of the data from the Annual Reports on the distribution of cooperative members by number of labor-units performed and on the value in maize of each labor-unit shows significant variation in the quantity of maize received by cooperative members within the same Cooperative, by Cooperative members from different Cooperatives and by members of the same Cooperative during successive years. Differences in the number of labor-units performed by Cooperative members were the source of variation in payments within the Agricultural Cooperative. In a typical Agricultural Cooperative, the number of labor units performed ranged from under 20 for a considerable percentage of workers to over 300 for work- team leaders, accountants and other administrative personnel and to over 400 for the President and Vice-President of the Cooperative. A more inclusive comparative analysis of the number of labor-units performed by the bottom and top 15% of Cooperative workers from 30 Agricultural Cooperatives in a typical year (1972)⁴ shows a considerable median difference of 100

³ For a review of the collectivization process and of the workings of Agricultural Cooperatives in Romania, see Constantin Iordachi and Dorin Dobrinu (Ed.), *Transforming Peasants, Property and Power: The Collectivization of Agriculture in Romania, 1949-1962* (Budapest: Central European University Press, 2009) and Karl-Eugene Wadekin, *Agrarian Policies in Communist Europe: A Critical Introduction* (Dordrecht: M. Nijhoff, 1982).

⁴ The various parameters of the economic performances of a sample of 30 Agricultural Cooperatives from Argeş County in the year 1972 discussed in this section have been developed from data presented in the Annual Reports available at Direcția Județeană Argeş a Arhivelor Naționale. C.A.P. Căteasca, 1/1972,

work-days - more than the average number of work-days performed by all members in that year. Furthermore, a distinct geographic pattern can be observed with Cooperatives located in plain regions displaying a more pronounced difference (median difference for 13 Cooperatives of 121 work-norms) compared to hilly and mountainous regions (median difference for 17 Cooperatives of 61 work-norms).

Variations in average in-kind payments between members of different Cooperatives resulted from the combined effects of different levels of (under) employment, the Cooperative's economic performance during a given year and the proportion of remuneration that was paid under the form of maize within each Cooperative. In 1972, for instance, 30 Cooperatives paid members who have performed some kind of work between an average of 59 kg (Boțești Agricultural Cooperative) and 717 kg (Ciupa Agricultural Cooperative) of maize.⁵ More precisely, one third of Agricultural Cooperatives paid their members, on average, less than 211 kg, one third between 234 kg and 375 kg, and one third over 378. Once again, a geographical pattern can be discerned with Agricultural Cooperatives located in plain regions having paid cooperative members an average of 381 kg compared to an average of 245 kg paid by Agricultural Cooperatives from hilly and mountainous regions.

C.A.P. Ciupa, 1/1972, C.A.P. Bârla, 1/1972, C.A.P. Boțești, 9/1972, C.A.P. Drăganu, 1/1972, C.A.P. Izvoru, 1/1972, C.A.P. Mareș, 1/1972, C.A.P. Moșoaia, 1/1972, C.A.P. Humele, 1/1972, C.A.P. Săpata de Sus, 2/1972, C.A.P. Dobrești, 5/1972, C.A.P. Ungheni, 2/1972, C.A.P. Vâlsănești, 1/1972, C.A.P. Buzoești, 2/1972, C.A.P. Urlueni, 1/1972, C.A.P. Poienari (de Muscel), 3/1972, C.A.P. Vața, 1/1972, C.A.P. Bălilești, (no number)/1972, C.A.P. Vlădești, 2/1972, C.A.P. Ciofrângenii, 2/1972, C.A.P. Mălureni, 2/1972, C.A.P. Mihăești, 1/1972, C.A.P. Negrași, 2/1972, C.A.P. Lerești, 2/1972, C.A.P. Stolnici, 1/1972, C.A.P. Hârtiești, 2/1972, C.A.P. Popești, 1/1972, C.A.P. Țuțulești, 1/1972, C.A.P. Zărnești, 1/1972, C.A.P. Priboeni, 2/1972. Since the Annual Reports had a standard form, the relevant information (in this case, the number of work-norms performed by groups of Cooperative members) can be found in all cases at the same page number (Page 4 in this case).

⁵ Direcția Județeană Argeș a Arhivelor Naționale, C.A.P. Boțești, 9/1972 and C.A.P. Ciupa, 1/1972. The average value of maize payments to cooperative members has been calculated by multiplying the quantity of maize paid for one work-norm to the average number of work-norms performed.

The presence of multiple layers of variation in in-kind payments from work performed in the Agricultural Cooperatives requires a careful design of the probabilistic model in order to arrive at representative estimates. In particular, the considerable variation in incomes received by workers within the same Cooperative renders the use of means and medians inappropriate as these indicators level out the considerable differences in revenue that have been observed between the bottom and upper groups of Cooperative members. Therefore, I have considered necessary to use the data on the breakdown of cooperative members by number of labor-units at the most disaggregated level available in the Annual Reports in spite of the exponential growth in the number of operations needed to derive the relevant estimates. The selected level of 8 or 9 categories⁶ likewise fails to pick up all relevant information since no indicators such as means or medians are available to describe differences in income between members from the same category. To adjust for this shortcoming in the data, I have assigned to members from each category with the exception of the first category (Under 20 or Under 40) a number of labor-units (and by extension, quantities of maize) equal to the lower-bound limit for that category. With regard to the first category, because I have considered inappropriate to assign members no labor-units and thus have them moved to the None category, I have decided to use the mid-point of the category as an approximate indicator of members' work performance. Overall, the adjustments made to the data from the Annual Reports underestimate the actual payments received by part of the members of the second

⁶ For 1972 and 1973, the categories for work-norms performed are None, Under 20, Between 21 and 40, Between 41 and 80, Between 81 and 120, Between 121 and 160, Between 161 and 200, between 201 and 300, Over 300. For 1974 and 1975, the second and third categories have been merged into a single category, Under 40.

category and by virtually all of the members from the third up to the eighth/ninth categories.

The effects on the validity of my results of the decision to combine the data on gender work performances into a single category are more difficult to estimate with precision. Throughout the period, men performed, on average, more labor-units than women but considerably fewer men were active within the Agricultural Cooperative. For instance, in 1972, in 30 Agricultural Cooperatives men performed an average of 108 work-norms, significantly more than the 68 work-norms performed by women (t-test: 3.5, $p < 0.01$). In the opposite direction, significantly fewer men of working age were active in the Agricultural Cooperative (36% of men compared to 59% of women, t-test: 4.46, $p < 0.01$). The incorporation of the two gender categories into the model would have reflected adequately existing differences in work performance and labor participation rates but would have at least doubled the number of operations needed to derive the estimates on maize availability for the most demanding categories (households having 3 active members) and would have significantly complicated the estimation procedure for the other categories. Accordingly, I have decided to assign to all Cooperative members the same probability of having belonged to one of the 8 or 9 categories irrespective of their gender. The averaging of data on work performance and labor participation between members of the same Cooperative generates biased estimates by disregarding the variability in income between households with different gender configurations for the active members. As a rule of thumb, for Agricultural Cooperatives in which only a minority of households had access to sufficient quantities of maize according to the averaged indicators, the leveling out of differences between households having different

gender compositions results in an underestimation of the actual number of such households. Conversely, for Agricultural Cooperatives in which the majority of households have been identified by the model as having access to sufficient quantities of maize, the observed figures overestimate the actual number of such households.

The presence of marked differences in in-kind payments between Agricultural Cooperatives is only partially offset by the relatively large number of Cooperatives (30) studied for each year and, therefore, the estimates on maize availability are sensitive to sampling biases. Referring again to the data on differences in payments from the sample of 30 Agricultural Cooperatives in 1972, the 95% Confidence Interval associated with the sample data ranges from 247 kg to 361 kg, a sizable difference between the two limits of almost 50%. To minimize distortions introduced by sampling biases, the statistical analysis will be run on geographic categories (plain versus mountainous and hilly) and a correction coefficient will be applied to the results from the sample in order to make them more representative for the entire County. The correction coefficient is intended to reduce sampling biases by adjusting the weight assigned to each geographic category to the proportion of the rural population residing in each geographic unit. In addition, the analysis by geographic categories presents the advantage of allowing an easy combination of the data on maize availability from work performed in the Agricultural Cooperatives and from the geographically-dependent Commercial distribution.

3.1.2. Availability of Maize from Private Plot and Private Landholding Production

Private Plot Production of maize was another major source of maize availability for rural residents with three-year average production increasing nationally from 789300

tons in 1963-1965 to 1368567 tons in 1973-1975⁷ and in Argeş County from 41613 tons in 1969 to 54616 tons in 1975.⁸ Apart from its contribution to maize availability, private plot production provides a sensitive measure of the rural residents' priorities and relative demand for agricultural produce as no restrictions applied concerning what crops could be cultivated on the private plot. In this sense, the considerable and constant share of scarce arable land that was allocated to maize production shows that maize was regarded sufficiently valuable to justify its cultivation rather than that of a number of other crops.

In order to derive estimates on maize availability from private plot production for the appropriate unit of analysis (rural households by locality), several issues have to be addressed such as the large local deviations from national or county means in terms of maize production per unit of land and the considerable differences in the size of private plots assigned to Cooperative members from the same and different localities. The village average for arable land per household from private plot holdings has been used to reflect the uneven access to suitable arable land of Cooperative members from various localities. The village average was calculated by dividing the total area of arable land from private plots to the number of households which were part of the Agricultural Cooperative for each village and year.⁹ An analysis by size of private plot holdings of households from 17 villages at various points in time¹⁰ suggests that the village average approximates well the

⁷ Calculated using data on maize production by Cooperative Members' Households from *Anuarele Statistice ale Republicii Socialiste România pe 1968 și 1976 [Statistical Yearbooks of the Socialist Republic of Romania for 1968 and 1976]* (Bucharest: Direcția Centrală de Statistică), 282, 197.

⁸ Ibid and C.C. al P.C.R. Secția Economică. 4/1969, 190.

⁹ The relevant data is available in the Annual Reports of the Agricultural Cooperatives in the sections on Land Utilization and Number of Families/Labor Resources (pages 2 and 3).

¹⁰ The villages are Dârmănești, Valea Nandri, Piscani, Negreni (C.A.P. Dârmănești), Negrași- Bârlogu (C.A.P. Bârlogu, 3/1962), Brabeți, Malu, Zuvelcați, Afrimești, Urlueni (C.A.P. Urlueni, 4/1969), Lereni, Hârsești (C.A.P. Hârsești, 16/1966), Ștefan cel Mare (1/1965), Humele, Găujani (C.A.P. Humele, 14/1968), Dobrești and Furești (C.A.P. Dobrești, 4/1964).

median size (average estimation error within 10% of the median) and that the village average size of arable land within plot holdings approximates acceptably well the median size for the respective village (average estimation error within 21% of the median). More specifically, the village average size of arable land from plot holdings approximates well the median size for villages located in the plain (average estimation error of less than 7% of the median) but generally underestimates it while the village average approximates poorly the median size for villages located in hilly and mountainous regions (average estimation error of almost 50% of the median) by overestimating it. Nonetheless, I have considered appropriate to use village averages as representative of median arable land per household for all villages since the overestimation effect on maize availability for certain localities was negligible given the small absolute difference between the estimated and actual median and the low yield characteristic of mountainous and hilly regions.

The differences in access to arable land were paralleled by differences in maize yields per unit of land. Indicative of geographic differences in land productivity within Argeş County, a comparative analysis for 1969 and 1975 shows that counties located in the Romanian Plain had higher per hectare yields of maize than counties having extensive mountainous and hilly regions, both for Cooperatives (2758 kg to 1995 kg per hectare for 1969 and 3784 kg to 2350 kg per hectare for 1975) and Private Plots (2600 kg to 1752 kg per hectare in 1969 and 3932 kg to 2070 kg per hectare in 1975).¹¹ In order to approximate local production performances, I have used the average yield from the Agricultural Cooperatives as an indicator of production conditions on the Private Plots of

¹¹ *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică, 1976), 210, 224 and C.C. al P.C.R. Secția Economică. 4/1969, 189- 190.

Cooperative members. This procedure is not unjustified: climatic conditions differed insignificantly in the same locality, the same major mechanical works were performed on Cooperative and Private Plot arable lands, the Cooperative Members managed - according to oral testimonies - to legally and illegally appropriate chemical fertilizers for use on their own lands and the higher application of capital goods on Cooperative lands was counterbalanced to a certain degree by higher application of high-quality labor on Private Plot lands. In support of these assumptions, the data on maize productivity by County (a high level of aggregation) in 1969 and 1975 shows that average production of maize per hectare was very similar on Private Plot and Cooperative lands in the geographically homogenous plain counties. For counties including important hilly and mountainous regions, the average production of maize per hectare was significantly higher for Agricultural Cooperatives compared to Private Plots for Buzău, Mehedinți and Prahova counties and similar for Vâlcea, Dâmbovița and Gorj counties. In Argeș County, Private Plot production of maize per hectare was considerably higher than in the Agricultural Cooperatives (1896 kg compared to 1550 kg in 1969 and 2431 kg compared to 1616 kg in 1975). However, all the counties having higher production averages for Agricultural Cooperatives had comparatively larger plain regions within their territories and, therefore, the higher production average more likely reflects the larger share of high-quality land among Agricultural Cooperatives rather than any actual differences in production performances between Cooperative and Private Plot lands within the same geographic unit. In my model, I have used the average production per hectare from the Agricultural Cooperatives to represent local production performances on Private Plot lands in all cases except when the Cooperative average exceeded 2500 kg per hectare. In

these cases, the production performance of 2500 kg of maize per hectare was used irrespective of the actual performance of the Agricultural Cooperatives to discriminate against high performances that were difficult to achieve by high-quality labor inputs without the application of considerable capital resources.

The distribution of maize production from Private Plots among the relevant categories of households within the same locality is the final aspect that requires clarification. The application of the provisions from the Statute of the Agricultural Cooperatives concerning the distribution of land allotments equivalent to up to 0.15 Ha of arable land only to Cooperative members who have performed a required volume of work during the previous year¹² would have resulted in plot holdings of varying sizes for households having their active members in different employments. The archival evidence suggests, however, that the Statute was applied inconsistently in this matter during the relevant time period. For instance, a report on Measures to Improve Leadership and Planning in Agriculture from 1965 showed that households where none of the members had performed any kind of work in the Cooperative owned an average of 0.27 Ha of agricultural land, close to the 0.29 Ha owned by households where part or all of their active members had worked in the Agricultural Cooperative.¹³ After 1965, the stricter, although not absolute, application of the Statute produced greater differentiation between households having active members in different employments. In Merișani village in 1973 for example, Cooperative members that had participated to work in the Cooperative owned Private Plots of an average size of 0.4 Ha, of which 0.16 Ha was arable land, compared to Private Plots of an average size of 0.12 Ha, of which 0.062 Ha was arable

¹² C.C. al P.C.R. Secția Economică. 8/1977, 8-9.

¹³ C.C. al P.C.R. Secția Economică. 11/1965, 31.

land, owned by Cooperative Members who had not performed any work in the Cooperative.¹⁴ Given the available evidence and on the assumption that households having two or more active members were in a better position to secure a full-size Private Plot, I have considered the village average to be representative of Plot holdings of households from the categories having consumption needs of 392 kg and above and half the village average to be representative for the other categories. An analysis of the distributions of Cooperative households by size of arable holdings for 9 villages for which the relevant data was available shows that the procedure produces, on average, lower estimates for 85% of households from plain villages and that it reduces to insignificance the estimation error for households from other geographic units.

The production of maize on Private Landholdings added to the total supply of maize flour in the agricultural year 1975-1976 328600 tons nationally¹⁵ and 16970 tons (estimated figure) in Argeş County,¹⁶ the equivalent of 27.24 kg and 43.5 kg of maize flour per rural resident respectively. The greatest part of the production of maize on Private Landholdings was available to rural residents from Hilly and Mountainous Counties and, within these Counties, to rural residents from high-altitude compact regions where the collectivization of agriculture had not been implemented because of economic reasons and the alternative type of socialist organization of agricultural production (Întovărăşiri) has been largely dismantled after 1966. As a result, a substantial part of rural families from these regions had continued to own individually relatively large plots of land. Less frequently, rural residents from collectivized regions had

¹⁴ Direcția Județeană Argeş a Arhivelor Naționale. C.A.P. Merișani. 1/1973.

¹⁵ *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică, 1977), 197.

¹⁶ Estimated based on data from *Anuarul Statistic al Republicii Socialiste România pe 1976*, 224.

remained outside the Agricultural Cooperatives and had retained individual ownership over plots of land. For each geographic region, however, precise information has not been available to permit an evaluation of the distribution of maize supplies between rural families. Under these conditions, rather than assuming that rural residents from each geographic region enjoyed equal access to maize supplies produced on private landholdings, I have considered more appropriate to estimate the number of rural families who owned private land from the data on the number of active rural residents engaged solely in agricultural activities on private land and to assign to such families the entire quantity of maize flour. The estimation procedure has been performed on the conservative assumption that families who owned private land included at least two active members (two active women) engaged in private agriculture and part of them three such members (two active women and an active man) even though the vast majority of rural families included three or fewer active members engaged in any occupation and the majority two or fewer active members. According to this method of calculation, in Argeş County resided in 1977 14580 families who owned private land, of which 5980 families had two active members engaged in private agriculture and 8600 families three such active members which would have brought them 900 kg and 1350 kg of maize flour respectively if maize supplies were divided more or less equally between the 37760 rural residents active in private agriculture.¹⁷ This distribution of maize supplies produced on private landholdings has been preferred to an alternative scenario in which rural residents from Hilly and Mountainous regions received quantities of maize flour sufficient to cover

¹⁷ The number of active rural residents engaged solely in agriculture on private landholdings is based on data from *Recensământul Populației și al Locuințelor din 5 Ianuarie 1977. Vol. II: Populație - Structura Social-Economică [The Population and Housing Census of January 5th, 1977. Vol. II: Population - Socio-Economic Structure]* (Bucharest: Direcția Centrală de Statistică, 1980), 385.

50% of their total cereal consumption needs (62 kg) not just because the selected distribution is believed to be relatively more accurate historically but also because it is less favorable to my overall argument that rural residents in general had access to sufficient quantities of maize to consume mămăligă at meals at which they had nonetheless consumed bread. Overall, it is most probable that rural residents active in private agriculture or, alternatively, that private landholdings, were distributed more evenly among rural families and, therefore, that a greater number of families than the 14580 families identified in my analysis have had access to sufficient quantities of maize from private production alone.

3.1.3. Centrally-Planned Distribution of Maize/Maize Flour through the Commercial Network

The State-controlled Commercial Network had been the final major source of maize supplies for rural residents. According to data from Statistical Yearbooks and archival records, annual quantities of maize used for the production of maize flour that was distributed through the commercial network increased sharply from 267100 tons in 1963 to 514300 tons in 1965¹⁸, oscillated thereafter between 450000 tons in 1970¹⁹ and 567700 tons in 1975²⁰ and soared again to 678800 tons in 1978 and finally to 731940 in 1979.²¹ The growth rate for maize flour was slightly lower than the growth rate of the corresponding quantity of maize used for its production because of the emphasis on the production of higher-grade flours with low extraction rates from grain. For example, a 24% increase in the quantity of maize processed between 1970 and 1975 translated into a

¹⁸ *Anuarul Statistic al Republicii Socialiste România pe 1968 [Statistical Yearbook of the Socialist Republic of Romania for 1968]* (Bucharest: Direcția Centrală de Statistică, 1969), 443.

¹⁹ C.C. al P.C.R. Secția Economică. 133/1976, 112.

²⁰ C.C. al P.C.R. Secția Economică. 78/1976, 6.

²¹ C.C. al P.C.R. Secția Economică. 18/1979, 43-44.

21% increase in the quantity of maize flour because of a rise in share from 63% to 71% of total production of extra (11- 20% extraction rate) and superior (64- 80% extraction rate) types of maize flour at the expense of the ‘common’ type (90- 91%).²² Nevertheless, distribution of maize flour reached 20.8 kg per capita by 1975 and continued to increase until 1980 despite the considerable planned decrease in the total extraction rate.

The more detailed data on the distribution of maize by counties shows that certain regions were privileged in the allocation of supplies. Restricting the analysis to the provinces (Oltenia, Muntenia, Moldova and Bucovina) that have historically displayed high levels of *mămăligă* consumption, the counties located on the Carpathians received in 1978 an average of 46.1 kg of maize flour per capita compared to an average of 9.4 kg for the counties located in the plains.²³ After subtracting the estimated consumption by urban residents of commercially-sold maize flour, 54.8 kg of maize flour remained available, on average, to each rural resident from upland counties but only 1.16 kg were available to each rural resident from lowland counties. Restricting further the analysis to the provinces of Muntenia and Oltenia, 66.05 kg of maize flour remained available to each rural resident from hilly and mountainous counties compared to less than 1 kilogram that remained available to each rural resident from the counties located in the Romanian Plain. Of particular relevance, five of the six counties that enjoyed the highest distribution of maize flour per rural resident were also the top five counties in terms of distribution of industrially-produced bread (see Figure 2.8). In fact, for counties from

²² C.C. al P.C.R. Secția Economică. 133/1976, 112.

²³ The distribution of 59.7 kg and 12.16 kg of maize per capita respectively have been converted to maize flour at the planned total extraction rate for 1978 of 77.16%. The per capita distribution of maize was calculated using data on the distribution of maize quantities by County from C.C. al P.C.R. Secția Economică. 18/1979, 43 and on the urban and rural population of each county from *Recensământul Populației și al Locuințelor din 5 Ianuarie 1977. Vol. II, 1.*

Oltenia, Muntenia, Moldova and Bucovina, availability of maize flour per rural resident was correlated highly (Pearson's $r=0.8$) only with availability of industrially- produced bread per rural resident out of 12 common foodstuffs that were distributed through the socialist commercial network. A possible explanation for the high correlation may be that in the official policy, the distribution of maize flour and of industrially produced bread were intended to perform the same function of supplying rural residents who were not in position to secure adequate quantities of cereal products from Cooperative and Private Plot sources.

According to the available data, Argeş County had been privileged in the distribution of maize flour with deliveries per capita of 53.4 kg for the three Quarters of the Agricultural Year 1975-1976²⁴ and 70 kg for 1978²⁵ which resulted in quantities available to each rural resident of 73.7 kg and 96.5 kg respectively. Estimating the annual consumption needs of a rural resident at approximately 112 kg of maize flour (generous estimate) by taking into consideration the age structure of the population, the quantities of maize flour distributed through the socialist commercial network were high enough to cover 86% of the total consumption needs. However, the distribution of maize flour among rural residents was certainly less than perfect given a product that could be easily stored and which had multiple usages including a very remunerative use as animal feed (See sections 2 and 3 of this Chapter). Most likely, the geographic differences between regions in terms of access to maize flour described above were present in Argeş County as well and, therefore, I have considered that the larger part of maize quantities was distributed to localities from mountainous and hilly regions. More specifically, I have

²⁴ C.C. al P.C.R. Secția Economică, 195/1976, 51- 52.

²⁵ C.C. al P.C.R. Secția Economică. 18/1979, 43.

assigned 95% (35747 tons) of quantities of maize flour to rural residents from mountainous and hilly regions resulting in a per rural resident level of 152.5 kg and 5% (1881 tons) to rural residents from plain regions resulting in a per rural resident level of 17.1 kg.

For differences between localities within the same geographic region and for differences between households within the same locality, not enough information has been available to allow for the formulation of well-grounded estimations. In the absence of adequate data and in keeping with the principle of underestimating rather than of overestimating actual availability of maize, I have proposed a distribution pattern in which a number of households managed to divide between them the entire quantity of maize distributed through the commercial network by securing sufficient quantities to support a diet centered on mămăligă and to raise and fatten a pig for slaughter. According to this distribution pattern, 41800 households comprising 135800 members²⁶ had each access to approximately 900 kg of maize²⁷ while the remaining 78200 households comprising 254046 did not benefit at all from the distribution of maize through the commercial network. This distribution pattern is certainly extreme with half of the rural households (49%) from hilly and mountainous regions managing to appropriate a quantity almost two times larger than the per rural household average at the same time as the other half did not manage to secure any quantities of a product which, although easily

²⁶ Calculated by multiplying the number of households to 3.25, the average number of members per household based on data from Vața, Dobrești and Humele villages.

²⁷ The average consumption needs of a rural household were estimated at 380 kg of maize flour given an adult consumption level of 127 kg and an average of three equivalent adult units per household according to the data on the age structure, gender and number of members for all households from Vața and Dobrești villages. The feed requirements for raising and fattening a pig are identical to those normally used in the Agricultural Cooperatives: 120 kg for raising the piglet and 400 kg for fattening (C.C. al P.C.R. Secția Economică. 12/1964, 3). The quantities of maize used as feed are overestimated since rural residents relied less heavily on maize considering their access to a broader spectrum of feed sources.

storable, was nonetheless distributed continuously throughout the year. In the plain regions, 5.5% of households managed to appropriate the entire quantity of maize flour according to the distribution pattern.

3.1.4. Estimates of Maize Availability

The proportions of rural residents whom the model has identified to have had access to sufficient quantities of maize from Private Plot production and In-Kind Payments by Agricultural Cooperatives in 1972 (n=30), 1973 (n=25),²⁸ 1974 (n=25)²⁹ and 1975 (n=20)³⁰ are summarized in Figure 3.1. The graph illustrates the considerable annual variations in opportunities to access maize supplies from these two sources and an inspection of the data at the level of locality reveals considerable differences between villages as well. For example, villages ranged from having fewer than 5% to 90% of their residents capable of securing sufficient quantities of maize in the bountiful year of 1974 and from fewer than 5% to 62% in the meager year of 1973. The large variation between sampling units makes the county estimates very sensitive to sampling biases with the

²⁸ Direcția Județeană Argeș a Arhivelor Naționale. C.A.P. Căteasca, 1/1973, C.A.P. Ciupa, 1/1973, C.A.P. Bârla, 3/1973, C.A.P. Boțești, unnumbered/1973, C.A.P. Drăganu, 1/1973, C.A.P. Mareș, 1/1973, C.A.P. Moșoaia, 1/1973, C.A.P. Humele, 1/1973, C.A.P. Păduroi, 1/1973, C.A.P. Băiculești, 2/1973, C.A.P. Săpata de Sus, 2/1973, C.A.P. Ungheni, 2/1973, C.A.P. Buzoești, 1/1973, C.A.P. Poenari-Muscel, 1/1973, C.A.P. Bălilești, 4/1973, C.A.P. Vlădești, 2/1973, C.A.P. Ciofrângeni, 5/1973, C.A.P. Mihăești, 1/1973, C.A.P. Lerești, unnumbered/1973, C.A.P. Stolnici, 1/1973, C.A.P. Hârtiești, 2/1973, C.A.P. Schitu-Golești, 4/1970-1974, C.A.P. Popești, 1/1973, C.A.P. Suseni, 1/1973, C.A.P. Zărnești, 3/1973,

²⁹ C.A.P. Ciupa, 1/1974, C.A.P. Drăganu, 1/1974, C.A.P. Mareș, 1/1974, C.A.P. Moșoaia, 1/1974, C.A.P. Humele, 1/1974, C.A.P. Păduroi, 1/1974, C.A.P. Priboieni, 4/1974, C.A.P. Săpata de Sus, 2/1974, C.A.P. Dobrești, 1/1974, C.A.P. Ungheni, 2/1974, C.A.P. Vălsănești, 1/1974, C.A.P. Buzoești, 2/1974, Poenari de Muscel, 3/1974, C.A.P. Vața, 1/1974, C.A.P. Bălilești, 2/1974, C.A.P. Vlădești, 2/1974, C.A.P. Ciofrângeni, 1/1975 (it has been labeled as such although the data refer to 1974), C.A.P. Lerești, 2/1974, C.A.P. Stolnici, 1/1974, C.A.P. Hârtiești, 2/1974, C.A.P. Schitu-Golești, 4/1970-1974, C.A.P. Ștefănești, 5/1974, C.A.P. Popești, 1/1974, C.A.P. Suseni, 1/1974, C.A.P. Țuțulești, 1/1974, C.A.P. Râca, 3/1973 (it has been labeled as such although the data refer to 1974).

³⁰ Direcția Județeană Argeș a Arhivelor Naționale. C.A.P. Bârla, 3/1975, C.A.P. Ciupa, 1/1975, C.A.P. Mareș, 1/1975, C.A.P. Păduroi, 1/1975, C.A.P. Humele, unnumbered/1975, C.A.P. Priboieni, 2/1975, C.A.P. Săpata de Sus, 2/1975, C.A.P. Dobrești, 2/1975, C.A.P. Vața, 1/1975, C.A.P. Bălilești, 3/1975, C.A.P. Valea Mărului, 1/1975, C.A.P. Mălureni, 1/1975, C.A.P. Mihăești, 1/1975, C.A.P. Lerești, 1/1975, C.A.P. Ștefan cel Mare, 1/1975, C.A.P. Stolnici, 1/1975, C.A.P. Schitu-Golești, 2/1975, C.A.P. Ștefănești, 4/1975, C.A.P. Curtea de Argeș, 1/1975, C.A.P. Bradu de Sus, unnumbered/1975.

95% Confidence Intervals consistent with the sample data ranging from 32% to 52% in 1972, 13% to 30% in 1973, 31% to 59% in 1974 and 9% to 33% in 1975 (see the error bars in Figure 3.1). To control for sampling biases that favored one geographic region over the other - with geographic differences accounting for 43% of the observed variance between localities in the sample of 1972 -, the correction coefficients were applied in order to produce the more representative results presented in Figure 3.4. Furthermore, the estimation of the proportions of rural residents that had access to sufficient quantities of maize by geographic categories (Figures 3.2 and 3.3) allowed an easy combination with the data on the distribution of maize through the State-controlled Commercial Networks. The results on maize availability from all these sources are presented in Figure 3.5 and the final results on maize availability from all the sources reviewed in this Section (i.e. including Private Landholding Production) are presented in Figure 3.6.

According to the results of the model, one half to two-thirds of rural residents had access to sufficient quantities of maize to support diets centered on *mămăligă*. However, it is necessary to keep in mind that the model, given its current assumptions, produces overly conservative estimates. For example, because of my decision to assign to all Cooperative members from each category the minimum possible number of work-norms, the model fails to pick up 1658 tons (almost 20%) of the 8927 tons of maize paid by 30 Agricultural Cooperatives to their members in 1972. Furthermore, my decision to consider the household displaying the highest consumption need as representative for all households within each category overestimates actual consumption needs by as much as 15% in some cases. In addition, the assumed level of consumption for male adults of 148 kg of cereal flour was higher than the levels of consumption observed by the dietary

studies of 1979-1980 for rural residents and the 6 days mămăligă-1 day bread frequency of consumption may have approximated the consumption patterns of the established diets but it certainly did not reflect accurately consumer preferences. In particular, consumer responses to questionnaires on preferences for mămăligă and bread with 6 commonly served dishes shows that the majority of rural residents may have preferred bread when consuming soups or certain low-calorie dishes (see Chapter 4). Consequently, the insufficient availability of maize to support the established diet did not automatically translate in a sense of shortage in those cases when the available quantities were sufficient to support an optimum mixed bread-mămăligă diet. Finally, the use of a very uneven distribution pattern for maize deliveries through the State-Controlled Commercial network and the exclusion of quantities of maize redistributed through the free-market reduce the capacity of the model to identify all relevant cases. For all these reasons, the results of the model should be interpreted to show that a minimum of 50% to 66% of rural residents had access to sufficient quantities of maize to maintain their established diets at a time when bread had taken over the function of ‘core’ food according to the dietary studies reviewed in Chapter 1.

These results suggest that for the majority of rural residents, the transition from mămăligă to bread was not determined by an insufficient availability of maize but by a mix of economic, socio- cultural and sensory factors. In the following sections of my dissertation I discuss the contribution of each of these factors to the dietary change.

3.1.5 Extending the Discussion to the Relevant Region and Interpreting the Data on Maize Availability

Given that the discussion has been restricted so far to Argeş County, it is my task in this section to extend to rural residents from the entire studied region the assessment of

maize supplies in order to increase the statistical relevance of my findings. The analysis at the regional level of the rural residents' degree of access to sufficient quantities of maize to support a diet centered on *mămăligă* mirrors the analysis for Argeş County: the same sources for maize supplies have been considered (the volume of sales through the State Commercial Network, the volume of in-kind payments for work performed in Agricultural Cooperatives and the quantities of maize produced on Private Plots and Individual Holdings) and some of the same assumptions have been maintained concerning the inter-regional and inter-household distribution of maize supplies. Regarding the quantities of maize supplies distributed through the State Commercial Network, the archival evidence indicates that during the first three quarters of the Agricultural Year 1975-1976 (October-June), approximately 42 kg, 40 kg, 36.3 kg and 31 kg per capita of maize flour had been distributed in Prahova, Vâlcea, Dâmboviţa and Gorj Counties.³¹ Given an estimated per urban resident annual consumption level of 27.6 kg of maize flour,³² 67 kg, 48 kg, 45.5 kg and 36.3 kg of maize flour would have remained available to each rural resident from the four counties. Furthermore, assuming a distribution pattern in which, on average, each rural resident from plain areas had access to 17.1 kg of maize flour, 92 kg, 48 kg, 79 kg and 36.3 kg of maize flour would have been distributed, on average, to each rural resident from hilly and mountainous regions in the four counties. Such quantities would have been sufficient to cover the consumption

³¹ The data on the quantities of maize for flour distributed through the Socialist Commercial Network can be found in C.C. al P.C.R. Secţia Economică, 195/1976, 51-52. The quantities of maize have been converted to flour at the rate of 1 kg of maize to 0.7716 kg of maize flour (see page 161-162). The appropriate quantities of maize flour have been then related to the number of residents from each County, to the number of rural residents and to the number of rural residents from each geographic region as presented in *The Population and Housing Census of 1977, Vol. I: Socio-Demographic Structure*, 1.

³² Calculated by assigning to urban residents twice the consumption quantities observed in the Household Budgetary Survey for 1968. C.C. al P.C.R. Secţia Economică. 8/1970, 89.

needs of 34850 families (44.3% of all families residing in Hilly and Mountainous areas), 21100 families (23% of all families), 18000 families (38.3% of all families) and 12650 families (16.1% of all families) if it is assumed that families either managed to appropriate for themselves a quantity of maize flour sufficient to cover their consumption needs (evaluated, on average, at 380 kg) and to raise and fatten a pig (520 kg) or did not manage to appropriate any quantities of maize flour at all.³³ The corresponding number of families from plain regions that managed to appropriate sufficient quantities of maize flour under such a distribution pattern is 3020 families for Dâmbovița County and 2285 for Prahova County (6.2% of all families residing in plain regions in both counties).

The proportion of rural families that managed to secure sufficient quantities of maize from payments by Agricultural Cooperatives and from Private Plot production has been estimated based on the results for Argeș County since information has not been available at the appropriate level of disaggregation to permit a more direct assessment for each studied County. The analysis has been performed by geographic region in view of the differences observed in Argeș County between rural families that resided in Hilly and Mountainous regions and in Plain regions and has returned the following results: 2515, 3690, 1490 and 3190 families located in Hilly and Mountainous areas (6.2% of all rural families located in such areas) and 20200 and 15280 families located in Plain areas (44% of all rural families) had access to sufficient quantities of maize from Agricultural Cooperatives and Private Plot production in 1975. It has to be considered, however, that these percentages correspond to a below average agricultural year in terms of production performances and that, for instance, in the bountiful agricultural year 1974-1975 the

³³ See page 164 for more information on how the average requirement of 900 kg of maize flour per family has been estimated.

percentage of rural families who had access to sufficient quantities of maize from Agricultural Cooperatives and Private Plots was as high as 31% for Hilly and Mountainous regions and 60% for Plain regions. Finally, a conservative estimate puts the number of families who owned plots of land in un-collectivized regions and who had access to sufficient quantities of maize flour from their own production to 5470, 14200, 8200 and 10200 for each one of the four counties respectively.

The data presented in this section on the availability of maize supplies from sales on the State Commercial Network, from payments made by Agricultural Cooperatives and from production on Private Plots and Private Landholdings indicate that at least 24085 families (33% of the total number of families), 35430 families (39% of all families), 47740 families (50% of all families), 58150 families (50% of all families) and 67000 families (56% of all families) from Gorj, Vâlcea, Dâmbovița, Prahova and Argeș Counties respectively had access to sufficient quantities of maize to support a diet centered predominantly on mămăligă during the first three Quarters of the agricultural year 1975-1976. The corresponding estimates for the years 1972, 1973 and 1974 are presented as well (Figure 3.7) to qualify/adequately contextualize the results for 1975 since the year-to-year variation in the production performances of Agricultural Cooperatives, Private Plots and Individual Landholdings make the data for any single year unrepresentative more generally. When interpreting these estimates, however, it has to be considered that they define minimum limits for maize availability for all the reasons that have been presented in this Chapter. On this issue, I consider significant that, for example, whereas the average quantity of maize flour available to a rural resident from Argeș County from the three reviewed sources reached 230 kg in the agricultural year

1975-1976 - double the quantity needed to cover the average consumption needs of a rural resident given the age and sex structure of the population - my model identifies only slightly more than half of rural residents as having had access to sufficient quantities of maize. Accordingly, the finding that slightly under half of rural families from the relevant region (232390 of 495170 families) had access to sufficient quantities of maize to support a diet centered on mămăligă in the agricultural year 1975-1976 may prove to be overly conservative.

During the same three Quarters of the agricultural year 1975-1976, the distribution of industrially-produced bread reached 104.3 kg, 90.6 kg, 79 kg, 83 kg and 87 kg in Gorj, Vâlcea, Dâmbovița, Prahova and Argeș Counties respectively, a quantity sufficient to cover 99%, 86%, 75%, 79% and 83% of the annual cereal consumption needs when estimated at the level of 100 kg of cereal flour (140 kg of bread) observed in the 1979-1980 Dietary Study. This data has been converted into proportions of families who had access to sufficient quantities of industrially-produced bread to support a diet centered on bread in order to make it consistent in terms of units of analysis and logical relationships with the data on the availability of maize flour. The conversion has been performed on the assumption that certain families had managed to appropriate a quantity of industrially-produced bread sufficient to satisfy entirely 'core' food consumption needs while the remaining families had not managed to appropriate any quantities of industrially-produced bread with the result that the proportions presented above become proportions for rural families that had access to adequate quantities of bread.

The combination of the data sets on the proportion of families who had access to sufficient quantities of maize flour and to industrially-produced bread yields estimates on

the proportion of rural families that could choose to consume preponderantly either mămăligă or bread. The resulting estimates range from 25% for Vâlcea County to 39% for Argeş County and suggest that roughly 30% of rural families from the relevant region had the option to consume preponderantly either bread or mămăligă in the agricultural year 1975-1976. These estimates can also be understood to define the minimum frequencies for consumption acts at which rural residents could have chosen to consume either industrially-produced bread or mămăligă. They can only define minimum frequencies for consumption acts not just because the proportions of families who had access to sufficient cereal products to support a diet centered almost exclusively on one or the other 'core' food had been estimated based on a conservative interpretation of the data but also because the comparative procedure involving such families identifies only part of the relevant consumption acts. More precisely, the estimates presented above manage to pick up the relevant consumption acts associated with rural families that were in a position to consume either bread or mămăligă on at least 6 out of 7 meals, the cutoff limit of having sufficient maize supplies to cover at least 6 out of 7 meals having been selected to classify rural families into the categories have/have not sufficient quantities of maize. Consequently, the estimates fail to pick up the relevant consumption acts associated with any family that had access to sufficient quantities of industrially-produced bread but to quantities of maize flour sufficient for 5 or fewer meals out of 7 meals, a lack of accuracy that has the potential to considerably diminish the extent of choice observable through my analysis. In addition to this intrinsic shortcoming, the estimates describe the range of relevant consumption acts during a period characterized by below-average availability of maize flour and, therefore, are not representative for the

periods of higher agricultural production that immediately preceded and, particularly, that followed the agricultural year 1975-1976. Considering that the distribution of both maize flour and of industrially-produced bread had increased in the relevant region during the second half of the 1970s, the proportion of rural families that had access to both products may have been substantially higher in years characterized by good agricultural performances. All this evidence, therefore, conclusively demonstrates that a sizable proportion of rural residents from Argeş County and from the relevant region had access to enough quantities of maize to allow the consumption of mămăligă at a substantial number of consumption acts for which they had, nonetheless, chosen to purchase and, according to the 1979-1980 Dietary Study, to consume industrially-produced bread.

3.2 From Wheat to Maize as the Main Cash Crop

Food scholars of various affiliations have repeatedly affirmed the primacy of economic factors among the forces which shape individuals' diets.³⁴ The economic factors have been singled out even more frequently when discussing 'core' food configurations for traditional populations given the 'core' foods' great importance - whether measured in terms of quantities consumed, equivalent monetary value or of its contribution to biological well-being - for communities that faced recurrent annual and seasonal subsistence crises.³⁵ This section of the Chapter evaluates the merits of an economic explanation of the dietary change. Specifically, I intend to show that the dietary change coincided initially with a historic reversal of the relative financial costs associated

³⁴ Ellen Messer, "Anthropological Perspectives on Diet," *Annual Review of Anthropology* 13 (1984): 229-231 and David J. Mela, "Food Choice and Intake: The Human Factor," *Proceedings of the Nutrition Society* 58 (1999): 513-521.

³⁵ Sidney W. Mintz, *Sweetness and Power. The place of sugar in modern history* (New York: Penguin Books, 1991), 11. The author refines and generalizes the concepts first formulated by Audrey Richards in *Land, Labour, and Diet in Northern Rhodesia: An Economic Study of the Bemba Tribe* (Oxford: Oxford University Press, 1939).

with the consumption of mămăligă and bread in terms of both the costs of the primary material (real or forgone) and of the operations required by their preparation. The financial costs drew closer to each other during the 1970s, but by that time the rise in monetary incomes and the growing claims on women's time and energy previously available for the preparation of meals helped maintain the consumption of bread.³⁶

The financial costs of consuming 1 kilogram of wheat/wheat flour relative to the costs of consuming 1 kilogram of maize/maize flour between 1900 and 1973 are presented in Figure 3.8.³⁷ The data used to construct the ratios refer to the weighted annual retail prices on the Bucharest market of wheat and maize flour for the period 1900- 1914,³⁸ to the weighted annual wholesale prices on the Bucharest market of wheat and maize for the period 1920- 1940,³⁹ to the weighted annual retail prices on the peasant markets from major urban localities from throughout the country for maize and wheat flour⁴⁰ and to the official prices of simple black bread, black bread with potatoes and semi-white bread for 1963, 1964, 1969, 1970, 1972 and 1973.⁴¹ The price differentials observed on the Bucharest market have been proposed as representative for other local markets throughout the country considering the large share of the transactions in grain products that were performed on the Bucharest market and given the capital city's central position in a rail and road transportation system whose development helped reduce price differences between regions. In support of this assumption, a preliminary analysis of

³⁶ Bogdan Murgescu, *România și Europa*, 340.

³⁷ The indices presented in Figure 3.8 represent the ratios of the prices of wheat-based products to the prices of maize-based products. Accordingly, the value of 1.75 for 1911 shows that the price of wheat flour was 75% higher than the price of maize flour in that year. Alternatively, the value of 0.75 for 1972 shows that the price of wheat flour under the form of Black Bread was only 75% of the price of maize flour.

³⁸ Victor Axenciuc, *Evoluția Economică a României: Comerțul*, 295.

³⁹ Ibid. 310.

⁴⁰ C.C. al P.C.R. Secția Economică. 13/1970, 57, 19/1974, 21, 31/1964, 1.

⁴¹ Direcția Județeană Alba a Arhivelor Naționale. *Întreprinderea de Morărit și Panificație Alba*, 7/1973, 4-6.

price listings (1902-1903 and 1908) on the stock exchanges of Brăila and Galați - the main exit ports for Romanian grains - published in *Monitorul Oficial* show price differentials between wheat and maize of similar magnitudes. Under state socialism, the coexistence of uniform, rigid and poorly correlated official prices for maize flour, wheat flour and several types of breads together with market-determined prices for grains and flours sold on the peasant markets requires the use of multiple indices in order to assess the costs and opportunities of various dietary configurations. While the official prices were uniform for the entire country, the quantities distributed from each type of product varied considerably between regions and not necessarily in accordance with consumer demand (See Chapter 2, Section 2 for consumer reactions to the changes in the output mix of bread). Under these circumstances, the selection of black bread, simple and with potatoes, and of semi-white bread as the best alternatives available to *mămăligă* consumption in Argeș County and more generally in the region under analysis is justified on account of their large combined share of the total quantity of wheat-based products delivered in these regions (90% in 1963 and 75% in 1975). Finally, two different sets of prices applied to maize flour: the rigid, state-determined prices for quantities of maize flour sold through the State-Controlled Commercial Network and the freely-fluctuating prices for quantities of maize flour sold on the peasant markets that were sensitive to changes in supply and demand conditions. Because prices on the peasant market reflect the value assigned by consumers and producers to maize supplies that supplemented quantities already secured by consumers from the state controlled commercial network and from non-commercial sources, I have used the prices for maize flour on the peasant

market as the reference point for evaluating the costs of consuming mămăligă rather than bread during socialism.

According to the data on price differences, consumers had to pay, on average, 50% more if they wanted to buy a kilogram of wheat/wheat flour rather than a kilogram of maize/maize flour between 1900 and 1940 on the Bucharest market. Additional data on prices on the stock exchanges of Brăila and Galați for 1902-1903 and 1908 show that wheat fetched per unit of weight a price 20% to 30% higher compared to maize given identical shipping conditions. Under the likely assumption that differences in the transportation and storage prices for the two cereals could only reflect differences in the costs of handling them, the price gap between the market prices of wheat and maize percolated down to the level of local rural producers given their similar transportation and storage costs. Accordingly, rural agricultural producers that harvested both maize and wheat or just the more labor-intensive maize on dwarf holdings and which were considering to consume wheat-based products and sell maize to cover the monetary expenses of the household had to come to terms with foregoing 20% or more of the monetary revenue they would otherwise make by consuming mămăligă and selling wheat. By comparison, the financial implications of each dietary configuration were radically different during socialism with rural residents that chose to consume black bread, both simple and with potatoes, rather than mămăligă and who had the opportunity of using maize supplies as commodity on the peasant markets or as livestock feed gaining financially or in terms of other valued products (see Section 3 of this Chapter). For bread types other than black bread, the consumption of bread became increasingly

disadvantageous financially with each more expensive type of bread consumed (from semi-white to white bread and to baking specialties).

The price configurations for wheat and maize were determined by urban demand, international and national, and by the constraints imposed by the production system. Between 1900 and 1914, when Romania was firmly integrated in the international grain trade, internal prices were aligned to world market prices and were only minimally influenced by local production conditions. The influence of world market prices in rural areas was certainly far-reaching considering the degree of commercialization of grain production: from 1900 to 1913, 17271000 tons of wheat/rye and 11649700 tons of maize out of a total production of 31738500 tons (54.4%) and 32561300 (36%) respectively were exported.⁴² Furthermore, an estimated quantity of 2604000 tons of wheat necessary to cover the consumption needs of urban residents given the 1912 level of urbanization⁴³ was commercialized within borders suggesting that almost 73% of the total wheat/rye production net of quantities used as seeds left rural areas. Deducting from total production the quantities of wheat used as seeds, exported, commercialized to urban residents and lost in the milling process given an extraction rate of 90%, 6823000 tons of wheat/rye flour remained available to rural residents (including rural residents from Dobrogea) gross of transportation, processing and storage losses. This quantity corresponded to 90 kg of wheat flour per rural resident per year, a level sufficient to cover just 61.5% of the consumption requirements for cereal products if the entire quantity of wheat was used for human consumption.

⁴² Victor Axenciuc, *Evoluția Economică a României: Comerțul*, 372- 373 and Victor Axenciuc, *Evoluția Economică a României: Agricultura*, 515- 516.

⁴³ Leonida Colescu, *Dicționarul Statistic al României* (Bucharest: Institutul de Arte Grafice C. Sfetea, 1914), VII- XI.

Romania's erratic and limited participation in the international wheat trade during the Interwar period due to the regulation of wheat exports by governments concerned with securing sufficient quantities for the urban population and the adoption of protectionist tariffs by European governments concerned with strategic and social objectives has severed the connection between the world and internal prices for wheat. Between 1921 and 1939, just 6840000 tons out of a total production of 62877000 tons (10.9%) of wheat were exported, less than the 146799000 tons exported out of a total production of 896164000 tons (16.4%) for maize. Furthermore, almost two-thirds of the quantity and 20% of production was exported between 1935 and 1939 when both export and import restrictions on grain had been relaxed while less than 5% of the quantity and just 2% of production was exported between 1921 and 1925 when export restrictions had been most strictly enforced.⁴⁴ Without the connection with the world market, the price of wheat was determined at least until 1935 primarily by supply and demand conditions on the internal market. In terms of demand, urban consumption at the 1930 level of urbanization⁴⁵ absorbed approximately 9590550 tons or 21.5% of the total production net of exports and seed requirements of a product that had for urban consumers a cultural and economic advantage over maize. More specifically, urban consumers were willing to pay a premium for wheat under the form of bread in exchange for the convenience of acquiring the prepared foodstuff directly from the market given the limited cooking possibilities provided by urban housings and for its better storing qualities compared to

⁴⁴ Victor Axenciuc, *Evoluția Economică a României: Comerțul*, 372- 373 and Victor Axenciuc, *Evoluția Economică a României: Agricultura*, 551-516.

⁴⁵ Sabin Manuilă (Ed.), *Recensământul General al Populației României din 29 Decembrie 1930 [The General Census of the Romanian Population from the 29th of December, 1930]* (Bucharest: Editura Institutului Central de Statistică, 1940).

mămăligă. On the supply side, the better production performance of maize, the product of a higher yield per hectare and of a more efficient seed to grain ratio, and the constraints imposed by the wheat-maize rotation system of production worked against an equalization of prices given the urban demand for wheat. Consequently, with the exception of the interval 1921-1925 when a succession of poor maize harvests and the restrictions imposed on wheat exports changed the relative prices in favor of maize, wheat fetched a significantly better price throughout the interwar period.

During state socialism, the taking over by the state of the task of supplying urban residents with wheat-based products deprived rural residents of a lucrative outlet for the quantities of wheat they received under the form of payments for work performed in Agricultural Cooperatives. Significantly, the exit from the urban market meant that the wheat reserves of rural residents had lost a function - that of the basic ingredient for the bread consumed by urban residents - for which it had both a financial and a cultural advantage over maize/mămăligă. On the remaining functions, wheat performed slightly less well than maize as feed for livestock and financially less well under the form of bread prepared within the household or through the baking services provided by Agricultural Cooperatives. This growing, although not complete, interchangeability at the level of usages between maize and wheat promoted the convergence of their prices on the peasant market; it also explains the virtual absence of wheat cultivation on Private Plots at the same time that two-thirds of the arable land was devoted to the cultivation of the more labor-intensive and rewarding maize.

While the prices of maize and wheat on the peasant market drew nearer to each other, they remained nonetheless well above the price of the greater part of bread that was

distributed in growing quantities in rural areas beginning with the 1960s. With urban and rural incomes increasing throughout the period and with the state committed to satisfying the ‘core’ food requirements of urban and rural residents, the continuously growing consumption and demand of animal products determined a high price level for grain products sold on the free market but could not produce an analogous effect on the prices of cereal products sold through the official commercial network given their fixed nature. Moreover, an indirect adjustment to market conditions involving a transfer of grain supplies from bread-making to livestock rearing within the state sector was unappealing in the absence of actual price changes since the baking sector produced high levels of capital accumulation (see Chapter 2) while the livestock sector was producing at a financial loss. Consequently, the rural residents had the opportunity to gain financially by buying cereal products, both bread and maize flour, at state-fixed prices and by selling their own stocks of cereals directly or converted to animal products at remunerative prices on the peasant and black markets. The data from the Statistical Yearbooks suggests that rural residents managed to take advantage of the multiple price system with private households owning more than one-third of all livestock but producing roughly one half of animal products as late as 1976⁴⁶ as state and cooperative enterprises had been unable to overcome fully their comparative disadvantage in the labor-intensive livestock rearing sector.

The absence of data on quantities sold precludes the possibility of estimating the rural residents’ participation on the peasant market or their commercial-mindedness more generally. This shortcoming is particularly problematic since the use of prices on the

⁴⁶ *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică, 1977), 243, 254.

peasant market as standards for estimating the costs and benefits of alternative ‘core’ foods assumes that *all* rural residents were informed of the situation on the peasant market and chose to sell their maize supplies or to employ them for other purposes that gave a return above the prevailing market value. However, this assumption is difficult to defend considering the official restrictions on private trading activities including a particularly disrupting prohibition of transactions performed by middlemen that would have facilitated the flow of products and information between producers and consumers. In addition, the market prices are imperfect indicators for my purpose as knowledgeable rural residents pondering the option of selling their maize stocks would have considered the market value minus the costs of performing the sale when evaluating its appropriateness. While the second objection is softened by the exclusion of the cost of preparing the maize flour into *mămăligă* against the alternative of buying ready-made bread, the first objection makes necessary the reconsideration of the parameters of the decisional process for that part of rural residents that did not receive market signals. In such cases, a decision had to be taken between buying and consuming bread and using the maize supplies to increase the availability of animal products or to convert the maize supplies into flour and *mămăligă* and use the money otherwise spent on bread for whatever other purposes.

3.3 Rising Incomes and Demand for Animal Products, Rural and Urban

In the agricultural year 1975-1976, 6.2%⁴⁷ and 21% of cereal-based products were available to rural residents from Argeş County and Romania respectively under the form

⁴⁷ The sources of cereal-based products (maize and wheat/rye) covered by the estimates are: the State Commercial Network (quantities of maize distributed for the production of maize flour, quantities of wheat/rye flour converted to grain at an extraction rate of 90% from grain, quantities of industrially-produced bread available to rural residents converted to grain quantities using the ratio of 720 gr. of flour to

of baking products prepared using wheat flour from the State's Central Reserves. This quantity corresponded to 116 kg per rural resident in Argeş County (annual estimate) and to 41 kg per rural resident in Romania and the archival evidence suggests that virtually the entire quantity was purchased by consumers. While the rural residents' decision to purchase industrially produced bread would have reflected in a free market economy their preferences for bread over alternative cereal products at the prevailing prices, its interpretation is less straightforward in the context of a centrally-planned economic system in which the production and distribution sectors adjusted imperfectly, infrequently and with delays to consumer preferences. Under these conditions, the rural residents' decision to purchase bread is compatible both with a consumer preference for bread as food (over alternative types of cereal products) and with a case of forced substitution. In the latter situation, the rural residents accommodated the growing distribution of bread as a second best solution to increase the availability of grain-based fodder given that the preferred commodity (maize or maize flour) was distributed in insufficient quantities and that the consumers had limited possibilities to efficiently convey their preferences and make them more appealing to the authorities responsible with the production and distribution sectors.

1 kilogram of bread and an extraction rate for flour of 90%), the cereal production on Private Plots and Individual Landholdings (wheat/rye and maize) gross of seed requirements and the payments made by Agricultural Cooperatives to cooperative members at the end of the agricultural year 1974-1975 nationally (estimated value) and in Argeş County. For information on the distribution of maize, wheat/rye flour and industrially-produced bread, see C.C. al P.C.R. Secția Economică. 195/1976, 47-52. For information on the production of maize and wheat/rye on Private Plots and Individual Landholdings, see *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică), 197 and 222-224. For information on the payments of cereals to cooperative members in Argeş County, see the Annual Reports on 1975 of the 20 Agricultural Cooperatives listed above. The volume of payments made by Agricultural Cooperatives nationally represents the lowest reported figure for maize payments observed for 7 agricultural years and the 3rd lowest out of six years for wheat payments from the interval 1963-1977.

The arguments presented in this subsection to explain the rural residents' decision to purchase industrially produced bread beyond the pecuniary motivation provided by the peasant market support both the genuine consumer preference for bread as food and the forced substitution hypotheses. A marked increase in the rural residents' incomes and particularly in their disposable incomes, on the one hand, enhanced their willingness to resort to forced substitution in order to secure greater quantities of highly valued animal products. On the other hand, the rising incomes increased the demand for both animal products and bread as food considering a possible consumer preference for its sensory characteristics, its cultural meanings and/or its time- and labor-saving qualities. The evidence for a consumer preference for bread as food independent of its function of augmenting the grain-based fodder supplies of rural residents in certain circumstances will be discussed in the next subsection and in Chapter 4. In this subsection, I discuss only the developments in incomes and the case for a growing demand and preference for animal products which, I argue, have determined rural residents to purchase more frequently industrially produced bread regardless of their opinion of bread as food - that is, separated from its function of increasing the fodder supply.

The analysis is structured as a comparison between developments in the revenues of rural residents from Romania and Argeş County. The comparative design is intended to underline the similarities and especially the particularities of the developments in the revenues of rural residents from Argeş County that might offer an explanation for the markedly higher distribution of industrially produced bread in this region compared to the national average. Furthermore, the discussion at the national level is necessary for understanding the developments in sources of revenues such as non-agricultural wages

and pensions and welfare systems that were determined by official policies designed in reference to the entire national context. Finally, the developments at the national level concerning the revenues received under the form of old age pensions for retired Cooperative members and of welfare benefits have been used to estimate the volume of payments made to rural residents from Argeş County as data on the number of beneficiaries at the appropriate level has not been available.

The years 1966 and 1974 have been selected for the diachronic comparison of the revenues of rural residents because the information on the variety of sources contributing to the total income of the rural household has been most abundantly available for these two years. In terms of the degree of coverage of the presented estimates, the following sources of income have been considered: the monetary payments for work performed in Agricultural Cooperatives, the salaried payments for work performed in non-agricultural sectors, the old age pensions for former Cooperative workers, the social benefits paid to rural residents, the in-kind payments for work performed in the Agricultural Cooperatives and the vegetal production on Private Plots and Individual Landholdings valued at free market prices. The calculated income does not include the revenues from old age pensions in the case of rural residents who worked in non-agricultural sectors and the value and value added component associated with livestock rearing and the conversion of vegetal into animal products. The revenues from old age pensions have been excluded due to insufficient data on the number of rural recipients while the value created by the private livestock rearing sector has been excluded as a precaution against the risk of double-counting. The exclusion of the two sources of incomes results in an underestimation of the average per rural resident income but has a minimal effect on the

observed difference in income. If anything, the exclusion of revenues from old age pensions underestimates the increase in incomes as considerably more rural residents were eligible to receive pensions in 1974 compared to 1966 and as pensions increased in parallel with the increase in wages. Furthermore, the private production of meat grew nationally by 55%⁴⁸ which together with an increase of 10% in the contracting and purchasing prices offered by state enterprises to private producers⁴⁹ resulted in a higher rate of growth compared to that of the income from the surveyed sources. Only the production of milk (increase of 25%) and eggs (increase of 22%) lagged significantly behind the increase rate in total income⁵⁰ but the influence of their exclusion on the size of the income gap are expected to be minimal.

3.3.1 Developments in the Nominal Revenues of Rural Residents from Romania

According to my calculations, the per rural resident income had increased nationally from 359 lei to 497 lei per month (an increase of 39%) between 1966 and 1974. The rise in income per rural resident resulted from a stabilization of the value of payments, direct and indirect, made by Agricultural Cooperatives to the rural population in spite of a marked decrease in the number of members engaged in agricultural work, from a change in the employment profile of active rural residents in favor of more remunerative non-agricultural jobs, from a rise in medium and minimum wages for non-agricultural personnel and from a growth in Private Plot and Individual Landholding Production. According to data at the national level, the value of annual monetary and in-kind payments (valued at average production prices) made by Agricultural Cooperatives

⁴⁸ *Anuarul Statistic al Republicii Socialiste România pe 1976 [Statistical Yearbook of the Socialist Republic of Romania for 1976]* (Bucharest: Direcția Centrală de Statistică), 254-255.

⁴⁹ C.C. al P.C.R. Secția Economică. 19/1974, 12.

⁵⁰ *Anuarul Statistic al Republicii Socialiste România pe 1976*, 254-255.

increased from 11.296.184.000 lei in 1966⁵¹ to 12.221.000.000 lei in 1974.⁵² However, the volume of payments made in 1974 includes an income tax of approximately 10% of the annual revenues of active Cooperative members that was levied starting with 1968. Before that date, the income tax was charged to the Agricultural Cooperatives as a tax per hectare and was deducted beforehand from the net income that was available for redistribution to Cooperative members.⁵³ Consequently, only 11.221.000.000 lei from the volume of payments made by Agricultural Cooperatives in 1974 were available to rural residents for present and future consumption, slightly below the volume of payments available for consumption in 1966.

Within these payments, the Agricultural Cooperatives' annual contribution to the pension and social securities fund increased from 829.000.000 lei in 1966 to 2.275.000.000 lei in 1974 while the volume of payments made to Cooperative members for the work performed during the respective years decreased from 10.467.184.000 lei to 9.946.000.000 lei (8.946.000.000 net of income tax). The pension system was established in 1966 and was technically financed jointly by Agricultural Cooperatives and Cooperative Members: the Agricultural Cooperatives contributed 3.5% and, beginning with 1971, 7% of the gross value of their annual production to the pension fund⁵⁴ and the

⁵¹ The total volume of direct payments to Cooperative members has been calculated by multiplying the number of Cooperative members who have performed any kind of work in the Agricultural Cooperatives to the average annual income presented in C.C. al P.C.R. Secția Economică. 10/1971, 6. To these payments have been added the contributions made by the Agricultural Cooperatives on behalf of their members to the pensions and social securities funds of 829.000.000 lei indicated in C.C. al P.C.R. Secția Economică. 18/1977, 108.

⁵² The total volume of payments made by Agricultural Cooperatives includes the direct payments presented in C.C. al P.C.R. Secția Economică. 3/1975 (Volume I), 27 and the indirect payments for the pensions and social securities funds presented in C.C. al P.C.R. Secția Economică. 18/1977, 108.

⁵³ Law 61/1968 Concerning the Taxation of Incomes Derived from Agricultural Activities. Exposition of Motives. <http://lege5.ro/Gratuit/g43tmnju/legea-nr-61-1968-privind-impunerea-veniturilor-realizate-din-activitati-agricole/1> [last accessed on 3/23/2014].

⁵⁴ C.C. al P.C.R. Secția Economică. 18/1977, 108.

Cooperative members contributed 60 lei annually.⁵⁵ While technically the Cooperative members contributed only to a limited degree to the pension fund, indirectly they were financing almost completely the pension system since the Agricultural Cooperatives' contributions diminished the annual net income that was available for redistribution to working members at the end of each year. In fact, the rising contribution of Agricultural Cooperatives to the pension fund partly explains the fall in the volume of payments made to active Cooperative Members. Accordingly, the pension system enabled a transfer of income from working to retired Cooperative members, from members of high-performance to members of low-performance Agricultural Cooperatives⁵⁶ - given the contribution of Cooperatives in proportion to their gross incomes and the fixed value of pensions for all members - and from present to future consumption. Regarding the last aspect, the Agricultural Cooperatives and Cooperative members paid 979.000.000 lei in 1966 but no pensions or social benefits were received that year while 2.396.000.000 lei were paid and 2.697.000.000 lei received in 1974. In this sense, the volume of payments immediately available for consumption received by Cooperative members, retired and active, from the Agricultural Cooperatives in each year had actually increased between 1966 and 1974 by a rough estimate of 12% (10.317.184.000 against 11.522.000.000).

The revenues derived by rural residents from agricultural work on their private plots and private landholdings increased as well from 10.124.546.000 lei in 1966 to 12.159.057.000 lei in 1974 (20% increase). The figures refer to the value of production of a selection of 8 crops⁵⁷ that occupied 86% and 78% of the cultivated area from private

⁵⁵ C.C. al P.C.R. Secția Economică. 11/1965, 64- 65.

⁵⁶ Ibid., 68-69.

⁵⁷ The 8 crops are maize, wheat, potatoes, beans, cabbage, tomatoes, onions and peppers.

plots and private landholdings respectively for which detailed information on quantities produced and free market prices has been available. The production has been valued at the free market prices for the eight products in the closest year for which data has been available in order to adequately reflect changes in incomes that were potentially available to rural residents for consumption purposes.⁵⁸ An alternative valuation at 1966 or 1974 base prices produces a slightly smaller rate of growth of 18% indicating that higher and better structured production and not the movement of prices was responsible for the greater part of the increase in the value of production. Finally, by economic sectors, the value of production increased at a slightly higher rate on the Private Plots of Cooperative members (20.4%) than on the Private Landholdings of non-Collectivized rural residents (18.9%).

In anticipation of the analysis of incomes from agricultural and non-agricultural employment presented below, several qualifications that affect the comparability of the estimates of revenues from Private Plot and Private Landholding production have to be considered. In the sense that the survey of private agricultural production is not exhaustive, the calculated gross revenues are necessarily lower than the actual revenues. Therefore, the imperfect coverage of all sources of incomes in my analysis depresses the estimates of the value of vegetal production in addition to the exclusion of the value and valued added associated with livestock rearing as discussed previously (see pages 184-185). In the opposite direction, the valuing of production at free market prices carries with it all the overestimation biases discussed above (see page 180-181) plus it conveys

⁵⁸ For evaluating the production of the 8 crops in 1966 and in 1974, I have used the free market prices from 1969 and 1973. The lists of prices are available at C.C. al P.C.R. Secția Economică, 13/1970, 57 and 19/1974, 21.

the inaccurate impression that all rural residents were in a position to readily convert their products to money if they considered remunerative the prices offered on the peasant market. Furthermore, the calculated revenues from private agricultural production are gross of seed requirements and investments and therefore overestimate the net revenues from this source available to rural residents for consumption purposes. Finally, the estimated revenues that will be used henceforth in this subsection are net of income tax for 1966 but gross of income tax for 1974. The value of the income tax charged on revenues from private agricultural activities was 240.178.000 lei in 1966 but the quantum of the tax dropped to 106.796.000 lei in 1971⁵⁹ as law 6/1971 introduced tax exemptions for low income households and tax exemptions and deductions for households engaged in livestock rearing.⁶⁰ While it is safe to assume that the quantum of the income tax did not reach the 1966 level as long as the provisions of the 1971 law were in force (until law no. 2/1977), and, thus, that the revenues net of income tax increased at a faster rate than the gross revenues, not enough data is available to determine precisely the value of the revenues after taxes for 1974. Overall, the net revenues derived from vegetal production on Private Plots and Landholdings are certainly lower than the estimates used in my analysis of the incomes available to rural residents for consumption purposes despite the incomplete coverage of all sources of production. However, the estimates of the overall revenues derived from private agricultural production may be slightly below the actual levels given the exclusion of the livestock rearing sector.

The 20% growth rate of revenues from agricultural activities indicates that developments in revenues from employment outside of agriculture had been responsible

⁵⁹ Arhivele Naționale ale României. C.C. al P.C.R. Secția Agrară. 18/1971, 17.

⁶⁰ Ibid., 7.

for the greater part of the increase in per rural resident incomes. Between 1966 and 1974, the revenues from non-agricultural employment excluding pensions increased from 1.531.286.200 lei⁶¹ to 2.922.170.900 lei⁶² per month due to a combination of higher wages and an outflow of rural labor from agricultural to non-agricultural employment. Concerning wages, the medium net and minimum wages per month increased from 1083 lei to 1471 lei (36%) and from 550 to 1058.33 lei (92%) respectively and contributed by themselves to an increase in revenue of 548.604.800 lei per month if the rise in the medium wage of 388 lei (the smaller difference) is applied to the number of wage-earners from rural areas in 1966. In parallel, the number of rural wage-earners increased from 1413930 in 1966 to 1986520 (estimated figure) in 1974 at the same time that the number of members active in Agricultural Cooperatives decreased from 4108000 in 1966 to 3376000 in 1970⁶³ and to a minimum of 2749850 in 1976.⁶⁴ The entry of 572590 rural residents into non-agricultural employment together with the increase in wages generated additional revenue of 842.279.890 lei per month gross of other possible revenues from former employment

⁶¹ Calculated by multiplying the number of rural residents employed in non-agricultural sectors according to data from *Recensământul Populației și Locuințelor din 15 martie 1966. Vol. VII: Partea Întîi - Populația Activă pe Ramuri și Subramuri ale Economiei Naționale [The Population and Housing Census of March 15th, 1966. Volume VII: First Part: The Active Population by Sectors and Subsectors of the National Economy]* (Bucharest: Direcția Centrală de Statistică, 1969), 3-5, to the medium wage for 1966 presented in Annex 7 of Law 263/2010, 102 at http://www.cpmbrdsnet.ro/Legislatie/LG_263_2010.pdf [Last accessed on 3/29/2014]

⁶² Calculated by multiplying the number of rural residents employed in non-agricultural sectors according to adjusted data from *Recensământul Populației și al Locuințelor din 5 Ianuarie 1977. Vol. II: Populație - Structura Social-Economică*, 370-371, to the medium wage for 1974 presented in Annex 7 of Law 263/2010, 102 http://www.cpmbrdsnet.ro/Legislatie/LG_263_2010.pdf [Last accessed on 3/29/2014]. The number of rural residents employed in non-agricultural sectors in 1974 has been estimated by assuming a constant annual rate of increase for this socio-economic category between 1966 and 1977 which has yielded an annual growth rate of 4.3%.

⁶³ C.C. al P.C.R. Secția Agrară. 10/1971, 6.

⁶⁴ *Recensământul Populației și al Locuințelor din 5 Ianuarie 1977. Vol. II: Populație- Structura Social-Economică*, 56

Given the sizable contribution to the total revenues of rural residents of the inflow of labor into non-agricultural employment, a comparative analysis of incomes from agricultural and non-agricultural employment is appropriate in order to understand the financial motivations behind it and its net contribution to the rise in rural revenues. Within the Agricultural Cooperatives, the volume of payments net of income tax and of contributions to the pensions and social welfare funds made to Cooperative Members decreased at a slower rate than the decrease in the number of members active in the Cooperatives. As a result, the monthly income of a member active in the Cooperative was 520 lei in 1974, almost 20% higher than in 1966 (438).⁶⁵ If the revenues from Private Plot production valued at market prices are added to the revenues from the Agricultural Cooperatives, the income derived by a member, directly and indirectly, for his/her work in the Cooperative was 780.2 in 1974, 32% higher than in 1966 (590 lei). If the average revenues from agricultural and non-agricultural incomes increased at rather similar rates, in absolute terms rural residents active in Agricultural Cooperatives received an average income slightly above the minimum wage in 1966, considerably below it in 1974 and equivalent to just 54.5% of the net medium wage in both years. A more detailed breakdown of salaried personnel by categories of wages further shows that in 1966, only the bottom 8.8% of wage-earners received less than 700 lei per month while 46% of them

⁶⁵ The income estimates presented above include the monetary payments and the monetary value of the in-kind payments received from Agricultural Cooperatives evaluated at free market prices. The resulting total value of payments received from Agricultural Cooperatives is, therefore, much higher than the total value of payments recorded in official documents in which the in-kind payments are evaluated at production prices. The share of monetary and in-kind payments in the total value of payments evaluated at production prices has been estimated at 50% for 1966 based on the data for the year 1965 available in C.C. al P.C.R. Secția Economică, 4/1968, 17. The corresponding estimate of 60%-40% in 1974 has been derived based on the data for the year 1968, the last year for which detailed information on the payments made by Agricultural Cooperatives have been found. Finally, the estimates on the value of in-kind payments at production prices have been multiplied by a factor of 3.2 to reflect the differences between production and free market prices for the basket of products used as payment.

received more than 1101 lei.⁶⁶ Thus, more than half of the active Cooperative members - given an asymmetrical distribution in which the administrative and specialized personnel received several times the revenue of an average worker - earned less than the bottom 10% of the salaried personnel and considerably less than the average salaried worker. The gap, equivalent to 45.5% of the medium wage, between the revenues derived from agricultural and non-agricultural employment offers part of the explanation for the migration of rural labor discussed above and indicates that the net gain in revenues associated with it amounted to 383.237.300 lei.

Parallel to the increase in total incomes, the contribution of each source of revenues changed significantly between 1966 and 1974 with considerable consequences for the purchasing propensities of the rural household. The total monthly revenues available for consumption purposes to rural residents increased nationally from 4.221.066.000 lei in 1966 to 5.736.908.170 lei in 1974. In terms of sources of revenues, incomes related to non-agricultural employment increased from 1.531.286.190 lei (36.7% of total income) to 2.922.170.900 lei (51% of total income) and therefore account for the larger part of the increase in revenues. By comparison, revenues derived directly or indirectly from agricultural activities had increased more modestly from 2.689.779.834 lei to 2.812.338.083 lei per month. Among the revenues from agricultural activities, the volume of payments received under the form of pensions and welfare benefits increased to 224.750.000 lei, the value of agricultural production from private plots and private landholdings increased more moderately from 843.712.200 lei to 1.013.254.750 and the volume of payments made to active Cooperative members net of income tax decreased

⁶⁶ C.C. al P.C.R. Secția Economică. 20/1966, 72.

from 1.846.067.700 lei to 1.574.333.300 lei (evaluated at market prices). The changing weight of the various sources of income in total revenue had two important consequences. First, it increased the share of the revenue that was received under monetary form from 46.5% in 1966 to 61% in 1974. In fact, the monetary incomes of rural residents including wage payments, pensions, welfare benefits and monetary payments for work performed in the Agricultural Cooperatives increased between the two dates by 1.602.902.730 lei, a value slightly higher than the entire increase in income. The rising share of incomes in a form that enabled easy purchasing of commodities and which had value only in relation to the market and the declining share of income in the form of products which could be exchanged for other commodities at greater expense and which could be consumed directly, brought the rural resident in closer contact with the socialist commercial network. As a result, the rural households' consumption habits were influenced in an increasing degree by the structure of commodities distributed through the socialist commercial network although the rural household enjoyed throughout the period a wider maneuvering space in this regard compared to the urban household (see pages 204-205 below). Secondly, the rising share of non-agricultural and monetary income diminished the annual and seasonal fluctuations in revenue by reducing the weight of those sources of income - Private Plot production and payments to Active Cooperative members - that were affected by climatic conditions or that were more sensitive to production performance more generally.

3.3.2 Developments in the Nominal Revenues of Rural Residents from Argeş County

According to my calculations, the revenues of rural residents in Argeş County increased from 123.830.300 lei in 1966 to 192.889.800 lei per month in 1974 at a slightly

higher rate compared to rural revenues at the national level (51% compared to 38.4%). These revenues corresponded, nonetheless, to a per rural resident income of 326.7 lei in 1966 and 494.14 lei in 1974, levels moderately below the national average of 359 lei (per rural resident income in Argeş County at 91% of the national level) in 1966 and insignificantly below the national level of 497 lei in 1974. The analysis by sources of income reveals a similar general pattern for developments in the revenues of rural residents from Argeş County and Romania involving rising incomes from non-agricultural sources and from Private Plot and Individual Landholding activities and a decline in the volume of payments received directly from the Agricultural Cooperatives, but also several noteworthy differences of degree. On the assumption that the national medium wage was representative, on the aggregate, for the payments made to rural salaried personnel in Argeş County as well, the volume of payments received by rural residents for non-agricultural work increased from 71.967.516 lei (58% of total income) to 129.212.640 lei (67% of total income) with the rise in non-agricultural incomes accounting for the greater part of the increase in total revenue. Compared to the 91% growth rate at the national level however, the 80% growth rate of non-agricultural revenues in Argeş County was slightly lower and reflected a comparatively smaller inflow of rural labor into non-agricultural employment of just 21388 rural residents (from 66452 in 1966 to 87840 in 1974).⁶⁷ As a result, the levels of revenue from non-agricultural employment per rural resident nationally and in Argeş County drew closer to

⁶⁷ The number of rural residents employed in non-agricultural sectors in 1974 has been estimated by assuming a constant annual rate of increase for this socio-economic category between 1966 and 1977 which has yielded an annual growth rate of 3.65% for Argeş County. The number of rural residents employed in non-agricultural sectors in 1966 and 1977 have been taken from *Recensământul Populației și Locuințelor din 15 martie 1966. Vol. VII, 9*, and from *Recensământul Populației și al Locuințelor din 5 Ianuarie 1977. Vol. II, 383*

each other by 1974 in relative terms (difference of 28% in 1974 compared to 44% in 1966) but grew slightly apart in absolute terms (difference of 72.9 lei in 1974 compared to 68 lei in 1966).

In addition to the increase in non-agricultural revenues, the value of the production on Private Plots and Private Landholdings increased from 24.000.000 lei (estimated) to 34537600 lei⁶⁸ and the volume of payments received under the form of pensions and welfare benefits increased to 5.445.848 lei. The share of the volume of payments under the form of pensions and welfare benefits assigned to rural residents from Argeş County has been based on the County's share of the total number of active Cooperative members in 1966 in accordance with the provisions of the law that rewarded retired Cooperative members in proportion to their years in service rather than to their Cooperatives' contributions to the pensions and welfare funds. As Agricultural Cooperatives from Argeş County performed, in the aggregate, less well compared to the national average in terms of economic performance, the retired Cooperative members from this county benefited from the transfer of income from high-performance to low-performance Agricultural Cooperatives introduced by the pension system. In other words, the retired Cooperative members from Argeş County received a share of the volume of payments under the form of pensions and welfare benefits that was higher than the share of their Agricultural Cooperatives' contribution to the pensions and welfare funds.

Similarly to developments at the national level, the annual volume of payments made by Agricultural Cooperatives from Argeş County to active members declined from

⁶⁸ *Anuarul Statistic al Republicii Socialiste România pe 1975 [Statistical Yearbook of the Socialist Republic of Romania for 1975]* (Bucharest: Direcția Centrală de Statistică), 246-251.

341.603.000 lei in 1966⁶⁹ to 256.255.750 lei in 1974 but at a comparatively faster rate. Furthermore, the statistical analysis of the data from the Annual Reports of a sample of 30 Agricultural Cooperatives for each year shows that the revenues of members active in the Cooperatives increased only modestly from an average of 285 lei in 1966 to an average of 294 lei in 1974 against a corresponding increase at the national level from 437.5 lei to 522 lei. The slower rate of growth is highly unlikely to be the result of the bottom-up approach used in evaluating the revenues per active member in Argeş County as the upper limit of the 95% Confidence Interval for the 1974 data is nonetheless below the 1966 average plus the 20% growth rate from the national level. More importantly, the average revenue derived by a rural resident from Argeş County for his/her work in the Agricultural Cooperative was substantially below the national average even if the upper limit of the 95% Confidence Intervals compatible with the information from the samples for 1966 and 1974 are used. According to these more optimistic estimates, a Cooperative member from Argeş County earned 72% of the national average revenue in 1966 and 61% in 1974 and the analysis of a larger range of years shows that the difference was not specific to the selected years. Moreover, the results are supported by official reports that repeatedly emphasized the relatively poor economic performance of Agricultural Cooperatives from Argeş County with its associated repercussions on the revenues of Cooperative members.⁷⁰

⁶⁹ Direcția Județeană Argeş a Arhivelor Naționale. C.A.P. Căteasca, 1/1966, C.A.P. Boțești, 2/1966, C.A.P. Drăganu, 1/1966, C.A.P. Moșoaia, 1/1966, C.A.P. Săpata de Sus, 2/1966, C.A.P. Dobrești, 3/1966, C.A.P. Ungheni, 4/1966, C.A.P. Vălsănești, 1/1966, C.A.P. Buzoești, 1/1966, C.A.P. Telești, 6/1966, C.A.P. Urlueni, unmarked/1966, C.A.P. Poenarii de Muscel, 2/1966, C.A.P. Țițești, 1/1966, C.A.P. Bălilești, 5/1966, C.A.P. Valea Mărului, unmarked/1966, C.A.P. Lerești, 2/1966, C.A.P. Slobozia, unmarked/1966, C.A.P. Ștefănești, 3/1966, C.A.P. Curtea de Argeş, 3/1966, C.A.P. Noaptea, unmarked/1966, C.A.P. Zărnești, unmarked/1966, C.A.P. Râca, 4/1966.

⁷⁰ C.C. al P.C.R. Secția Agrară. 11/1965, 52- 53 and 6/1963, 15.

Concerning the final aspect of monetary incomes, the revenues received by rural residents under monetary form increased in absolute terms from 74.919.700 lei to 139.593.000 lei. The higher growth rate of monetary revenues compared to in-kind revenues increased their share in the total income from 60% in 1966 to 72% in 1974, levels appreciably above the national average in both years, while concomitantly reducing the proportion of the income that was susceptible to annual fluctuations. By sources of revenues, the incomes from non-agricultural employments and from pensions and welfare benefits contributed with 62.690.900 lei to the increase in monetary payments and the monetary payments received for work performed in the Agricultural Cooperatives contributed with 2.042.200 lei. While the revenues from Agricultural Cooperatives fluctuated annually in accordance with their economic performance, the statistical analysis of the Annual Reports suggests that the value of monetary payments made to Cooperative members increased without interruption from an average of 27.7 lei in 1966 to 63 lei in 1974. The steady rise of monetary payments by Agricultural Cooperatives was the result of a nation-wide official policy aimed at eliminating in-kind payments altogether. However, the available evidence suggests that Argeş County lagged significantly behind other regions in the task of converting in-kind to monetary payments as active members from Argeş County in 1974 received only a fifth of their revenues under monetary form when evaluated at free-market prices - a share roughly equal to the national average in 1966 - and only a tenth of their revenues in 1966. The comparatively larger volume of monetary payments made by Agricultural Cooperatives to each rural resident at the national level partly compensated for the comparatively smaller monetary revenues received by them from non-agricultural sources in 1966. Nevertheless, rural

residents from Argeş County have had access to significantly higher monetary incomes both in 1966 (197 lei compared to 166 lei) and in 1974 (355 lei compared to 314 lei) and an analysis limited to monetary payments from salaried work suggests that rural residents from the remaining Counties of the relevant region have had as well monetary revenues above the national average (335 lei compared to 258 lei in 1974 and 174 lei compared to 132 lei in 1966). The above-average level of monetary incomes coupled with a below-average level of availability of cereal products other than bread may explain why the planning authorities have supported the distribution of high quantities of industrially-produced bread at least in Argeş County and why rural residents had accommodated the authorities' attempt to absorb part of their higher monetary incomes through such a strategy.

3.3.3 Real Incomes and Demand for Animal Products

The discussion has focused so far on developments in the nominal income of rural residents net of income taxes and contributions to the pensions and social securities funds but real incomes are the appropriate indicators for the changes in the disposable income of rural residents that was available for the acquisition of baking products. Accordingly, the nominal incomes have to be corrected by a price index that reflects the movement of prices during the relevant time period. In this sense, the official price index shows that prices have increased by only 7.7% between 1965 and 1975⁷¹ which would correspond to increases in real incomes of 28.5% nationally and 40% in Argeş County. However, the arbitrary character of an indicator included in the price index suggests that the magnitude of inflation may have been underestimated. Specifically, the official price index recorded

⁷¹ C.C. al P.C.R. Secția Economică. 18/1977, 3.

the movement of nominal prices and the increase in the average price of a group of products characterized by high interchangeability that resulted from a shift towards more expensive varieties and which was considered to have gone against consumer preferences.⁷² The inclusion of changes in the average price of a group of products into the price index is theoretically justified since the price drift imposed on consumers an added cost for certain characteristics of the more expensive product that in a centrally-planned economic system might not have corresponded to the consumers' valuations of those characteristics.⁷³ Furthermore, given that the cheaper varieties were no longer available at previous levels of distribution, the consumers accepted the more expensive product not just for its particular characteristics but also as an imperfect substitute for the functions performed previously and more efficiently by the cheaper product. The practical problem was that the authorities responsible for calculating the price index had limited possibilities of knowing how much of the increased distribution of the more expensive varieties corresponded to consumer preferences in the absence of market mechanisms that could be expected to adjust supply to consumer demand. Consequently, their decision concerning what percentage of the financial repercussions associated with the increase in the average price of a category of products to include in the construction of the price index involved an element of arbitrariness that more often than not overestimated the extent of the agreement with consumer preferences. The difficulty of devising an appropriate methodology for discriminating between average price increases that did and did not correspond to consumer demand was actually cited as the main reason for not having included them at all in the calculation of the price index until at

⁷² C.C. al P.C.R. Secția Economică. 19/1974, 7-10.

⁷³ Alec Nove, *The Soviet Economic System. Third Edition* (Boston: Allen&Unwin, 1986), 256.

least 1968 despite the recognized inadequacy of an index that reflected only changes in nominal prices.⁷⁴

To illustrate the problem with an example relevant for the analysis more generally, in 1973 the average price of one kilogram of bread (excluding baking products) was 3.34 lei, 6 bani higher than in 1972 as a result of changes in the relative shares of bread varieties in total production.⁷⁵ Given the distribution through the socialist commercial network and the absorption by the population of 1.817.205 tons of bread in 1973, the consumers had paid an additional total of 109.032.000 lei due to the rising share of the more expensive varieties. Of this sum, 27% was considered to have been associated with a preference for superior types of bread and therefore has not been included in the price index. The remaining 73% of the sum was considered to have had represented the additional expenditure made by consumers who were constrained to buy the more expensive varieties of bread because the more preferred varieties were no longer available in sufficient quantities and, therefore, it had been taken into account in the construction of the price index. The arbitrariness of the decision concerning what part of the increased expenditure counted as forced spending leaves open the question of how much of the additional expenditure associated with a rise in the average price of bread from 2.58 lei⁷⁶ in 1965 to 3.34 lei in 1975⁷⁷ was (not) included into the price index (see Chapter 2, Section 2). Formulated for the entire distribution of consumer goods, the question concerns how much of the increase in the nominal income became tied into

⁷⁴ C.C. al P.C.R. Secția Economică. 21/1969, 20.

⁷⁵ The data used in the analysis of the average price increase for bread has been taken from C.C. al P.C.R. Secția Economică. 19/1974, 16-19.

⁷⁶ The average price refers to bread without baking specialties and has been calculated based on data from C.C. al P.C.R. Secția Economică. 12/1966, 41.

⁷⁷ The average price refers to bread without baking specialties and has been taken from C.C. al P.C.R. Secția Economică. 19/1974, 16.

sustaining the 1966 level of consumption given the substitution of cheaper goods by more expensive goods that consumers did not prefer but were obliged to accept given the idiosyncrasies of a centrally-planned market. In this sense, the application of the official price index to the increase in nominal incomes produces a maximum estimate of the increase in real incomes available to rural residents for consumption above the 1966 level. Conversely, the application of an index based on the changes in the average price of bread - given the archival evidence which suggests that bread was particularly susceptible to price drifting⁷⁸ and on the assumption that consumers preferred equally all types of bread independent of prices - produces a minimum estimate of the increase in available real incomes. Anchored between the estimates produced by the application of the official and bread-based price indices, real incomes grew nationally at a rate between 7% and 28.5% and in Argeş County at a rate between 17% and 40%.

Compared to the increase in real incomes, the quantity of industrially-produced bread available per rural resident rose by 20.5% nationally from 34 kg in 1965 to 41 kg in 1975 and from 80 kg (estimated) to 116 kg in Argeş County. Adjusted for the increase in the average price determined by the changing shares of bread types in total production, the growing availability of industrially produced bread corresponded to an increase in the cost associated with its consumption from a sum equivalent to 2.2% of the average total revenue of a rural resident nationally in 1966 to 2.6% in 1974 and from 5.9% to 7.3% of the average total revenue of a rural resident from Argeş County. The additional consumption of 23 kg of industrially produced bread nationally and of 43 kg in Argeş County is particularly interesting since these quantities roughly corresponded to, and in

⁷⁸ C.C. al P.C.R. Secția Economică. 12/1966, 40-41, 44.

the case of Argeş County amounted to the greater part of, the cumulated consumption of bread varieties (semi-white and white bread and baking specialties) that did not permit the remunerative commercialization of maize/maize flour on the peasant market. In the absence of financial incentives, I argue that the rural residents had been motivated to increase their consumption of industrially produced bread by a complex of factors that cannot be disentangled in the case of industrially produced bread prepared using flour from the State's Central Reserves. Specifically, they may have been motivated to increase their purchasing of such bread by a genuine appreciation of bread as food and/or by a desire to increase their consumption of animal products by securing greater quantities of cereal-based products that could be used interchangeably as food and feed. In both cases, the rise in real incomes would have enabled them to 'indulge' in consumption patterns that might have previously been beyond their financial possibilities.

The forced substitution hypothesis has to be considered given administrative planning of the structure of the commodities distributed through the socialist commercial network under conditions of imperfect knowledge of consumers' demand and of limited responsiveness to their preferences if the demanded commodity produced less capital accumulation or was in any other way less appealing to planning, producing and distributing agents. The possibility of misalignment between supply and demand was particularly problematic since no efficient mechanism was in place to readily correct it. Beyond the adjustment that sometimes followed the refusal of consumers to buy a certain product, the consumers were unable to communicate their relative preferences by acting on the level of prices and, therefore, could not influence the production and distribution sectors through conventional economic means. Another consequence of the rigid price

system applied to commodities sold through the socialist commercial network was that consumers could not spend their incomes in an inflationary bid to improve their access to a preferred product. Compounding the problem, the socialist commercial network offered consumers, in the aggregate, a restricted range of alternatives for spending their incomes. The planning process for determining the quantity and profile of commodities to be distributed through the socialist commercial network involved the matching of the value of commodities to the planned income of all residents from 'socialist' sources plus the value of commodities held as stocks that were intended to absorb the fluctuations in demand and to buffer possible frictions between supply and demand.⁷⁹ In the case of bread, the planning authorities' decision to increase the distribution of baking products to rural residents and, within this group, of the varieties characterized by higher prices and capital accumulation was matched to, and expected to absorb, a conservative estimate of 10% of the increase in nominal incomes in Argeş County. Given these characteristics of the planned system of distribution, rural residents unwilling to spend the expected shares of the increase in incomes on purchasing bread could choose among a limited number of alternatives: to use the equivalent sums to purchase instead commodities that were available under the form of stocks, to deposit the money at C.E.C. for future consumption or to keep it in the form of cash for transactions that required easy access to money for their successful completion.⁸⁰

Besides these alternatives which were available to urban residents as well, the rural household's simultaneous participation in a number of economic activities and especially its involvement in the private production and commercialization of

⁷⁹ C.C. al P.C.R. Secția Economică. 21/1969, 16-18.

⁸⁰ Janos Kornai, *Economics of Shortage*, 453-460.

commodities offered it additional alternatives to the spending of monetary revenues on the state-controlled commercial market. For example, the rural residents active in Agricultural Cooperatives were in a better position than the full-time salaried workers employed in non-agricultural sectors to opt for monetary or in-kind revenues of a wider range by regulating the amount of work they would perform in the Cooperative in a given year. The available labor could then be applied on the private plot for the production of various crops whenever this alternative promised higher returns or a more satisfactory structure of these returns compared to working in the Agricultural Cooperative.⁸¹ Furthermore, the rural residents could reduce the volume of their sales on the peasant market if they considered that the monetary receipts, through the claim they provided to commodities distributed through the socialist commercial network, were less appealing than the products they had to sale in exchange or simply not worth the application of labor needed for their production. Several limitations circumscribed, however, the freedom of choice enjoyed by rural residents: the alternative choices were restricted to the range of products that could be cultivated on the Private Plots or produced by the rural household, the composition of stocks was in many cases less appealing than the composition of commodities sold in the first place and the inflow of rural residents into non-agricultural employment reduced the flexibility of their work schedule and at the same time it increased the share of monetary revenues relative to in-kind revenues. Finally, the rural residents' reticence to purchase bread coupled with their reduced participation on the peasant market would have led to an increase in the monetary reserves in the hands of urban residents that was unlikely to be spent on bread given that

⁸¹ Ibid., 392.

its consumption had already reached the culturally-prescribed maximum in urban areas. Within the limits imposed by the desire to save or to buy some other commodity distributed through the socialist commercial network, the availability of extra monetary reserves in the hands of the urban population often fueled an increase in the prices of agricultural produce transacted on the peasant market. The higher revenues associated with the new price levels would then have had the effect of increasing the appeal of consuming bread relative to the alternative of withholding part of the private plot production for own consumption.

My overall argument is that the rural residents accommodated the growing distribution of industrially produced bread because of its contribution to the availability of grain-based fodder and, by extension, to the availability of highly valued animal products given that they lacked the requisite means to persuade the planning authorities to distribute in sufficient quantities cereal products in the potentially more preferred unprocessed or semi-processed form. Furthermore, a substantial rise in incomes and particularly in monetary incomes, the product of higher wages and of the inflow of rural labor into salaried employment, together with the planning authorities' commitment to absorb a substantial part of the increase in incomes by distributing industrially-produced bread generated a set of conditions which favored the purchasing of bread. Specifically, rural households that did not participate in transactions on the peasant market and which, therefore, had to decide between using the rise in incomes to purchase industrially produced bread and to purchase some other commodity or to deposit it in saving accounts, may have chosen the former alternative given a relative preference for consumption of animal products. The choice of purchasing industrially-produced bread

persisted for rural households active on the peasant market when the alternative consisted of consuming vegetal products that would have been otherwise transacted on the market up to a value equivalent to the sum spent on bread. When rural households had to decide between purchasing industrially produced bread and withholding from sale quantities of animal products up to a value equivalent to the sum spent on bread, urban pressure, fueled by an increase in monetary reserves and by a preference for animal products, would have pushed the prices on the peasant market up to a level considered remunerative by rural residents. Specifically, the prices would have gradually increased to a level that would have enabled rural residents to consume bread and to accumulate thereby sufficient quantities of grain-based fodder to support the production of animal foodstuffs that were jointly considered more advantageous than consuming immediately their stocks of animal products.

In the above analysis, the high preference for animal products is assumed since its demonstration for rural and urban residents under the conditions of a centrally-planned economic system would require the same type of in-depth analysis as in the case of bread and *mămăligă*. However, the cross-cultural preference for animal products illustrated by the high preference scores assigned to them by consumers from various economic, cultural and social settings⁸² and by the special status associated with its consumption⁸³ suggests in all likelihood a similar penchant for consuming animal products for rural and urban residents from 1960s and 1970s Romania. In fact, the ubiquitous preference for

⁸² H. Leon Abrams, Jr, "The Preference for Animal Protein and Fat: A Cross Cultural Survey," in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 207-224.

⁸³ Alan Beardsworth and Teresa Keil, *Sociology on the Menu: An Invitation to the Study of Food and Society* (London: Routledge, 2002), 193-218, Micheal N. I. Lokuruka, "Meat is the Meal and Status is by Meat: Recognition of Rank, Wealth, and Respect through Meat in Turkana Culture," *Food and Foodways: Explorations in the History and Culture of Human Nourishment* 14 (2006): 201- 229.

animal products has led a number of researchers to consider it an inherited biological predisposition rooted in the adaptive function of preferring energy-denser foods in an environment characterized by scarce food supplies.⁸⁴ As more regional-specific evidence in support of my assumption, a constantly rising consumption of meat per capita in Romania from 26.6 kg in 1965 to 31.2 kg in 1970 and to 45.7 kg in 1975 (72% increase between 1965 and 1975) and respectable growth rates for milk (26%) and eggs (35%)⁸⁵ tentatively suggest a preference for animal products that rising incomes had finally enabled to be translated into actual consumption.

3.4 The Limits of an Economic Explanation of the Dietary Change: The Case of bread produced through Baking Services

The consumption of bread produced through baking services permits an assessment of the rural consumers' appreciation of bread independent of its function of increasing the availability of cereal-based fodder supplies. The services provided by the bakeries affiliated to Agricultural and Consumers Cooperatives ranged from producing bread with grains and flour provided by customers to baking home-prepared dough. For these services, the bakeries of the Consumers Cooperatives charged a variety of fees: between 40 and 65 bani for baking home-prepared dough, between 40 and 80 bani or between 120 gr. and 190 gr. of flour for one kilogram of bread produced using consumers' flour and a lump quantity between 1.210 and 1.275 kg of wheat for one kilogram of bread produced using the required part of the delivered quantity.⁸⁶ The bakeries subordinated to Agricultural Cooperatives practiced lower tariffs of one

⁸⁴ William J. Hamilton III, "Omnivorous Primate Diets and Human Overconsumption of Meat," in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 117-133.

⁸⁵ C.C. al P.C.R. Secția Economică. 56/1977, 38.

⁸⁶ C.C. al P.C.R. Secția Economică. 10/1966, 57-59.

kilogram of wheat for one kilogram of bread and between 30 and 55 bani for baking home-prepared dough.⁸⁷ In all situations, the consumer provided a quantity of wheat/wheat flour that served as the raw material for bread which was equivalent in monetary and nutritional value to roughly the same quantity of maize/maize flour that would have been used in preparing mămăligă and an additional monetary or in-kind fee. Accordingly, the monetary and in-kind fees, whether valued in monetary terms or in reference to their potential use as feed, represented the minimum payment that the rural residents were willing to make for the convenience of consuming bread produced in the bakeries of the Consumers and Agricultural Cooperatives rather than mămăligă. In this sense, the significant increase of bread production through baking services to 46100 tons in 1970⁸⁸ and finally to 152450 tons in 1975⁸⁹ since its inauguration in 1960 - corresponding to a per rural resident level of 13.5 kg by the end date - suggests that bread consumption appealed to rural residents beyond its contribution to the availability of grain-based fodder.

The region under analysis enjoyed an early start in the provisioning of baking services to rural residents with 113 out of a total of 143 bakeries affiliated to Agricultural Cooperatives in 1966 being located in Argeş Region.⁹⁰ Furthermore, the analysis of the data from the Annual Reports of 48 Agricultural Cooperatives for which the relevant information has been available indicates that 27 Cooperatives (57%) included a bakery

⁸⁷ Ibid.

⁸⁸ Calculated as the difference between total production and the quantities produced by the baking industry (State-owned units and Consumers Cooperatives) in 1970. The data on total bread production is taken from C.C. al P.C.R. Secția Economică. 24/1972, 74 and the information on bread production by the baking industry is taken from C.C. al P.C.R. 51/1971, 41.

⁸⁹ C.C. al P.C.R. Secția Economică. 134/1976, 4. Calculated as the difference between total production and the quantities produced using wheat flour from the State Central Reserves in 1975.

⁹⁰ C.C. al P.C.R. Secția Economică. 10/1966, 57-59. Argeş Region was an administrative unit that included the larger parts of Argeş and Vâlcea Counties and parts of Olt and Dâmbovița Counties.

among their economic establishments by 1975. The Agricultural Cooperatives having bakeries were predominantly located in plain areas (16 out of 27) where also just 3 out of the 19 surveyed Agricultural Cooperatives did not provide baking services to their members. The observed geographic difference in the proportion of Agricultural Cooperatives which had bakeries corresponded to the geographic difference in the quantities of wheat received by Cooperative members as payment for their work. In this sense, the Cooperative members that decided to convert their supplies of wheat into bread were generally the ones that had access to ample quantities of wheat due to a combination of higher number of work-units performed and of a higher in-kind remuneration per work-unit characteristic of Agricultural Cooperatives located in plain areas. Since the payments in wheat and maize were highly correlated and since Private Plot production was higher in plain regions, the same rural residents that made use of baking services had access to large quantities of maize as well. Therefore, the group of Cooperative members that consumed bread produced through baking services was representative for a narrow category of rural residents that had access to sufficient supplies of cereals to support both consumption of bread and a high production of animal products. Nevertheless, their decision to consume variable quantities of industrially-produced bread when maize for mămăligă was readily available and less costly financially or in terms of potential fodder supplies conclusively shows that rural residents appreciated bread for its convenience qualities and/or hedonically preferred it with certain side dishes.

Conclusions

The findings from Chapter 2 and 3 can now be brought together to provide a comprehensive understanding of the economic determinants of the dietary change.

Between 1959 and 1975, distribution of industrially produced bread using wheat flour from the state's central reserves increased nationally from a per rural resident level of 14.14 kg to 41 kg and in the studied counties from 26 kg to 117 kg (See Appendix to Chapter 2). Initially promoted to prevent the siphoning-off by rural residents of scarce bread supplies destined for urban residents given the shortcomings of the rationing system, the distribution of industrially produced bread in rural areas was encouraged because of its efficient contribution to capital accumulation. The same concerns over the Baking Sector's capacity to contribute efficiently to the State Budget given rising production costs determined a parallel change in the output mix of bread production from low-price low-profitability varieties (black bread) to high-price high-profitability varieties illustrated by the corresponding rise in the average price of one kilogram of bread from 2.44 lei in 1959 to 3.72 lei in 1973. Under the pressure to produce 'efficiently', the Baking enterprises reduced the production of black bread varieties both absolutely and relatively to just 26% of total production in 1976 (see the Figures 2.1 and 2.2 from the Appendix to Chapter 2), but its preferential distribution to rural areas assured that in the relevant region more than half of the bread was still distributed under the form of black bread (60 kg of black bread per rural resident in Argeş County).

At the other end of the transaction, the majority of rural consumers had access to sufficient quantities of maize to support a diet centered on mămăligă but nonetheless accommodated the rising availability of industrially- produced bread. When black bread was available, the rural household's decision to purchase and consume bread rather than mămăligă presented financial advantages as it increased the quantities of maize that could be used as a commodity on the peasant market or as livestock feed. For all other types of

bread produced using wheat flour from the State's Central Reserves, the decision to purchase bread broadened the rural household's access to cereal products and, therefore, indirectly augmented the availability of highly valued and relatively scarce animal products. For a rural population in the grips of a modernizing process affecting their incomes, employment profiles and diets more generally by enabling the consumption of protein-rich foods at the expense of the 'core' products, the consumption of bread with its time- and labor- saving qualities and its contribution to the availability of animal products had certainly had appeal.

The observed rise in the disposable income acquired an additional dimension in an economic system which offered consumers limited alternatives for spending their incomes. In this sense, rural residents during socialism could have chosen to purchase bread or to save the equivalent part of their incomes, to spend it on purchasing stocks or to withhold from sale part of their private production but they did not have the possibility to spend their incomes on improving their access to a more preferred commodity in an inflationary bid or to adjust their incomes to their needs given the rigidity of the official price and labor systems. Consequently, the consumers' purchasing behaviors in a centrally planned economic system indicates their preferences for a commodity - bread in this case - over a limited number of alternatives and, therefore, are less suggestive of consumers' relative preferences than purchasing behaviors in a free market system. In addition, the relative economic costs of a diet centered on bread or *mămăligă* provide even for periods defined by free market operations only incomplete information on the rural residents' motivations to consume the observed quantities of the two 'core' foods. Between 1900 and 1940, when the prices of wheat and maize were determined by the

interplay of supply and demand, the rural residents' decision to consume preponderantly mămăligă indicates that they did not value bread consumption over mămăligă consumption sufficiently (enough) to justify the payment of or, alternatively, the foregoing of a revenue equal to the persistent price difference between the two grains. On the other hand, the limited consumption of bread suggests nevertheless that the rural residents occasionally considered worthwhile to part with additional revenue for the acquisition of a more preferred 'core' food. Similarly, the rural residents' decision to consume bread produced through baking services provided by the Agricultural and Consumers Cooperatives indicates that consumers valued bread consumption sufficiently enough to accept its higher economic cost (valued in monetary or equivalent fodder quantities) relative to the alternative of consuming mămăligă. An assessment of the reasons that motivated rural residents to purchase the pricier bread and of the possibility that they had preferred bread over mămăligă in other instances but not sufficiently enough to compensate for the prevailing price differences requires an analysis that goes beyond the economic and convenience aspects discussed so far to include a variety of 'cultural' factors that are capable of influencing food preferences. It is the task of the next Chapter to discuss in more detail these 'cultural' factors.

Annex to Chapter 3

An illustration of how the model has been applied to estimate the number of rural residents who had access to sufficient quantities of maize for the category of households having consumption needs of up to 633 kg for the village of Bârla (the median village in 1972) may facilitate the interpretation of the results from the local and county levels. According to the data from Vața and Dobrești villages on the distribution of residents by categories of households, approximately 31.6% of residents from Bârla (640 out of 2026 residents) lived in households which required up to 633 kg of maize flour to support their established diets and which included, on average, three able-bodied members of working age. The high number of members of working age offered these households better chances of securing a full plot of land and, therefore, the village average of 0.29 Ha of arable land was used to approximate their plot holding.⁹¹ With two-thirds of the arable land cultivated with maize and with an average production of 1868 kg of maize per hectare in Bârla Agricultural Cooperative,⁹² each household derived, on average, 357 kg of maize from Private Plot production.

Furthermore, the three members of working age entitled the households, on average, to a relatively higher share of the 162 tons of maize paid to cooperative members for work performed in the Agricultural Cooperative. According to information on the employment profile of able-bodied residents of working age, on the breakdown of cooperative members by categories of work-norms performed and on the quantity of

⁹¹ Direcția Județeană Argeș a Arhivelor Naționale. C.A.P. Bârla, 3/1972, 2-3.

⁹² Ibid., 9.

maize paid for one work- norm, 15.2% of residents of working-age received 30 kg of maize from the Agricultural Cooperative, 11% - 63 kg, 16% - 123 kg, 9% - 243 kg, 4% - 363 kg, 2% - 483 kg, 2% - 603 kg and 41% (members in non-agricultural or household employment) did not receive any quantities of maize. Assuming independence between types of households and employment profiles and between members of the same household in terms of work performances, 33% of all weighted combinations of the eight categories taken three at a time produced maize revenues for households larger than 276 kg (total consumption needs minus Private Plot production). In other words, 33% of all households from this category comprising 211 members had access to sufficient quantities of maize from Private Plot production and Agricultural Cooperative payments to satisfy entirely the consumption needs of all of their members. Finally, 5.5% of all households from Bârla - a village located in a plain region - managed to secure enough maize supplies from the Commercial network to satisfy, on average, their members' consumption needs and to raise and fatten a pig. Assuming equal opportunities to access maize supplies sold through the Commercial network for all households independent of whether they had managed to secure sufficient quantities from Private Plot and Cooperative sources, 36.7% of households comprising 235 members (11.6% of the entire village population) accessed sufficient quantities of maize from all three sources combined. Aggregating the results from all the categories of households from Bârla in 1972, the model identified 48% of residents to have had access to sufficient quantities of maize from the three sources combined.

CHAPTER 4: THE COMPLEXITY OF FOOD PREFERENCES: LIKING BOTH BREAD AND MĂMĂLIGĂ BUT WITH THE APPROPRIATE 'FRINGE' DISHES AND IN THE APPROPRIATE CONTEXT

Introduction

Food scholars of various persuasions generally agree that a person's dietary practices are influenced to a considerable extent by the culinary culture of the group or community of which he/she is a member. The culinary culture is broadly understood in this discussion to include the staple foods and dominant ingredients representing the raw material of diets and the practices and rules of combining them into familiar dishes together with the norms defining the appropriate time and context of their consumption. The basis for this widespread consensus is provided by the understanding that human beings inherit a limited range of predispositions that affect dietary practices such as a general preference for sweet and salty tastes, a general aversion for bitter tastes and irritants, a reticence to try new foods (food neophobia) moderated by the need and desire to sample a wide variety of food sources (food neophilia) in order to secure an adequate intake of nutrients (the omnivore's paradox)¹ and a mediating process to assure varied intake termed sensory-specific satiety.² Instead, human beings as generalists form dietary practices and food preferences by interacting with their environment through learning processes that can amplify, reverse and breed content into inherited predispositions. For example, sugar consumption in Great Britain was considerably higher than in France throughout the 19th century despite the innate liking for sweet tastes, the ready availability of sugar in both countries and the more or less similar disposable incomes. In

¹ Leann L. Birch, "The Development of Food Preferences," *Annual Review of Nutrition* 19 (1999): 45.

² Barbara J. Rolls et al., "Sensory Specific Satiety in Man," *Physiology & Behavior* 27 (1981): 137-142 and Barbara J. Rolls, "Sensory-Specific Satiety," *Nutrition Reviews* 44 (1986): 93-101.

Great Britain however, sugar became associated with tea in a fashionable custom adopted by various social classes as part of the temperance movement and the idea of the ‘respectable’ man whose ideology of balance found expression in the bittersweet mix of the new beverage.³ In contrast, in France the consumers’ rejection of the association of sugar with coffee, wine or bread deprived it until the beginning of the 20th century of a culturally appropriate vehicle that could have promoted its consumption.⁴ Alternatively, the innate aversion for the bitter tastes of chocolate, coffee and beer and for the irritant substances from chili pepper can be overcome and turned into a preference by association with their subjectively-liked post-ingestion consequences or with positively valued contexts of consumption.⁵

The learning processes mediate also the acquisition of the dominant characteristics of a culinary culture through an early familiarization with the principal foods and flavors of the diet. This process of familiarization or socialization into a culinary culture has been documented to begin before birth in the case of flavors⁶ and to reduce the neophobic response for foods having similar flavors or that have been presented during an appropriate time window after weaning when the propensity to accept new foods is high.⁷ Consequently, the neophobic response develops primarily in relation to foods that are intended to be incorporated within the established culinary

³ Woodruff D. Smith, “Complications of the Commonplace: Tea, Sugar and Imperialism,” *The Journal of Interdisciplinary History* 23 (1992): 259-278.

⁴ Martin Bruegel, “A Bourgeois Good? Sugar, Norms of Consumption and the Labouring Classes in Nineteenth-Century France,” in *Food, Drink and Identity: Cooking, Eating and Drinking in Europe since the Middle Ages*, ed. Peter Scholliers (Oxford: Berg, 2001), 99-112.

⁵ Paul Rozin, “Human Food Selection: The Interaction of Biology, Culture and Individual Experience,” 59-88 and “Particular Foods: Chili Pepper, Coffee and Chocolate,” in *Towards a Psychology of Food Choice*, ed. Paul Rozin (Bruxelles: Institut Danone, 1998), 161-217.

⁶ Julie A. Mennella, “Development of Food Preferences: Lessons Learned from Longitudinal and Experimental Studies,” *Food Quality and Preference* 17 (2006): 635-646.

⁷ Patricia Pliner and Sarah-Jeanne Salvy, “Food Neophobia in Humans,” in *The Psychology of Food Choice*, ed. Richard Shepherd and Monique Raats (Wallingford: CABI Publishing, 2006), 77.

culture and its firmness is culturally determined with repeated positive experiences with novel foods and their association with prestigious social groups and positive contexts of consumption reducing neophobia.⁸ Finally, sensory-specific satiety and food ‘boredom’, which refer to the decrease in the rated pleasantness of a food as its consumption increases within a single meal or as the frequency of its consumption increases within a longer-term dietary pattern, begins to operate at different levels for various categories of foods depending on whether the established cultural norms that define their appropriate frequency of consumption or quantitative intake are transgressed or not. For instance, a given frequency of consumption has been found to result in food ‘boredom’ for ‘fringe’ dishes but to have no effect on the pleasantness ratings for bread because the cultural norms prescribed different frequencies of consumption for the two categories of foods.⁹

This succinct illustration of the high malleability of a member’s dietary practices under the pressure of the established culinary culture of the community introduces the discussion of the ‘cultural’ and physiological factors that have contributed to the formation of a relative preference for bread or mămăligă with particular ‘fringe’ dishes. The ‘cultural’ factors considered in the first two sections refer to norms and customs that explicitly, and to dietary practices that implicitly, conveyed information to consumers about which ‘core’ food was appropriate with particular ‘fringe’ dishes depending on the context of consumption or which contributed to a valorization of the consumption of one of the ‘core’ foods relative to the other more generally. These factors added a symbolic dimension to the materiality of ‘core’ food which has the potential to explain why rural

⁸ Ibid.

⁹ Marion M. Hetherington and Ali Bell, “Effects of Repeat Consumption on Pleasantness, Preference and Intake,” *British Food Journal* 102 (2002): 508.

residents had occasionally accepted to purchase and consume a 'core' food that was less financially advantageous per unit of weight or calorie. Finally, a physiological factor related to the calorie-based conditioning process has been included in the discussion since it may have contributed to the formation of preferences for specific 'core'-'fringe' combinations which could explain the consumption behavior of rural residents. The analysis of these additional factors proceeds deductively and inductively from present preferences and past dietary practices to approximate the relative preferences for bread or mămăligă at the time of the dietary change based on multidisciplinary theories on the formation of dietary preferences. Deductively, the use of bread as social marker, as the appropriate serving at festive meals and as a special treat in more mundane circumstances is expected, based on sociological models of downward diffusion of prestigious dietary practices and on the findings of experimental studies, to have had contributed to a relative valorization of bread consumption over mămăligă consumption. Alternatively, the early socialization of consumers into dietary practices centered on mămăligă is expected, based on anthropological and sociological studies of traditional and modern communities that have shown the consumers' strong attachment to the established diets and the stability of, and relative preference for, early formed dietary practices, to have had contributed to a relative preference for mămăligă consumption over bread consumption. Finally, an adjusted calorie-based conditioning model which relates a food's energy density to consumer preferences depending on the total energy load of the food and on the consumers' energy need state predicts that bread - the energy denser food - would be relatively more preferred than mămăligă - the less energy dense food - with low calorie 'fringe' dishes and relatively less preferred with high calorie 'fringe' dishes.

The evaluation of current preferences for bread or mămăligă with six commonly served ‘fringe’ dishes has been intended primarily to verify the appropriateness of some of these expectations in the case of the dietary change from mămăligă to bread. The pattern of observed results, with consumers preferring preponderantly certain ‘fringe’ dishes with mămăligă and other ‘fringe’ dishes with bread, minimally argues against the expectation that early habituation with a ‘core’ food conditions a permanent preference for it. Maximally, the evidence presented in this chapter suggests that the current pattern of relative preferences is indicative of consumers’ preferences at the time of the dietary change by discounting the possibility that major post-dietary change developments had happened which would reduce the inductive value of current preferences.

The chapter opens with a discussion of the effects of the information that a food is socially valued on consumers’ preferences for that food and on the set of practices which distinguished bread as ‘prestigious’ in relation to mămăligă. The discussion in subsection 2 focuses on the relationship between an early socialization into a food culture on lifelong food preferences and on the explicit and implicit norms of consumption which defined as appropriate the combination of certain ‘fringe’ dishes with mămăligă. Finally, subsection 3 reviews the general evidence on the relationship between caloric density and food preferences and discusses the particular contexts in which this relationship produces different results. The merits of each model in interpreting the consumers’ perceptions of the dietary change are evaluated in relation to data on the current preferences for bread and mămăligă with six commonly-served ‘fringe’ dishes in Section 2 of this chapter which also includes an assessment of the value of present-day preferences for inferring past preferences. As expected, the combination of inductive and deductive methods for

retrieving the past preferences of consumers who have produced limited written materials on this matter requires the sampling of a variety of sources including anthropological, sociological, historical and consumer behavior studies on the consumers' interactions with the 'core' foods of their diets, published and unpublished depictions of peasants' dietary practices and retrospective oral testimonies on past dietary habits.

4.1 Deductive Models for Evaluating Food Preferences at the Time of the Dietary Change

4.1.1 The Socio-Cultural 'Prestige' Model Predicting a Preference for Bread

Methodologically, the discussion in the following two sections proceeds deductively by interpreting the effects on relative preferences of observed dietary practices and customs in reference to a theoretical corpus that includes studies from various disciplines on the influence of explicit and implicit culturally-specific information on the consumers' consumption and preferences for foods. Applied specifically to the case of bread, I argue that its use as a reward and comfort food,¹⁰ as the appropriate serving at ritual and celebratory feasts marking their distinctiveness from ordinary fare and by recognized prestigious social groups such as urban residents, landlords and better-off peasants, is expected, based on developments from similar cases, to have had contributed to a valorization of bread consumption relative to mămăligă.

The available evidence indicates that up to the point of the dietary change, bread had performed the function of social marker with the frequency of its consumption increasing as social categories within the rural world were positioned higher in the

¹⁰ Julie L. Locher et al., "Comfort Foods: An Exploratory Journey into the Social and Emotional Significance of Food," *Food and Foodways: Explorations in the History and Culture of Human Nourishment* 13 (2005): 273-297.

economic hierarchy. The statistical analysis of the data from an exhaustive survey of the economic and hygienic conditions of the rural households from Roman County (1932)¹¹ - one of the few studies that had collected adequate data on the number and age of family members, on the size of their land properties, on monetary incomes and on the consumption of wheat and maize for a sufficiently large number of households (36) - has shown that the frequency of bread consumption was a function of the average size of landholding per family member adjusted for age and sex (Pearson's $r=0.47$, a moderate correlation). However, an inspection of the scatter plot relating the consumption of wheat by quantity to the average size of landholding per family member indicates that the linear relationship verified by the Pearson's product-moment correlation does not represent adequately the actual relationship between the two variables. Rather, the consumption of wheat is relatively insensitive to increases in the average size of landholding per family member below the threshold of 0.7 Ha but increasingly sensitive after this threshold. In fact, a comparison of the rural households owning above and below the 0.7 Ha threshold shows that the former group consumed significantly more quantities of wheat with all 7 families that had daily consumptions per family members above 100 gr. owning more than 0.8 Ha and 6 of them more than 1 Ha per member. The additional findings that the 1938 survey, whose samples included a disproportionately large number of households from the upper quarter of total households in terms of size of landholdings, returned results showing much higher levels of bread consumption compared to studies of the same villages that used more representative samples (see the discussion on Drăguș and Naipu villages from Chapter 1) further testifies to the strength of the relationship between

¹¹ Moise Enescu, *Situția economică a populației rurale în raport cu Sănătatea publică și Igiena [The Economic State of the Rural Population in Relation to Public Health and Hygiene]* (Roman: Beram-Tatăl, 1936).

bread consumption and socio-economic position. Finally, casual remarks by contemporary writers have linked a household's position in the *codași*, *mijlocași* and *frunțași* categories according to the size of its landholding with considerably different frequencies of bread consumption.¹²

In addition to the difference in the frequencies of bread consumption between social categories in the rural world, an even more pronounced dividing line separated the rural from urban residents in regions displaying high levels of *mămăligă* consumption. According to two studies on the dietary practices of schoolchildren from 1934 and 1935, 829 out of a total of 833 (99%) schoolchildren from Bucharest,¹³ 9579 out of 17678 (54.1%) primary-level schoolchildren and 8348 out of 12844 (65%) secondary-level schoolchildren attending urban schools in Bucovina consumed regularly bread at all the meals of the day.¹⁴ By comparison, just 23074 out of 101910 (23%) schoolchildren attending rural schools in Bucovina had consumed bread at all the meals of the day during the observation period while the rest had consumed only *mămăligă*. The relatively low level of bread consumption in urban areas in Bucovina may be specific to this region which had to cope at the time of the study with high population pressure on land and the accompanying shortage of cereal products - including maize flour - and high market prices. Accordingly, for the region under analysis, the share of urban residents consuming

¹² Moise Enescu, *Considerațiuni asupra dezvoltării serviciului sanitar din județul Roman și asupra progresului realizat până în prezent [Considerations on the Development of the Public Health Service in Roman County and on the Progress Realized up to the Present]* (Bucharest: Institutul de Arte Grafice Carol Göbl, 1928), 21.

¹³ Gheorghe Banu, "Cercetări asupra alimentației copiilor de școală în România [Research on the Dietary Habits of Romanian Schoolchildren]," *Revista de Igienă Socială* 1 (1931), 860.

¹⁴ "Cronică: Alimentația elevilor școlilor primare și secundare din cuprinsul regiunii II-a sanitare (Cernăuți), de dr. Theodorescu [Chronicle: The Dietary Habits of Primary and Secondary Level Schoolchildren from the Territory of the Second Sanitary Region (Cernăuți), by Doctor Theodorescu]," *Revista de Igienă Socială* 7 (1934): 440-441.

preponderantly bread can be estimated conservatively at around 80%, the midpoint between the relatively high consumption level from Bucharest - which was supported by the higher incomes earned by the residents of the capital city - and the relatively lower consumption levels from urban areas from Bucovina which were determined by the high prices of cereal products on this market.

The association of bread consumption with certain social categories can be conceptualized to have had influenced bread consumption by the general population by means of social pressure promoting the imitation of the dietary practices of the upper categories and/or by contributing to a genuine preference for bread consumption among rural residents by conveying information on the relative social value of the two 'core' foods. In an imitation process, rural residents accustomed to consuming mămăligă may have been willing to increase their intake of bread regardless of their own appreciation of bread and mămăligă in an attempt to erase a social marker that distinguished upper from lower classes. Alternatively, bread consumption by prestigious social groups that were comparatively freer from material constraints transmitted the information that bread consumption was socially more valued than mămăligă consumption. This information, if accepted and internalized by rural consumers, may have supported a relative preference for bread that in its turn may have provided the motivation for increasing its consumption more generally. How a food's association with prestigious social groups influences its consumption has particular relevance in the interpretation of the rural residents' decision to increase their consumption of bread considering that the majority of meals were restricted to family members and to the intimacy of the household. If the association of bread consumption with prestigious social groups influenced consumption solely through

social pressure to conform, rural residents might have accepted to consume bread at meals characterized by high visibility in the community while continuing to consume and prefer *mămăligă* at everyday meals especially since the saved resources would have been available for investment in more efficient means of displaying status such as clothing, land acquisition or housing. The consumption acts having a high degree of visibility included festive meals occasioned by religious and family celebrations when rural residents entertained guests at their table and the packaged lunch served on the job in the company of other rural and urban colleagues. If, however, the information that bread was socially more valued than *mămăligă* modified consumers' relative preferences for the two 'core' foods, rural residents might have been additionally motivated to increase their consumption of bread at ordinary meals once the economic developments discussed in the previous Chapter had permitted it.

Several anthropological, historical and consumer behavior studies have indicated that a food's association with prestigious social groups influences its consumption by other social groups but only a few studies have differentiated between the contribution of social pressure enforcing conformity in dietary practices from that of a genuine preference for the food promoted by the information that the food is socially valued. Willy Jansen, for example, in her study on how past and present Algerian communities have used food practices to construct and express their cultural and ethnic identities, argues that consumers held ambivalent evaluations of the French baguette-type bread whose consumption gradually spread among urban and rural residents.¹⁵ On the one hand,

¹⁵ Willy Jansen, "French Bread and Algerian Wine: Conflicting Identities in French Algeria," in *Food, Drink and Identity: Cooking, Eating and Drinking in Europe since the Middle Ages*, ed. Peter Scholliers (Oxford: Berg, 2001), 195-218.

respondents readily affirmed the superiority of the French baguette-type bread over ‘Arab’ bread, which they characterized as ‘coarse, black or old’, consistent with their general appreciation of ‘French’ products and their general disdain for the products of their own communities.¹⁶ On the other hand, consumers continued to prefer ‘Arab’ bread at ritual and festive meals or when entertaining guests, they considered the French bread to be less healthy, and they appreciated the ‘Arab’ bread for its versatility and good keeping qualities.¹⁷ The author has explained this ambivalent attitude towards French-type bread by suggesting that consumers which perceived themselves as culturally inferior adopted the dominant group’s view on proper bread, ‘especially when talking to others perceived as belonging to the dominant group.’¹⁸ However, when social pressure from members of the dominant group was not exerted, consumers preferred their established ‘Arab’ bread as indicated by their choice of bread at festive and ritual meals and consumed the French baguette-type bread at ordinary meals primarily because of the convenience associated with purchasing ready-made bread.¹⁹

Alternatively, studies have shown that a food’s association with prestigious social groups can promote a relative preference for the respective food which, once internalized, can become expressed in consumption contexts in which social pressure is not exerted. Rigorous studies using an experimental research design have found that peer modeling of dietary behavior influences not only consumption but actual preference ratings as well. In a seminal study conducted by Birch and colleagues, preschool-age children that preferred one food over another had been found to increase their intake of the less preferred food,

¹⁶ Ibid., 203.

¹⁷ Ibid., 204-207.

¹⁸ Ibid., 203.

¹⁹ Ibid., 213.

quantitatively and in terms of the frequency of serving the food, when having lunch together with 3 or 4 other classmates that had opposite preferences.²⁰ Significantly, the subjects expressed an increased liking for the less preferred food in a preference assessment procedure at which the peers had not been present suggesting that the effects of social context on intake and preferences were internalized after a certain number of exposures and thereafter were independent of peer pressure. Similar increases in the consumption of a food associated with prestigious social groups beyond the influence of social pressure have been documented by anthropological and historical studies for tea, sugar, coffee, spices suggesting that consumers had come to appreciate these foods beyond their value in social interactions. In the case of ‘core’ foods, white wheat bread, formerly consumed almost exclusively by the upper social classes of a community, has been adopted by the lower classes at various points in time as a more preferred substitute for other everyday ‘core’ products such as porridges, grits and gruels, for breads prepared from ‘inferior’ grains (rye, spelt)²¹ or from wheat flours of darker nuances due to their higher extraction rates.²² This process of diffusion/imitation of prestigious dietary practices may have been similar to that observed by Gretel Pelto for bread in 1980s Mexico. Specifically, Gretel Pelto has shown how bread, traditionally associated in Mexico with the urban and rural elites, has been gradually incorporated in the dietary repertoire of the rural lower classes initially as a component of ceremonial and festive

²⁰ Leann L. Birch, “Effects of Peer Models’ Choices and Eating Behaviors on Preschoolers’ Food Preferences,” *Child Development* 51 (1980): 489-496.

²¹ Michael Wildt, “Promise of More. The Rhetoric of (Food) Consumption in a Society Searching for Itself: West Germany in the 1950s,” in *Food, Drink and Identity: Cooking, Eating and Drinking in Europe since the Middle Ages*, ed. Peter Scholliers (Oxford: Berg, 2001), 73.

²² Steven L. Kaplan, “Breadways,” *Food and Foodways: Explorations in the History and Culture of Human Nourishment* 7 (2010): 9-12.

meals visible to the community and subsequently as a more preferred alternative to the regular maize tortilla as a component of the distinguished, but intimate, Sunday meal.²³

The adoption of white wheat bread by the majority of Europeans as the ‘core’ food of their diets suggests that consumers appreciated this type of bread sufficiently enough to accept the payment of a uniformly higher price for its acquisition compared to the available alternatives. For consumers that had chosen white wheat bread over other types of bread, socio-cultural factors alone accounted for this preference given the minimal differences between the types of bread in terms of macronutrient and caloric content and the similar labor and technological inputs required for their preparation. Referring to this type of dietary changes, Massimo Montanari has argued that the ‘taste’ for a food is socially and culturally determined with consumers capable of learning to enjoy a food as a response to positively valued ideas and meanings associated with its consumption. Accordingly, Montanari has argued that although peasants may have appreciated their everyday fare consisting of ‘dark bread baked with cheaper grains such as rye, spelt, or orzo’ - a presumed ‘taste for the necessary’ resulting from their long habituation with these foods²⁴ - ‘they may always have wanted to eat white wheat bread like the lords and the city-dwellers.’²⁵ Alternatively, consumers may reject or object to the consumption of certain foods because of their negative social, cultural or health connotations. Gerd Spittler, for example, has explained the remarkable drop in the consumption of grits, gruels and porridges in 19th century Europe and the corresponding

²³ Gretel H. Pelto, “Social Class and Diet in Contemporary Mexico,” in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 518, 523-524, 530-531.

²⁴ Pierre Bourdieu, *Distinction: A Social Critique of the Judgment of Taste*, trans. Richard Nice (Cambridge: Harvard University Press, 1984), 178.

²⁵ Massimo Montanari, *Food is Culture*, trans. Albert Sonnenfeld (New York: Columbia University Press, 2006), 72.

rise in the consumption of bread by tentatively suggesting that rural consumers may have internalized the upper class's negative perspective on their diets and, therefore, may have themselves started to devalue their ordinary 'core' foods.²⁶ For such a devaluation process to occur, the author considers necessary that a social class exists which has the necessary resources and interest to develop dietary practices intended to showcase and promote its claim of cultural superiority over other social classes.²⁷ In Spittler comparative example, the Kel Ewey Tuareg that he had studied formed a classless community in which a 'haute' cuisine claiming superiority over 'ordinary' diets did not develop with the result that its members had continued to show a strong attachment and high regard for their established diets. By comparison, European consumers had been members of class-structured, hierarchical communities in which the upper classes had developed and adopted 'refined' dietary practices that acquired meaning in opposition to the dietary practices of the lower social classes. In this binary opposition, the daily fare of ordinary people had been increasingly redefined as 'coarse', 'monotonous', 'fit for animals'.²⁸

Despite these examples, it has to be nevertheless considered that a food's association with prestigious social groups does not influence automatically its consumption by the general population but that its effects depend on whether the consumers accept or reject this social groups' hegemony in the specific domain of dietary practices as well. For example, Pierre Bourdieu has argued that the French working classes of the 1970s had successfully challenged the legitimacy of the upper classes'

²⁶ Gerd Spittler, "In Praise of the Simple Meal," 39-40.

²⁷ *Ibid.*, 40

²⁸ *Ibid.*, 39. See also Elisabeth Meyer-Renschhausen, "The Porridge Debate," 185.

model of behavior in the field of culinary practices and dietary preferences but accepted it or implicitly recognized its superiority in almost all other areas of lifestyle.²⁹ Furthermore, studies using an experimental design have found that the efficiency of peer modeling of preferences depends both on certain characteristics of the modeler that distinguish him/her as relevant or ‘prestigious’ in relation to the subject and on certain characteristics of the subject. In this sense, Marinho has found that peers model enduringly only the food preferences of children who had not formed by the time of the study strong likes or dislikes for the modeled food.³⁰ This finding is consistent with the results of a study on the effects of informing consumers about the socially-approved consumption behavior in a novel eating situation.³¹ Specifically, this study has found that consumers conformed to social norms defining the appropriate quantitative intake but did not respond to information on the peers’ preferences for foods. The authors have interpreted these results by referring to Crutchfield’s distinction of conformity effects for judgments about matters of fact and for judgments about preferences.³² For judgments about matters of fact, the respondents recognize an external standard according to which their choices can be evaluated as ‘correct’ or ‘incorrect’ and for these types of responses large social conformity effects have been reported. By comparison, the respondents consider that judgments about preferences cannot be evaluated as ‘correct’ or ‘incorrect’ against an external standard since preferences are believed to be particular to each individual and for this type of responses social conformity effects have been found to be

²⁹ Pierre Bourdieu, *Distinction*, 179.

³⁰ H. Marinho, “Social Influence in the Formation of Enduring Preferences,” *The Journal of Abnormal and Social Psychology* 37 (1942): 448-468.

³¹ Patricia Pliner and Nikki Mann. “Influence of Social Norms and Palatability on Amount Consumed and Food Choice,” *Appetite* 42 (2004): 227-237.

³² *Ibid.*, 228.

weak.³³ Given this distinction, individual participants in this study may have responded to information about the quantities consumed by other participants because social-cultural conventions existed which required the adjustment of individual intake to that of fellow meal participants as the ‘correct’ behavior at public meals. Likewise, individual participants may not have responded to information about the peers’ food choices in accordance with a food culture in which food preferences are considered to be the province of individual tastes. Such a pattern of responses corresponds therefore to a specific set of conventions which characterize the modern Western food culture to which the participants belonged, but in those cultures in which strong social-cultural convention/norms define the appropriate meal choice and thereby transform food preferences and choices almost into matters of fact, social conformity in the domain of food preferences may be expected as well.

The available evidence indicates that rural residents had recognized and conformed to a social convention which required the consumption of bread at meals characterized by high visibility in the community. For example, a number of interviewees confirmed outside the structure of the oral questionnaire that they had considered appropriate and chose to consume bread at meals served at their urban workplace. In addition, data on grain consumption and the observations of contemporary researchers show that pre-collectivization rural households, including those owning limited plots of land, reserved quantities of wheat sufficient for the baking of bread at least for the festive meals occasioned by the major religious holidays.³⁴ During ordinary meals, however, the

³³ Richard S. Crutchfield, “Conformity and Character,” *American Psychologist* 10 (1955): 191-198.

³⁴ Th. Mărculescu-Dunăre, “Pescarii din Turtucaia [The Fisherman from Turtucaia],” 243-252 and Petre Lenghel-Izanu, “Alimentația și îmbrăcămintea în Bârsana, Maramureș [Dietary and Clothing Practices in

vast majority of these households continued to consume preponderantly mămăligă. In this respect, the rising share of consumption acts visible to a community which included regular consumers of bread that had accompanied the flow of rural labor into non-agricultural urban employment beginning with the 1950s (see Chapter 3, Section 3) may have contributed to an increased consumption of bread through the pressure put on rural residents to conform to socially appropriate norms of consumption. Despite this increase in the frequency of meals characterized by high visibility however, the majority of meals continued to be consumed outside of the communities' view throughout the studied period and therefore social pressure alone is not sufficient to explain the rural residents' thorough change to bread consumption. Rather, as in the case of other commodities associated with prestigious social groups, the information that bread was socially more valued than mămăligă may have contributed to an affective change in the direction of a relative preference for bread which could then become expressed at meal situations where social pressure was not exerted.

Besides the use of bread as a social marker and as a festive food, the assumption that rural residents ascribed to bread a privileged status relative to mămăligă is further confirmed by their use of bread as a special treat for children,³⁵ as a comfort food for the sick or to celebrate more mundane events such as a good sale in the market place. These

Bârsana, Maramureș],” *Sociologie Românească* 4 (April-June 1939): 271-275, Petru Bartoș, “Un sat expansiv, Căianul-Mic din Someș: Fața de azi și evoluția în ultimul secol [A Developing Village, Căianul-Mic from Someș: Its Present State and its Evolution over the Past Century],” *Sociologie Românească* 2 (September-October 1937): 431, Arhivele Naționale ale României. Fundația Culturală Regală-Centrală. 64/1936, 92 (Cuhea-Maramureș), Moise Enescu and Radenschi, A, “Contribuțiuni la studiul alimentației țăranului moldovean, cu observațiuni asupra regimului pelagroșilor,” *Revista de Igienă Socială* 7 (September 1937): 457.

³⁵ Moise Enescu, “Alimentația populației rurale din Moldova,” *Revista de Igienă Socială* 10 (Număr festiv cu ocazia împlinirii a 10 ani de apariție) (1940): 346, Arhivele Naționale ale României. Fundația Culturală Regală-Centrală. 64/1936 (Vol. 1), 127.

uses of bread, beyond expressing a pre-existing relative appreciation of bread consumption, were also instrumental in instilling into the members of the community the social judgment that bread was more valuable than mămăligă. Among these functions, the consumption of bread as a special treat or as an indulgence suggested by the consumers' use of the term cozonac or 'cake' when referring to bread was particularly efficient in conveying the information that bread was socially more valued than mămăligă given the straightforwardness of its informational structure and its widespread diffusion among the rural population. Specifically, 19 out of 84 respondents from 10 villages indicated outside the structure of the questionnaire that in their youth they referred to bread as cozonac to indicate, on the one hand, that its consumption was rare and, on the other hand, that its consumption was particularly valued with many respondents recounting the excitement and special preparation that accompanied the consumption of bread. These informational functions of dietary practices involving bread are particularly relevant since experimental and observational studies have shown that consumers form preferences not just in response to the physical qualities of foods but also to the socially relevant value judgments associated explicitly or implicitly with them.³⁶ For example, studies have found that presenting a food as a reward or indicating that it is positively valued by relevant peers increases preference ratings and consumption whereas requiring the consumption of a food as a necessary precondition for gaining access to an enjoyed activity decreases preference ratings. In the most carefully designed study, one of two foods had been used alternatively as a reward for the other with the result that the food in

³⁶ Joan Newman and Taylor, Alan, "Effect of a Means-End Contingency on Young Children's Food Preferences," *Journal of Experimental Child Psychology* 53 (1992): 200-216, Leann L. Birch et al., "The Influence of Social-Affective Context on the Formation of Children's Food Preferences," *Child Development* 51 (1980): 856-861 and Leann L. Birch et al., "Eating as the 'Means' Activity in a Contingency: Effects on Young Children's Food Preferences," *Child Development* 55 (1984): 431-439.

the reward condition was significantly more liked than the food in the instrumental condition. These findings have been interpreted to suggest that consumers adjusted their preferences to the information implicitly transmitted by the use of a food as a reward that that food is valuable in itself or valued by other peers. Alternatively, the consumers may have responded to the information that a food whose consumption requires additional external incentives is not valued for itself by social peers. Despite the clear results obtained by these studies, the fact that they have involved only children whose food preferences have been shown to be more sensitive to social information compared to adults' preferences cautions against indiscriminately assuming that social information influences food preferences uniformly across all age groups. Nevertheless, for bread and mămăligă, a probable age-dependent difference in the effectiveness of peer modeling is not very consequential since rural residents were socialized from their youth into food practices that strongly and clearly conveyed the information that bread was socially more valued than mămăligă.

This overview of the Socio-Cultural 'Prestige' model shows that it is reasonably well grounded theoretically and well supported by empirical evidence. Applied to the dietary change from mămăligă to wheaten bread, this model suggests that it may have been perceived positively by consumers as the information that bread is socially more valued than mămăligă is considered to have promoted a general relative preference for bread.

4.1.2 The Dietary Conservatism Model Predicting a Preference for Mămăligă

The Dietary Conservatism model has much to recommend it in terms of theoretical sophistication: food neophobia, the 'mere' exposure effect, evaluative

conditioning and the consumers' predilection to form norms and expectations concerning the appropriate 'core'-'fringe' combinations at specific meals based on their early dietary experiences suggest, separately or taken together, the possibility that rural residents may have switched to bread consumption despite a hedonic preference for mămăligă. Taken each separately, the neophobic reaction - which, according to researchers, is weak up to the age of 2 years old when the child incorporates solid foods into his/her regular diet, becomes stronger between the ages of 2 and 4 years and then declines gradually throughout adolescence and adulthood - forms the first barrier against the adoption of an unfamiliar food.³⁷ The 'mere' exposure theory postulates that preference for a stimulus increases with its repeated exposure and such effects have been confirmed for a variety of stimuli including novel and disliked foods.³⁸ The exact processes behind the 'mere' exposure effect have not yet been entirely elucidated but researchers generally agree that consumers initially rate unfamiliar foods low on liking tests and increase their ratings with repeated exposure to those foods subject to certain limits imposed by food 'boredom'. As a result, familiar foods have a comparative advantage over novel foods which can function as economically viable substitutes in the sense that even if a consumer is willing to try a new food, the initial impression is less favorable relative to the established food. The evaluative conditioning paradigm postulates that a conditioned stimulus (CS) may acquire a positive or negative valence in accordance with the valence

³⁷ Patricia Pliner and Sarah-Jeanne Salvy, "Food Neophobia in Humans," 83.

³⁸ For a general discussion and a demonstration of the 'mere' exposure effect with various stimuli see R. B. Zajonc, "Mere Exposure: A Gateway to the Subliminal," *Current Directions in Psychological Science* 10 (2001): 224-228. For a demonstration of the 'mere' exposure effects with novel or disliked foods see Patricia Pliner, "The Effects of Mere Exposure on Liking for Edible Substances," *Appetite: Journal for Intake Research* 3 (1982): 283-290, Stephanie Anzman-Frasca et al., "Repeated Exposure and Associative Conditioning Promote Preschool Children's Liking of Vegetables," *Appetite* 58 (2012): 543-553, Anantha Lakkakula et al., "Repeated Taste Exposure Increases Liking for Vegetables by Low-Income Elementary School Children," *Appetite* 55 (2010): 226-231.

of an unconditioned stimulus (US) with which it has been paired.³⁹ Such processes of evaluative conditioning have been considered to mediate the formation of comfort and nostalgia foods and have been proposed as an explanation for the ‘mere’ exposure effect with some authors having suggested that the repeated consumption of a food (CS) merely increases its chances of becoming associated with the post-ingestion consequences or positive social contexts of consumption (US-‘more’ exposure theory).⁴⁰ Overall, the process of evaluative conditioning does not invariably promote a preference for the established foods since the valence these foods may acquire depend on how the context of their consumption is perceived and, in this sense, childhood or early adolescence may be experienced either negatively or positively. Nevertheless, because consumers frequently resist the introduction of new foods given their neophobic predispositions and the uneven impact of the ‘mere’ exposure process, the contexts in which dietary changes take place usually presuppose the exertion of strong pressures on consumers which generally contributes to a negative mood that may get transferred to the new food. Finally, consumers form expectations concerning, and submit to social norms regulating, the proper or improper context, time and meal structure for consuming a food with the result that the same food may be liked under one set of circumstances but disliked under another. The available evidence shows that ‘core’ foods have not been the object of

³⁹ For a review of the literature on evaluating conditioning covering all types of conditioned and unconditioned stimuli, see Wilhelm Hofmann et al. “Evaluative Conditioning in Humans: A Meta-Analysis,” *Psychological Bulletin* 136 (2010): 390 and Jan de Houwer and Sarah Thomas, “Associative Learning of Likes and Dislikes: A Review of 25 Years of Research on Human Evaluative Conditioning,” *Psychological Bulletin* 6 (2001): 853-869. For a demonstration of how positive states/moods can become associated with foods through evaluative conditioning and how such processes influence liking ratings, see Johanna Kuenzel et al., “Conditioning Unfamiliar and Familiar Flavours to Specific Positive Emotions,” *Food Quality and Preference* 21 (2010): 1105-1107 and Johanna Kuenzel et al., “Conditioning Specific Positive States to Unfamiliar Flavours Influences Flavour Liking,” *Food Quality and Preference* 22 (2011): 397-403.

⁴⁰ David J. Mela, “Development and Acquisition of Food Likes,” in *Food, People and Society: A European Perspective of Consumers’ Food Choices*, ed. L.J. Frewer et al. (Berlin: Springer, 2001), 9-21.

strong taboos similar to those proscribing various types of meat consumption⁴¹ but studies have found that consumers entertain softer norms that define the appropriate consumption of ‘core’-‘fringe’ combinations and that they adjust their preference rating depending on whether the actual eating situation conforms or not to the upheld norm. For example, Birch and colleagues have found that both adults and children change their relative preferences defined hedonically for foods which they have classified as ‘breakfast foods’ or ‘dinner foods’ depending on whether these are consumed at breakfast or at lunch.⁴² Cardello and colleagues and Kramer and colleagues have failed to replicate such findings but nonetheless have also reported strong correlations between consumers’ evaluations of how appropriate is the consumption of a food in specific contexts and their expected liking/disliking for it and, accordingly, have suggested that the perceived appropriateness of a food is more important when it comes to selecting a particular meal rather than in influencing consumers’ liking of an actually served meal.⁴³ The authors have suggested that such norms are learned by consumers at a very young age through repeated experiences with the food in specific contexts or that, sometimes, they are formalized into explicit rules of consumption and handed down to the younger generation, but, regardless of the exact mechanism through which dietary habits and expectations are formed, they generally help reinforce the established dietary practices. Taken altogether, the effects of an early socialization into a food culture combine to form a vicious circle supporting dietary conservatism as the consumers’ neophobic

⁴¹ Paul Rozin et al., “Disgust,” in *Towards a Psychology of Food Choice*, ed. Paul Rozin (Bruxelles: Institut Danone, 1998), 138-139.

⁴² Leann L. Birch et al., “Time of Day Influences Food Acceptability,” *Appetite* 5 (1984): 109-116.

⁴³ Armand V. Cardello, “Predictors of Food Acceptance, Consumption and Satisfaction in Specific Eating Situations,” *Food Quality and Preference* 11 (2000): 205 and F. Matthew Framer et al., “Effects of Time of Day and Appropriateness on Food Intake and Hedonic Ratings at Morning and Midday,” *Appetite* 18 (1992): 3.

predispositions reduce the initial appeal of a novel food, the pressure needed to soften their reticence reflects negatively on the new food given evaluative conditioning processes and the presence of dietary habits and of well-defined expectations concerning proper 'core'-'fringe' combinations increases consumers' resistance towards unfamiliar consumption practices while at the same time it can lead to a compartmentalization of dietary practices with the result that if a new food is accommodated within a particular 'core'-'fringe' combination, this acceptance does not automatically generalize to other combinations.

The Dietary Conservatism Model is less well established when it comes to the empirical evidence that may either support or disqualify it. Specifically, food scientists and consumer behavior analysts have readily recognized the theoretical appeal of the assumption that early formed dietary practices and food preferences remain stable throughout one's life but have repeatedly underlined that any such relationship between early- and later-life food habits has yet to be demonstrated.⁴⁴ The paucity of relevant data has been cited as the main obstacle for verifying this relationship given the difficulty of designing appropriate studies that would compare the food preferences defined hedonically of a sufficiently large number of consumers at different points in time. Moreover, the selected consumers should have had the opportunity to change their dietary practices so that, ideally, their continued preference for their established diets reflects an informed choice based on liking rather than the rigidity of a dietary

⁴⁴ Emma Patterson et al., "The Tracking of Dietary Intakes of Children and Adolescents in Sweden over Six Years: the European Youth Heart Study," *International Journal of Behavioral Nutrition and Physical Activity* 6 (2009): 1-2 *International Journal of Behavioral Nutrition and Physical Activity* 2009, 6:91 doi:10.1186/1479-5868-6-91; V. Mikkilä et al., "Consistent Dietary Patterns Identified from Childhood to Adulthood: The Cardiovascular Risk in Young Finns Study," *British Journal of Nutrition* 93 (2005): 923-924.

configuration circumscribed by economic factors coupled with the ‘mere’ exposure effect. In this sense, in a review of the literature in which I have used the first two criteria presented above as a standard for including studies in my analysis, I have been able to identify only 1 study which analyzed the long-term stability of food preferences defined hedonically, 1 study which analyzed food preferences defined broadly and a number of studies which analyzed the long-term tracking of dietary intake. Furthermore, study design limitations and pragmatic methodological choices diminish even the contribution of these studies to an adequate understanding of long-term stability of early-formed dietary preferences. For example, Skinner and colleagues have compared the foods liked, disliked and never tasted by each one of the 70 children surveyed successively at ages 2-3, 4 and 8 and have found a high average level of consistency of 84.5% between the first and third surveys.⁴⁵ However, the authors’ selection of only three broad categories for classifying and comparing food preferences may have been responsible for the remarkably high level of stability observed in this study given that highly aggregated categories fail to pick up less dramatic but nonetheless significant changes in the consumers’ relative preferences for foods classified within the same category.

Nicklaus and her colleagues have managed to overcome these limitations and in many respects their study is impressively rigorous: the food preferences of 341 respondents have been assessed in early childhood (between 2 and 3 years old) through recording of unrestricted food choices over an average of 109 lunches and in childhood (between 4 and 12 years old), adolescence (between 13 and 16 years old) and early adulthood (between 17 and 22 years old) through food preference questionnaires for three

⁴⁵ Jean D. Skinner et al., “Children’s Food Preferences: A Longitudinal Analysis,” *Journal of the American Dietetic Association* 102 (2002): 1641.

subgroups from the sample; the food preferences have been measured on numerical scales and the scores have been standardized to permit an analysis of stability and change in terms of relative preferences; and the analysis had been run by 5 broad and 18 fine categories which increased its level of sensitivity.⁴⁶ Nevertheless, the authors' finding that early food preferences correlated modestly with food preferences during early adulthood may not represent adequately the actual strength of the relationship considering that the 'preference' measured in the study had evolved between dietary assessments from an indicator of hedonic liking to a composite indicator which increasingly reflected health, weight and moral concerns. The authors themselves have indicated that such concerns may explain the gender specific development of food preferences in which girls had comparatively increased their preference ratings of vegetables but have decreased their preference ratings for meat products consistent with other findings from the literature.⁴⁷ In addition, the procedure of comparing food preferences elicited through different methods may have further contributed to a reduction of the observed degree of stability of early formed food preferences. In particular, the construction of a hierarchy of food preferences at the ages of 2-3 years old based on the subjects' unrestrained selection of foods may have produced misleading results since this method of assessment privileges certain types of foods over others.⁴⁸ For instance, a consumer's choice of bread most commonly counted only once in the preference assessment formula given the marked similarity between available types of

⁴⁶ Sophie Nicklaus et al., "A Prospective Study of Food Preferences in Childhood," *Food Quality and Preference* 15 (2004): 805-818.

⁴⁷ *Ibid.*, 813, 815.

⁴⁸ *Ibid.*, 806. More precisely, the relative preferences have been assessed by means of averaging and comparing the ratios of the number of times a specific food had been selected to the total number of foods selected at that occasion across the entire range of lunches at which that specific food has been available

bread and the practice of consuming only one type at a single lunch. By comparison, a consumer could choose two products from relatively heterogeneous food categories such as chicken or beef and, as a result, his/her choices contributed twice to the number of selections of that particular category but only once to the number of lunches against which the frequency of choices for that category was evaluated. Furthermore, bread is rarely consumed alone in the Western culinary tradition meaning that it had a maximum level of selection relative to the total number of foods at lunch of 50% but standalone foods had a maximum level of 100% and, therefore, it is not surprising that such foods as cheese tarts, cheese savory cakes and quiches had the highest relative frequency of consumption.⁴⁹ In this sense, the progression of bread in the hierarchy of food preferences from the 7th place out of the 18 fine categories of foods in early childhood to the 1st place in early adulthood⁵⁰ may be more apparent than real and, overall, food preferences may have been more stable than what the concordance indicators presented by the authors suggest.

Finally, the majority of studies which have analyzed the long-term persistence of dietary patterns and the tracking of nutrient intake have reported moderate to modest levels of stability⁵¹ with only two studies having found strong consistency in respondents'

⁴⁹ Ibid., 807-808.

⁵⁰ Ibid., 810.

⁵¹ Emma Patterson et al., "The Tracking of Dietary Intakes of Children and Adolescents in Sweden over Six Years", Amelia A. Lake et al., "Longitudinal Change in Food Habits between Adolescence (11-12 Years) and Adulthood (32-33 Years): The ASH30 Study," *Journal of Public Health* 28 (2006): 10-16, Femke P.C. Sijtsma et al., "Longitudinal Trends in Diet and Effects of Sex, Race, and Education on Dietary Quality Score Change: The Coronary Artery Risk Development in Young Adults Study," *The American Journal of Clinical Nutrition* 95 (2012): 580-586, Deborah Cardomone et al., "Longitudinal Nutrient Intake Patterns of U.S. Adolescent Women: The Penn State Young Women's Health Study," *Journal of Adolescent Health* 26 (2000): 194-204. For a review of the most important studies on the tracking of dietary intake of specific food groups (dairy products) or of macro and micronutrients, see Samantha Madruga et al., "Tracking of Dietary Patterns from Childhood to Adolescence," *Revista de Saude Publica* 46 (2012): 1-9. For a review of the most important studies on the stability of various aspects of early

adherence over 8 and 21 years to broad dietary patterns (healthy vs. unhealthy⁵² and traditional vs. health-conscious⁵³) identified through factor analysis. Nevertheless, the results of these studies cannot disqualify the assumption that early socialization into a food culture conditions later-life food preferences because dietary configurations are shaped by multiple factors besides liking or even the assumption that dietary patterns are generally stable because methodological problems diminish the validity of the observed results in this respect. Most importantly, the majority of studies have compared an individual's dietary intake and food practices at different points in time by collecting data covering a short observation period at each assessment and, because of this arrangement, the common day-to-day or short-term variation in an individual's dietary practices had been picked up and interpreted as evidence of dietary change. Over and above these shortcomings, the reviewed studies have examined a strong version of the dietary conservatism model according to which nutrient intake or individual food consumption defined quantitatively or in terms of frequency of consumption has been expected to remain relatively stable. This specific focus has not been the result of a directed decision from the part of the authors of the studies but rather the result of a practical adaptation to the type of collected data which has been intended first and foremost to support an analysis of the relationship between dietary intake and diseases and for which purpose quantitative measures are the most appropriate. It is my opinion, however, that the theoretical arguments support a softer version of the dietary conservatism model

formed dietary practices including food preferences see Sophie Nicklaus and Eloise Remy, "Early Origins of Overeating: Tracking Between Early Food Habits and Later Eating Patterns," *Current Obesity Reports* 2 (2013): 179-184.

⁵² Alissa E. Frémeaux et al., "Consistency of Children's Dietary Choices: Annual Repeat Measures from 5 to 13 Years (EarlyBird 49)," *British Journal of Nutrition* 106 (2011): 725-731.

⁵³ V. Mikkilä et al., "Consistent Dietary Patterns Identified from Childhood to Adulthood," 923-931.

according to which meal structure and consumption of individual dishes should remain more or less stable but, within these boundaries, new foods or modified foods (low fat cream vs. high fat cream for example) can be introduced if they are integrated or processed into familiar forms. This softer version of the dietary conservatism model is supported by the high degree of consistency observed for broad dietary patterns and by the marked stability of consumption practices involving groups of products such as the 'core' foods which are consumed regularly, are less affected overall by occasional consumption of atypical meals given that they are consumed in considerable quantities and are less susceptible to modifications in their main ingredients given the unique characteristics of each starch product (suitable vs. unsuitable for baking) and their high salience for consumers.

Historical, sociological and anthropological studies of dietary changes are in a comparatively better position to provide evidence for or against the assumption that early formed dietary practices condition long-term food preferences although the requirement that they evaluate the relative liking ratings of specifically those individuals which had switched from one food to another limits the number of relevant studies. The fulfillment of this requirement is necessary because the dietary conservatism model is capable of accommodating generational modifications in food preferences in the sense that consumers who have adopted a novel food or dish for economic, convenience or social prestige/pressure reasons subsequently socialize their offspring into the new culinary culture which thereby becomes the established culinary culture. Consequently, Stephen Menell's claim that the voluminous historical record on social groups which have changed their food likes and dislikes effectively disqualifies the assumption that 'people

like [to eat] what they are used to, and conversely dislike the unfamiliar'⁵⁴ may not be entirely warranted since the Dietary Conservatism model is compatible with radically different configurations of food preferences across several generations. Moreover, researchers have reported several cases of consumers which had replaced one 'core' food with another primarily for economic reasons but which, nonetheless, had readily expressed their preference for the former 'core' food even decades after the dietary change. For example, Moore and Vaughan have shown that agricultural producers from the Northern Province of Zambia, the same area studied by Audrey Richards in the 1930s, had gradually incorporated the more versatile cassava into their diets to the point that it had completely replaced millet in the preparation of bwali - the thick porridge whose centrality in Bemba's diets had so much impressed Sidney Mintz - although they had continued to prefer bwali made from millet because of its 'texture and taste'.⁵⁵ Similarly, Achim von Oppen has shown that many agricultural producers from the Upper Zambezi area which had replaced various cereals with the more reliable cassava as the main ingredient for nshima (porridge) still regarded 'a mixture with grains as the real thing'.⁵⁶ For Central Kordofan, Sudan, Joachim Theis has found that rural consumers had come to depend preponderantly on sorghum produced outside of the region for the preparation of their 'core' food, asida (porridge), as they had intensified the production of cash crops such as sesame and groundnuts at the expense of millet, the former staple

⁵⁴ Stephen Mennell, *All Manners of Food: Eating and Taste in England and France from Middle Ages to the Present* (Oxford: Basil Blackwell, 1985), 4-5.

⁵⁵ Henrietta L. Moore and Megan Vaughan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990* (Portsmouth: University of Zambia Press, 1994), 63-64, 80.

⁵⁶ Achim von Oppen, "Cassava, 'The Lazy Man's Food'? Indigenous Agricultural Innovation and Dietary Change in Northwestern Zambia (ca. 1650-1970)," in *Changing Food Habits: Case Studies from Africa, South America and Europe*, ed. Carola Lentz (Amsterdam: Harwood Academic Publishers, 1999), 47, 50-52.

crop, but that they still preferred millet over sorghum ‘because of its taste and the higher nutritional value they ascribe to [it].’⁵⁷ These examples describe consumers’ perceptions of substitutions involving the main ingredient of a ‘core’ food which was prepared through otherwise unchanged cooking processes and, therefore, their resilient preference for the ‘original’ variant of the ‘core’ food is particularly noteworthy given that the new food was not completely unfamiliar. In instances in which a new main ingredient and different preparation processes (baking vs. boiling) produced a markedly unfamiliar ‘core’ food, the consumers did sometimes decidedly reject the new food as, for example, Katarzyna Cwiertka has shown in the case of the Japanese Navy and Army’s attempts to substitute in the military rations of recruits the familiar rice and barley foods with the largely unfamiliar bread⁵⁸ and as several authors have argued in the case of potato’s diffusion in the European mainland. Significantly, the majority of European consumers had repeatedly resisted the adoption of potato cultivation even though the new crop produced higher yields than any other grain crops per unit of labor and land, quantitatively and in terms of calories, had the advantage of being less susceptible to requisitioning and purposeful destruction from the part of invading armies and despite the sustained efforts of authorities to promote its cultivation through technical advice and material incentives.⁵⁹ Nevertheless, an unfamiliar ‘core’ food may not necessarily elicit such strong reactions of rejection from the part of consumers with Shirley Lindenbaum having shown how ‘almost all’ urban and rural residents from 1980s Bangladesh had

⁵⁷ Joachim Theis, “Changing Patterns of Food Consumption in Central Kordofan, Sudan,” in *Changing Food Habits: Case Studies from Africa, South America and Europe*, ed. Carola Lentz (Amsterdam: Harwood Academic Publishers, 1999), 95, 101-102, 106 (for bread and wheat flour).

⁵⁸ Katarzyna J. Cwiertka, *Modern Japanese Diet: Food, Power and National Identity* (London: Reaktion Books, 2006), 69, 73, 77.

⁵⁹ Ellen Messer, “Three Centuries of Changing European Tastes for Potatoes,” in *Food Preferences and Taste: Continuity and Change*, ed. Helen Macbeth (Oxford: Berghahn Books, 1997), 101-120.

incorporated bread into their diets as a breakfast food and, additionally, as the regular serving at evening meals in the case of less well-to-do villagers and at lunch meals in the case of professional and commercial urbanites.⁶⁰ However, according to the author, the majority of the population had continued to hedonically prefer rice over wheat but, despite this preference, the poorer villagers had increased their intake of bread because wheat was less expensive than rice while the urban middle classes had chosen to consume the lunch meal with bread because of convenience and physiological reasons. This succinct presentation of cases in which consumers had maintained their preference defined hedonically for the displaced version of the 'core' food has not been intended to be exhaustive but merely to indicate that empirical evidence exists which supports the dietary conservatism model and, by implication, the assumption that rural residents had continued to prefer mămăligă over bread during and after the dietary change.

The arguments presented above in support of the assumption that rural residents may have increased their consumption of bread despite their preference for mămăligă have been generally theoretical and based on analogies with similar cases of dietary changes but a complete discussion of the conditions which might have contributed to a continued preference for mămăligă has to include an examination of the culturally specific norms and rules of consumption concerning appropriate 'core'-'fringe' combinations at the time of the dietary change. Such an analysis is complicated, however, by the fact that, most commonly, norms concerning the appropriate/expected 'core'-'fringe' combinations are not explicitly formulated into a comprehensive system but are

⁶⁰ Shirley Lindenbaum, "Loaves and Fishes in Bangladesh," in *Food and Evolution. Toward a Theory of Human Food Habits*, ed. Marvin Harris and Eric B. Ross (Philadelphia: Temple University Press, 1987), 433, 435.

implicitly recognized and adhered to in everyday consumption practices. In addition, there is limited information presented directly by rural residents from the period of the dietary change or before on potentially explicit norms of consuming bread or mămăligă with specific ‘fringe’ dishes. Consequently, my analysis draws on informal discussions with the participants to my oral questionnaire concerning their past and present dietary practices and rules of consumption and on indirect sources of information such as medical descriptions of peasants’ dietary practices and general accounts of the broader culinary practices of the Romanian population. In using such indirect evidence to infer past consumption norms, my analysis makes rather strong assumptions about the relationship between present and past consumption norms and about the homogeneity of consumption rules involving mămăligă across social classes but a cross-check review of the ‘fringe’ dishes identified by the various sources as preferred with mămăligă has shown a high degree of agreement and therefore suggests that the obtained results may be valid to a considerable extent.

An analysis of the ‘core’-‘fringe’ combinations from roughly 650 meals served to the members of the student teams performing community work in villages during the late 1930s provides an insight into the social elites’ understanding of what ‘fringe’ dishes were appropriate to consume with mămăligă and, conversely, what ‘core’ foods were appropriate to consume with particular ‘fringe’ dishes.⁶¹ Specifically, in 57 out of roughly 650 meals, mămăligă had performed the function of ‘core’ food in combination with the following ‘fringe’ dishes: dairy products (milk, sour cream, cheese, sour cream and

⁶¹ Arhivele Naționale ale României. Fundațiile Culturale Regale- Centrală. Files 85/1938, 90/1938, 102-105, 50-60, 114-131, 62/1939, 1-325, 75/1937, 367-390, 74/1937, 205-281. The data refer to the meals served to the members of the students teams dispatched in the villages Cusuiul de Vale, Durostor County in 1938, Largu and Valea Cânepii, Buzău County in 1937 and to the participants to the Training School (Școala de Echipieri) attached to the Social Service organization.

cheese, and butter) in 40 meals (70%), stews (predominantly chicken stews) in 12 meals (21%), sauerkraut/sarmale in 3 meals (5.3%) and fried eggs in 2 meals (3.5%). Alternatively, cottage cheese, when part of a hot dish, had been served with mămăligă in 33 out of 88 cases (37%), meat stews had been served in 12 out of 35 cases (34%), sarmale and sauerkraut in 3 out of 27 cases (11%) and fried eggs/omelet in 2 out of 19 cases (10.5%). The meal configurations presented above may reflect to a certain extent the idiosyncrasies of the cooking styles of each one of the 4 kitchen masters responsible with preparing the meals despite their shared training in household management schools and also their limited possibilities to construct every time an ideal meal given limited personnel, unavailable cooking equipment and competing claims on their time and energy. Especially because of labor restrictions, the consumption of mămăligă may have been below the desired level since bread could be purchased ready-made from bakeries while pastas - which accounted for the remaining 55 meals when cottage cheese had been consumed as part of a hot dish - could be prepared more easily. Keeping in mind these qualifications, I consider indicative of existing social norms of consumption the fact that food caterers who could have more easily provided a more convenient ‘core’ food to consumers had nonetheless served particular ‘fringe’ dishes, some of them with considerable frequency, together with the more labor and time consuming mămăligă. Furthermore, such rules of consumption were not specific to the four reviewed institutions as the preference for combining, for instance, dairy products with mămăligă has been attested for other consumers which had the option of consuming bread such as social elites,⁶² rural residents from provinces where bread had been consumed

⁶² Gheorghe Crăiniceanu, *Igiena Țeranului Român*, 235.

preponderantly⁶³ and present-day rural residents. Similarly, the consumption of cabbage-based ‘fringe’ dishes with mămăligă represents today the ideal combination for rural residents from the relevant region and may have been the norm for social elites at least from the beginning of the 20th century.⁶⁴ Finally, the combination of fried eggs and omelets with mămăligă is presently highly preferred by rural residents and the practice of combining meat stews with mămăligă is tentatively supported by un-elicited responses to my questionnaire on current food preferences. This consistency across social classes between past and present norms for consuming certain ‘fringe’ dishes with mămăligă can be explained by assuming either that the social elites had maintained or appropriated rules of consumption prevalent in the rural world or that rural residents had adopted such norms following their experiences with institutional diets during military training, for example. In either case, it is possible that rural residents from the relevant region had recognized and upheld norms defining the appropriateness of consuming, at least, dairy products, cabbage-based products and fried eggs/omelet with mămăligă and, consequently, that the rise in bread consumption may have went against consumers’ hedonic preferences and may have even contributed to an altogether reduction in the frequency of consumption of these ‘fringe’ dishes.

This overview of the Dietary Conservatism Model shows that it is well grounded theoretically and, at least, partially supported by empirical evidence. Applied to the dietary change from mămăligă to wheaten bread, this model suggests that it may have been perceived negatively by consumers by predicting, maximally, that consumers which

⁶³ Ioan Claudiu, *Alimentația Poporului Român în cadrul Antropogeografiei și Istoriei Economice* (Bucharest: Fundația pentru Literatură și Artă ‘Regele Carol II’, 1939), 126 and Arhivele Naționale ale României. Fundațiile Culturale Regale- Centrală, 59/1936, 70.

⁶⁴ Gheorghe Crăiniceanu, *Igiena Țeranului Român*, 235.

have been early socialized into dietary practices centered on mămăligă had maintained their preference for the established ‘core’ food in spite of their increased consumption of bread and, minimally, that consumers had continued to prefer a number of ‘fringe’ dishes with mămăligă in recognition of social norms which defined such combinations as appropriate. The merits of both of these predictions will be evaluated in Section 4.2.1 against data on the rural residents’ current preferences for bread or mămăligă with six commonly served ‘fringe’ dishes and in relation to the predictions of the calorie-based conditioning model which are presented in the following section.

4.1.3 The Calorie-Based Conditioning Model Predicting a Preference for Bread and Mămăligă with Particular Dishes

The energy density of foods has been documented to influence the formation of preferences through the process of energy-based or calorie-based conditioning. Calorie-based conditioning is a variant of Flavor-Consequence or Flavor-Nutrient learning, a model inspired by Pavlovian conditioning theories which explains the formation of food preferences and aversions through the association of certain features of the food (conditioned stimulus-CS), usually but not necessarily its flavor, with the positive or negative post-ingestion consequences of its consumption (unconditioned stimulus-US).⁶⁵ Specifically in the case of calorie-based conditioning, given two foods which have different energy densities, the energy-denser food may become more liked or preferred by association with the positive post-ingestion consequences of consuming more calories subject to certain limitations related to the energy need state of the consumer and the

⁶⁵ For a review of the literature on Flavor-Consequence learning see Martin R. Yeomans, “The Role of Learning in Development of Food Preferences,” in *The Psychology of Food Choice*, ed. Richard Shepherd and Monique Raats (CABI Publishing: Wallingford, UK, 2006), 93-113.

calorie content of the food.⁶⁶ Given that bread provided 40% more calories per unit of weight compared to mămăligă at the time of the dietary change (see the Introductory Chapter), energy-based conditioning emerges as a potentially important factor in the formation of relative preferences for one or the other ‘core’ food with specific ‘fringe’ dishes. This section discusses the empirical evidence supporting Flavor-Nutrient learning and Calorie-Based conditioning, the circumstances under which higher energy density conditions a preference or aversion for the delivering food and the applicability of findings from highly simplified consumption trials in artificial settings to complex meal situations in their ordinary settings, aspects necessary to be clarified in order to achieve a proper understanding of whether and how calorie-based conditioning might have influenced consumers’ preferences for bread or mămăligă with specific ‘fringe’ foods.

Flavor-Nutrient learning has been demonstrated conclusively in controlled experiments on animals using a rigorous research protocol but also in laboratory studies involving human consumers, in controlled studies in naturalistic settings, and has been documented by observational studies that have indicated a strong correlation between the energy-density and the preference ratings of a variety of foodstuffs. The studies focusing on the role of Flavor-Nutrient learning in the formation of food preferences have used a variety of subjectively liked stimuli to condition a change in liking, acceptance or consumption of the target foods including caffeine,⁶⁷ salt, protein and carbohydrates. Of particular relevance for my argument, foods having higher energy densities following the addition of starch - the majority of carbohydrates are present in this form in cereals - have

⁶⁶ Sirous Mobini et al. “Effect of Hunger State on Flavour Pleasantness Conditioning at Home: Flavour-Nutrient Learning vs. Flavour-Flavour Learning,” *Appetite* 48 (2007): 20-28.

⁶⁷ Martin R. Yeomans et al., “Effect of Caffeine-Deprivation on Liking for a Non-Caffeinated Drink,” *Appetite* 39 (2002): 35-42.

been more preferred compared to starch-free foods indicating that starch is an efficient reinforcing stimulus (US) in Flavor-Nutrient learning. Finally, studies on successful energy-based conditioning have used a variety of foods (CS) including soup,⁶⁸ yoghurt,⁶⁹ juice/sorbet,⁷⁰ iced tea,⁷¹ fruit and chocolate desserts⁷² that have been manipulated to display higher or lower energy densities.

The surveyed studies on calorie-based conditioning have measured either the change in consumers' liking for the flavor associated with the higher energy content relative to the change in their liking for the same or another flavor having a lower energy content or the consumers' relative preferences for the high- or low-energy flavor as part of a choice test. Regardless of the type of measurement used, all the surveyed studies have found that consumers preferred/liked by a statistically significant, modest to moderate margin the flavor associated with the higher energy content provided that they were in the appropriate need state (hungry). In contrast, consumers that were sated during the conditioning trials did not prefer/like by a statistically significant margin the high-energy food and in certain studies have even expressed a slight aversion towards it. Further findings that protein,⁷³ caffeine⁷⁴ and salt condition⁷⁵ a preference for the foods

⁶⁸ D.A. Booth et al., "Starch Content of Ordinary Foods Associatively Conditions Human Appetite and Satiation, Indexed by Intake and Eating Pleasantness of Starch-Paired Flavours," *Appetite: Journal for Intake Research* 3 (1982), 163-184.

⁶⁹ K.M. Appleton et al., "Evidence of a Role for Conditioning in the Development of Liking for Flavours in Humans in Everyday Life," *Physiology & Behavior* 87 (2006): 478-486 and Elizabeth H. Zandstra and Wael El-Deredy, "Effects of Energy Conditioning on Food Preferences and Choice," *Appetite* 57 (2011): 45-49.

⁷⁰ Martin R. Yeomans et al., "Differential Hedonic, Sensory and Behavioral Changes Associated with Flavor-Nutrient and Flavor-Flavor Learning," *Physiology & Behavior* 93 (2008): 798-806.

⁷¹ Sirous Mobini et al., "Effect of Hunger State on Flavour Pleasantness Conditioning at Home: Flavour-Nutrient Learning vs. Flavour-Flavour Learning," *Appetite* 48 (2007): 20-28.

⁷² Jeffrey M. Brunstrom and Gemma L. Mitchell, "Flavor-Nutrient Learning in Restrained and Unrestrained Eaters," *Physiology and Behavior* 90 (2007): 133-141.

⁷³ E. L. Gibson et al., "Disguised Protein in Lunch after Low-Protein Breakfast Conditions Food-Flavor Preferences Dependent on recent Lack of Protein Intake," *Physiology & Behavior* 58 (1995): 363-371.

delivering them in deprived consumers but have no effect on preference ratings or even condition an aversion for the same foods in sated consumers have led to a re-conceptualization of Flavor-Nutrient learning as a context-dependent process. In addition, two recent studies have found that calorie-based⁷⁶ and salt-based⁷⁷ conditionings do not influence preference ratings consistently across the entire range of calorie or salt levels/contents. Rather, the relationship between calorie-based conditioning and preference ratings has an inverted U shape depending on the total energy load delivered by a food with calorie-based conditioning producing minimal effects on preferences at low calorie loads, maximum effects at intermediate calorie loads and no effects or slight aversion at high calorie loads.⁷⁸ Calorie-based conditioning does not produce, therefore, invariable effects on the consumers' preferences for energy-denser foods but its effects depend on the energy need state of the consumers (low vs. high) and on the caloric load of foods which might be lower, equal or higher relative to a variable optimum level.

The application of the findings on Flavor-Nutrient learning in the interpretation of the consumers' past and present preferences for bread or mămăligă may be restricted to a certain degree given the surveyed studies' research protocol which created an exceptional, artificial context of consumption compared to everyday meals.⁷⁹ For

⁷⁴ Martin R. Yeomans et al., "Acquisition and Extinction of Flavour Preferences Conditioned by Caffeine in Humans," *Appetite* 35 (2000): 131-141.

⁷⁵ N. Wald and Leshem, M., "Salt Conditions a Flavour Preference or Aversion after Exercise Depending on NaCl Dose and Sweat Loss," *Appetite* 40 (2003): 277-284.

⁷⁶ Martin R. Yeomans et al., "Effects of Energy Density and Portion Size on Development of Acquired Flavour Liking and Learned Satiety," *Appetite* 52 (2009): 469-478.

⁷⁷ N. Wald and M. Leshem, "Salt Conditions a Flavour Preference or Aversion after Exercise Depending on NaCl Dose and Sweat Loss," 277-284.

⁷⁸ Martin R. Yeomans, "Effects of Energy Density and Portion Size on Development of Acquired Flavour Liking and Learned Satiety," 477.

⁷⁹ For an interesting debate on the external validity (applicability of a study's findings outside its specific setting) of research on human eating behavior that has low ecological validity (defined by simplified,

instance, each studied food had been presented individually outside the meal context and separated from the ingestion of other foods by an interval of time considered long enough to prevent contamination effects. Bread and mămăligă, however, have been consumed in combination with ‘fringe’ dishes within a meal structure that usually included in the case of the six ‘fringe’ dishes discussed in this Chapter at least one other course. Within a complex meal structure, the possibility exists that associations between a food’s characteristics and the post-ingestion consequences of its consumption might form less readily as opposed to when the food is presented individually and isolated from other food components. Furthermore, consumers had been presented during the conditioning phase with equal quantities of low and high energy foods and, therefore, they had been unable to compensate for the low energy content of a particular food by increasing consumption. In real life settings, meal participants have/had the possibility of consuming greater quantities of mămăligă-‘fringe’ combinations relative to bread-‘fringe’ combinations and to reduce thereby the difference in caloric intake available to condition a relative preference for the energy-denser bread-‘fringe’ combination. The extent to which consumers adjust their intake according to the energy content of foods is still debated in the literature with the majority of studies arguing that intake depends more on the weight and volume of foods rather than on their energy content.⁸⁰ The implication is that individuals consume at meals a constant amount of food regardless of its nutrient content but most of the studies have focused on short-term regulation of intake and, consequently, cannot rule out the possibility of long-term adjustment/learning. In

artificial settings) see Herbert L. Meiselman, “Methodology and Theory in Human Eating Research,” *Appetite* 19 (1992): 49-55 and the subsequent comments and replies from the same issue of the Journal.

⁸⁰ For a review of these studies see Barbara J. Rolls, “The Relationship between Dietary Energy Density and Energy Intake,” *Physiology & Behavior* 97 (2009): 609-615.

addition, a number of studies have found evidence of partial regulation of intake in line with energy content even after a limited number of exposures to the respective foods.⁸¹ To assess indirectly and tentatively the characteristics that influence intake in the case of bread and mămăligă (energy content vs. weight and volume), a question has been presented to rural respondents asking which of the two ‘core’ foods has/had a longer lasting satiating effect according to their ordinary meal experiences. The results show that significantly more consumers consider that mămăligă satiates for shorter periods compared to bread, a finding that may be interpreted to suggest that certain aspects of appetite such as the initiation of a meal are sensitive to the body’s nutrient requirements while other aspects such as intake during the meal are less sensitive to the nutrient content of the foods. Overall, however, the findings of observational studies that the preference ratings of foods are strongly correlated with their energy densities indicates that the Flavor-Nutrient type of learning documented in the controlled studies contributes to the formation of food preferences in everyday contexts as well.⁸²

This review of the Calorie-based Conditioning model shows that is well supported by empirical evidence and well articulated theoretically. Applied to the dietary change from mămăligă to bread, the Calorie-based conditioning model suggests that consumers might have had mixed reactions to the change by postulating that they may have had simultaneously preferred the energy denser bread with low calorie ‘fringe’ dishes and the less energy dense mămăligă with high calorie ‘fringe’ dishes.

⁸¹ Katherine M. Appleton et al., “Age and Experience Predict Accurate Short-Term Energy Compensation in Adults,” *Appetite* 56 (2011): 602-606 and Joanne E. Cecil et al., “Energy Intakes of Children after Preloads: Adjustment, not Compensation,” *The American Journal of Clinical Nutrition* 82 (2005): 302-308.

⁸² E. L. Gibson and J. Wardle, “Energy Density Predicts Preferences for Fruit and Vegetables in 4-Year-Old Children,” *Appetite* 41 (2003), 97-98 and Martin R. Yeomans, “The Role of Learning in Development of Food Preferences,” 97.

4.2 Inductive Analysis of Food Preferences at the Time of the Dietary Change

4.2.1 The 2013 Dietary Survey on the Preference for Bread or Mămăligă with Six Commonly Served Dishes: The selection of ‘fringe’-dishes, data collection and interpretation and results

The consumers’ relative preferences for bread and mămăligă today have been ascertained in combination with the following six dishes: dried beans soup, vegetable soup, bean stew, omelet/fried eggs, steamed sauerkraut (with and without meat) and sarmale. The evaluation of consumers’ preferences for bread and mămăligă in relation to a number of ‘fringe’ dishes is appropriate considering the interrelations between food components within a ‘core’-‘fringe’ dietary pattern. Summarizing the more detailed discussion from the Introductory Chapter, ‘core’ foods were only exceptionally consumed by themselves but most commonly represented the stable component in pairings with a variety of ‘fringe’ dishes in every-day meals. While the ‘core’ foods were served in largely unmodified form, the ‘fringe’ foods came in various forms and had diverse physical characteristics and different macronutrient and caloric compositions due to the wide range of food sources used for their preparation. Given their functional interdependence, with the ‘core’ food representing, quantitatively, the larger part of the meal and with the ‘fringe’ foods adding the flavor and diversity which facilitated the ingestion of the large quantities of the ‘core’ food, I have considered appropriate to inquire about how well bread or mămăligă combined with specific ‘fringe’ dishes. In particular, acknowledging the marked differences that existed between the various ‘fringe’ dishes on the one hand and between bread and mămăligă on the other which could have potentially affected how each ‘core’-‘fringe’ pairing might have been perceived by consumers, I have selected the above mentioned six accompanying foods to

assure adequate variation on factors that have been considered to contribute to the formation of meal/dish preferences such as energy density, physical appearance and textural properties, and the strength of the cultural norms that prescribed their consumption in combination with bread or mămăligă. Specifically, I have considered appropriate to evaluate the consumers' preferences for bread and mămăligă in combination with 'fringe' dishes both low in energy density (dried beans soup, vegetable soup and steamed sauerkraut) and high in energy density (beans stew, omelet/fried eggs and sarmale). Considering the predictions of the Calorie-based conditioning model, the expectation has been that consumption of bread would be preferred more frequently when the 'fringe' dishes have low energy densities but that the effects of the higher energy density of bread would be masked or would be negative when the 'fringe' dishes have high energy densities resulting in meals with high caloric content. The selected six dishes have also different physical and textural properties to enable an assessment of the possible influence of these factors on the formation of preferences for 'core'-'fringe' combinations considering the differences between 'core' foods discussed in the Introductory Chapter. Specifically, the six dishes can be positioned on a continuum from mostly liquid (the soups) to semi-liquid (bean stew) and to mostly solid forms (steamed sauerkraut, sarmale and omelet/fried eggs). In terms of preliminary expectations for preferred 'core-fringe' combinations based on textural and physical properties, I have considered likely that each 'core' food would be relatively more preferred with certain dishes and relatively less preferred with others. Beyond this minimal expectation, I have considered preferences for specific combinations to be unpredictable (difficult to anticipate from the outside) as culturally- or socially-determined rules of combination are

usually internalized through everyday practice without being formalized into a comprehensive system. For combinations such as sarmale or sauerkraut with mămăligă for which cultural norms defining their appropriateness are asserted and reinforced at public meals occasioned by weddings, funerals and more minor celebrations and which are readily recognized by rural residents, I have expected a widespread preference.

In addition to all these reasons, the six ‘fringe’ dishes have been selected because by themselves or by the type of ‘fringe’ dish they represent in terms of textural and physical properties, they had been the ‘fringe’ foods most frequently consumed by rural residents before and after the dietary change. At a general level of classification, the six dishes were consumed predominantly at lunch and less frequently at dinner, their preparation required the expenditure of time and labor and they were normally served while hot or warm. According to the 1957 dietary survey, soups and cooked second courses had been consumed on average on 198 and 167 days respectively.⁸³ Among cooked second courses, dishes prepared from beans had been consumed on 89 days, those prepared using cabbage had been consumed on 62 days and eggs had been consumed on 78 days.⁸⁴ Among soups, the meatless types prepared from vegetables and legumes had been consumed on 153 days per year. This structure of the daily menus corresponded to a diet centered on mămăligă which had a frequency of consumption of 231 days per year as the ‘core’ food at all the meals of the day and of 62 days per year as the ‘core’ food at two out of three meals of the day.⁸⁵ Additional data on the dietary patterns of 381 rural residents from Bălțești, Prahova County and Bratovoești, Dolj County from 1984 indicate

⁸³ I. Ardelean. and A. Sporn, “Particularitățile alimentației în mediul rural din regiunile București, Argeș, Oltenia, Dobrogea și Ploiești,” 84-86.

⁸⁴ Ibid.

⁸⁵ Ibid.

a similar structure of the daily menus within a diet centered on bread.⁸⁶ At this date, 80% of respondents declared that they had consumed only bread during the period of observation while just 4% declared that they had consumed only mămăligă.⁸⁷ Concerning the consumption of broad types of ‘fringe’ foods, all respondents declared that they had consumed at least one hot or warm cooked dish every day with 51% having consumed two and 39% having consumed three such dishes every day. Moreover, 65% of respondents indicated that lunch, which for 97% of all respondents represented the main meal of the day, included two courses suggesting that the consumption of soup, which was usually the opening course at lunch, was relatively frequent.⁸⁸ All this evidence suggests that the six selected dishes, by themselves and through the types of dishes they represent, accounted at the time of the dietary change for a large share of the ‘fringe’ foods with which the rural residents had to choose to consume mămăligă or bread.

4.2.1.1 Data Collection and Interpretation

The data on the consumers’ relative preferences for bread or mămăligă with the selected six ‘fringe’ dishes have been collected through a set of questions included in the second part of the face-to-face questionnaire described in Chapter 1. The first six questions asked respondents to indicate whether they had consumed regularly each ‘fringe’ dish with mămăligă at any point during their lives. A negative answer contributed to the category ‘Not consumed’ for the respective combination which has been used in the interpretation of the rural residents’ perception of the rising availability of industrially-produced bread but which has been excluded from the analysis of relative preferences given that the respondent could not make an informed choice since he/she

⁸⁶ Iulian Mincu, *Impactul Om-Alimentație*, 323-330.

⁸⁷ *Ibid.*, 327-328.

⁸⁸ *Ibid.*

had not tried the respective combination. An affirmative answer was followed by a question requiring respondents to indicate their preference for bread and/or mămăligă with the respective dish. A brief statement which preceded this second set of questions defined the consumption context: lunch, at home, with both foods available without the need to purchase or prepare them. The ready availability of both foods has been emphasized in an attempt to control for factors that could influence the consumers' choice of a specific combination other than a liking for it. Each response in this section has contributed to one of the categories 'Preferred with mămăligă', 'Preferred with bread' and 'Without any preference'.

The statistical analysis (95% Confidence Intervals) of the distribution of responses among the category 'Preferred with mămăligă' on the one hand and the categories 'Preferred with bread', 'Without any Preference' and 'Not consumed' on the other hand has been performed to estimate the percentage of rural residents that nowadays prefer to consume each of the 'fringe' dishes with mămăligă independent of factors related to cost or convenience. The results on present-day preferences for bread and mămăligă have provided the starting point for an inductive assessment of the rural residents' relative preferences at the time of the dietary change. Grounded in theories on the formation and modification of dietary preferences, I have considered that a respondent's relative preference for mămăligă today indicates with high probability a similar preference at the time of the dietary change. However, a respondent's relative preference for bread or equal preference for bread and mămăligă today is more difficult to interpret since such dispositions may have been determined by a variety of factors. Furthermore, the statistical analysis (95% Confidence Intervals) of the distribution of

responses of rural residents who had consumed overwhelmingly mămăligă in their youth between the category ‘Preferred with mămăligă’ on the one hand and the categories ‘Preferred with bread’ and ‘Without any Preference’ has been performed to estimate the percentage of relevant rural residents who still prefer to consume each of the reviewed ‘fringe’ dishes with mămăligă. A more detailed content analysis of the questionnaire data has enabled for this purpose the identification of 32 respondents who indicated that they had regularly consumed bread at most on one day per week or who maintained that bread had been viewed as cozonac in their families or that it had been consumed only on special occasions as opposed to respondents who indicated merely that they had consumed mămăligă more frequently than bread (19 respondents) or bread more frequently than mămăligă (17 respondents). An analysis restricted only to those rural residents who had consumed overwhelmingly mămăligă in their youth has been preferred since it permits a more clear-cut evaluation of the assumption that an early socialization into a food culture conditions an enduring preference for the established dietary practices of that culture by minimizing the risk that the respondents had not been early and thoroughly familiarized with the reviewed mămăligă-‘fringe’ combinations.

The statistical significance of the observed differences in the respondents’ preferences for combinations of ‘fringe’ dishes with mămăligă has been evaluated using the McNemar exact test for pairs of the six ‘fringe’ dishes.⁸⁹ The McNemar exact test calculates the probability of obtaining the ratio from the sample or higher of consumers who preferred one dish with mămăligă and the other dish with bread relative to

⁸⁹ Morten W. Fagerland et al., “The McNemar Test for Binary Matched-Pairs Data: Mid-p and Asymptotic are Better than Exact Conditional,” *BMC Medical Research Methodology* 13 (2013) doi:10.1186/1471-2288-13-91. See the Appendix to this Chapter for a detailed presentation of the McNemar test and of the distribution of preferences for pairs of ‘fringe’ dishes.

consumers who had the opposite preferences if, in fact, there is no difference in preferences for the two dishes in the population. Furthermore, through a second set of McNemar exact tests, I have integrated the information from the ‘Without any preference’ category into the analysis of relative preferences. This time the McNemar exact tests have been performed on the ratio of consumers who preferred one dish with mămăligă or equally with both ‘core’ foods and the other dish with bread relative to consumers who had the opposite preferences. I have considered appropriate to include the information from the ‘Without any preference’ category on the grounds that a consumer who had not indicated a preference for any of the two ‘core’ foods in combination with one dish but who had indicated a specific preference for one of the ‘core’ foods in combination with another dish had expressed a relative preference. However, I have considered appropriate to run two separate analyses since the ‘Without any preference’ option expresses, nonetheless, a preference of lower magnitude compared to the ‘Preferred with bread’ and ‘Preferred with mămăligă’ options. The results from the application of the McNemar test have informed my interpretation of the characteristics of ‘fringe’ dishes that support a more prevalent (relative) preference for mămăligă or bread as the accompanying ‘core’ food.

4.2.1.2 Results

Figure 4.1 (see the Appendix to this Chapter) presents the percentage of respondents who preferred to consume each of the six ‘fringe’ dishes with mămăligă. Conversely, the remaining percentage of respondents preferred to consume each of the six ‘fringe’ dishes with bread, did not indicate a particular preference for one of the two ‘core’ foods in combination with the respective dishes or had not consumed regularly the

dishes with mămăligă at any point during their lives.⁹⁰ Similarly, Figure 4.2 presents the percentages of respondents who had consumed overwhelmingly mămăligă in their youth and who currently prefer each of the six ‘fringe’ dishes with mămăligă or bread.⁹¹ The error bars from the graphs define the 95% Confidence Intervals that are consistent with the data from the sample. Making allowance for such possible sampling errors, sarmale and sauerkraut are nonetheless highly likely to be preferred with mămăligă by the vast majority of rural residents from Argeş County, omelet in combination with mămăligă by a considerable number of rural residents, bean stew in combination with mămăligă by a minority of rural residents and the dried beans and vegetable soups in combination with mămăligă by slightly more than one fifth of rural residents under the most optimistic estimates. An identical hierarchy of the six ‘fringe’ dishes emerges if the consumers who have not regularly consumed them with mămăligă are excluded from the analysis and the appropriate McNemar test is performed to estimate the probability that the observed differences from the sample data are the result of sampling errors. Specifically, among rural residents that preferred to consume the compared ‘fringe’ dishes with different ‘core’ foods, significantly more respondents preferred to consume sarmale and sauerkraut with mămăligă than omelet, bean stew, dried beans soup and vegetable soup with mămăligă, significantly more respondents preferred to consume omelet than bean stew and the soups with mămăligă and significantly more respondents preferred to consume

⁹⁰ Figure 4.1 summarizes the consumption practices and preferences of 53 respondents in the case of the vegetable soup, of 55 respondents in the case of the dried beans soup, of 59 respondents in the case of the dried beans stew, of 62 respondents in the case of the omelet/fried eggs dish, of 61 respondents in the case of sarmale and of 50 respondents in the case of steamed sauerkraut.

⁹¹ Figure 4.2 summarizes the preferences of 16 respondents in the case of the vegetable soup, of 22 respondents in the case of the dried beans soup, of 20 respondents in the case of the dried beans stew, of 29 respondents in the case of the omelet/fried eggs dish, of 30 respondents in the case of sarmale and of 24 respondents in the case of steamed sauerkraut.

bean stew than the soups with mămăligă. No statistically significant difference existed between the rural residents' preference for sarmale and sauerkraut and between the dried beans and vegetable soups with mămăligă.

The first conclusion based on the observed results is that a predominant preference for bread with certain dishes can emerge in the case of consumers that had been early socialized into a dietary pattern centered on mămăligă despite the consumers' strong attachment to their established 'core' food (see the Introductory Chapter and Section 4.1.2 of this Chapter). The implication of this finding is that the dietary change may have been promoted by a preference for bread that went beyond the economic opportunity of the shift or its convenience aspects to include 'cultural' factors and an appreciation of the physiological qualities of bread.

The second conclusion is that the observed pattern of relative preferences for bread or mămăligă with the six 'fringe' dishes is partly consistent with a Flavor-Nutrient learning model for the formation of food preferences (see Figure 4.3 for an evaluation of the predictions of the Calorie-based Conditioning model relative to the distribution of the respondents' preferences). Specifically, the respondents' preferences for bread in combination with low calorie dishes such as dried beans and vegetable soups can be interpreted within the framework of the Flavor-Nutrient learning model to indicate that the higher energy density of bread had conditioned a relative preference given a caloric load of the bread-'fringe' combination that was associated with positive post-ingestion effects. Alternatively, the respondents' preference for mămăligă in combination with high calorie dishes such as omelet and sarmale can be interpreted to indicate that the bread-'fringe' combination has a caloric load that exceeds the optimum level beyond which the

higher energy density of bread has no effect on relative preferences or conditions an aversion. Further discussion with rural residents beyond the immediate scope of the questionnaire provides additional evidence for the calorie-based conditioning model as consumers preferred to match low-calorie dishes with the energy-denser bread more generally. In particular, a number of rural residents indicated that when bread had been available in limited quantities, they used to consume it predominantly on fasting days, a practice justified by the consumers' belief that bread satiated better than mămăligă with typical fast 'fringe' dishes.

The third conclusion is that the Flavor-Nutrient learning model is not sufficient to explain the pattern of relative preferences for bread and mămăligă since the consumers' preferences for bread with steamed sauerkraut (with and without meat) and for mămăligă with bean stew do not conform to its predictions. Most conspicuously, steamed meatless sauerkraut, a dish having the lowest caloric content among the six 'fringe' dishes, and steamed sauerkraut with meat, a dish having average caloric content, are preferred with mămăligă by the same proportion of rural residents that prefer sarmale, the dish with the highest caloric content, with mămăligă. Further comparative analysis on pairs of the six 'fringe' dishes using the McNemar test indicates that among rural residents that preferred each of the compared dishes with different 'core' foods, considerably more rural residents preferred with mămăligă the meatless steamed sauerkraut rather than the dishes having high energy content (omelet and bean stew) or low energy content (dried beans and vegetable soups). In addition, a considerably higher percentage of rural residents preferred omelet with mămăligă compared to bean stew with mămăligă although the difference in caloric content between the two dishes was very probably not large. All this

evidence suggests that factors such as cultural norms and information on the social value of a food are capable of overriding the effects of calorie-based conditioning and, accordingly, to promote preferences for intermediate calorie-dense ‘core’-‘fringe’ combinations or to produce preferences for ‘core’ foods having significantly different energy-densities with ‘fringe’ foods that do not differ considerably in energy-density.

4.2.2 Current Preferences as Indicators of Past Preferences: Controlling for post-dietary change developments in food preferences

The most likely processes that may have affected the consumers’ preferences for bread and mămăligă after the dietary change involve the ‘mere’ exposure effect and developments in the socio-cultural norms prescribing the appropriate ‘core’ food for certain ‘fringe’ dishes. The ‘mere’ exposure theory postulates that preference for a food increases with its repeated consumption and, accordingly, the observed rising consumption of bread, even if motivated initially by strictly economic and convenience factors, may have gradually contributed to the formation of a relative preference for bread with particular ‘fringe’ dishes. However, the studies on the ‘mere’ exposure effect have found considerable increases in liking by the fifth exposure to a food⁹² and although the majority of them have not examined the effects beyond the 15th exposure, it is believed that increments in liking plateau after a certain level. The implication of these findings for the interpretation of consumers’ perceptions of the dietary change is that even if the ‘mere’ exposure effect is responsible for the current preference for bread with certain ‘fringe’ dishes, these preferences would have become dominant soon after the dietary change although the possible requirement that the exposure has to be to the ‘core’-

⁹² Stephanie Anzman-Frasca et al., “Repeated Exposures and Associative Conditioning Promote Preschool Children’s Liking of Vegetables,” *Appetite* 58 (2012): 543-553 and Andrea Maier et al., “Effects of Repeated Exposure on Acceptance of Initially Disliked Vegetables in 7-month Old Infants,” *Food Quality and Preference* 18 (2007): 1023-1032.

‘fringe’ combination rather than simply to bread would have necessarily prolonged the time needed for a general preference for bread to become established.

The possible construction of socio-cultural norms subsequent to the moment of the dietary change recommending the consumption of mămăligă or bread with specific ‘fringe’ dishes may have contributed to a relative valorization of the consumption of each ‘core’ food with the respective ‘fringe’ dishes. For instance, the recognized norm of consuming cabbage-based products with mămăligă, which today is reaffirmed and reinforced at festive and commemorative meals and which I believe explains the respondents’ current marked preferences for these combinations, may have developed after the dietary change. Alternatively, implicit norms prescribing the consumption of soups with bread may have similarly developed after the dietary change or, at least, the regular practice of combining them since the dietary change may have predisposed consumers to answer to the relative preference questions in accordance with their current habits of consuming soups only with bread. However pertinent these assumptions may appear on theoretical grounds, the sources reviewed in this Chapter conclusively show that the socio-cultural norms which today prescribe the consumption of cabbage-based products and dairy products with mămăligă have actually been in place before the time of the dietary change with presumably similar effects on consumers’ preferences for such ‘core’-‘fringe’ combinations. Moreover, it is significant that the observed pattern of current preferences fits well, although not perfectly, with the predictions of the calorie-based conditioning model whose underlying processes were very likely operational at the time of the dietary change as well. Suggestive in this sense, written and oral sources confirm that pre-dietary change consumers preferred to combine low-calories ‘fringe’

dishes with the scarce energy denser bread and that they had the practice of consuming more frequently the energy denser turtă during periods of fasting.⁹³

Conclusions

First and foremost, the findings presented in this Chapter reaffirm the complexity and multidimensionality of dietary patterns and food preferences, an argument clearly demonstrated by the failure of all the reviewed models to account completely for the diversity of the consumers' current preferences for specific 'core'-'fringe' combinations. Secondly, the findings demonstrate that the majority of rural residents presently and, most likely, at the time of the dietary change had preferred hedonically both bread and mămăligă depending on the accompanying 'fringe' dishes. The general relevance of these findings for the current debates on the influence of an early socialization into a food culture on later-life food preferences and on dietary changes involving 'core' foods will be discussed in detail in the Concluding part of my dissertation and in this Section I intend to discuss only their specific contribution for approximating an optimum balance for mămăligă and bread consumption from a hedonic point of view at the time of the dietary change.

The finding that the majority of rural residents prefer to consume half of the selected 'fringe' dishes with bread and half with mămăligă does not justify the assumption that rural residents had preferred to consume both 'core' foods at an equal number of meals. Specifically, the six selected 'fringe' dishes, although consumed most frequently in their respective categories, fail to cover a considerable number of meals. At these meals, rural residents had consumed 'fringe' dishes with which they had preferred

⁹³ Ioan Claudiu, *Alimentația Poporului Român în cadrul Antropogeografiei și Istoriei Economice* (Bucharest: Fundația pentru Literatură și Artă 'Regele Carol II', 1939), 125-126.

to consume mămăligă more frequently than bread according to the information from the pilot phase of the oral questionnaire and from un-elicited responses during the interviews. More precisely, an overwhelming proportion of rural residents had declared that they prefer to consume dairy products (milk, sour cream, yoghurt, cottage cheese) with mămăligă, a preference readily confirmed by various authors and by the consumption data presented in Section 2 of this Chapter for several time periods. In addition, rural residents had specified that they prefer to consume meat stews (chicken stews), meat steaks and fried fish with mămăligă, a pattern of preferences consistent with the predictions of the Calorie-based Conditioning model. By comparison, rural residents had indicated only one additional broad category of ‘fringe’ dishes (cold meat cuts) with which they preferred to consume bread, a preference related to the practical aspect of consuming such products under the form sandwiches at the workplace, a task for which bread was more suitable than the more crumbling mămăligă. Finally, an analysis limited to 5 respondents of consumers’ preferences for the 6 ‘fringe’ dishes with turtă indicates that the majority of rural residents currently prefer to consume bean stew with turtă rather than with bread or mămăligă which leaves open the possibility that rural residents at the time of the dietary change had preferred to consume 4 of the 6 reviewed ‘fringe’ dishes with cereal products other than bread. All this evidence strongly suggests that the post-dietary change configuration centered on bread deviated more from an optimum ‘core’ component configuration defined hedonically than the pre-dietary change configuration centered on maize-based products or on mămăligă alone. Having finally reached an understanding of consumers’ preferences defined hedonically, it is necessary to reconsider the findings from the previous Chapters in light of this information.

GENERAL CONCLUSIONS

The discussion has progressed sufficiently by now to permit the adoption of a more comprehensive, less analytical approach in which the individual pieces of information can be assembled into an interpretation of the dietary change. Furthermore, sufficient information is now available to permit an evaluation of the theories and models presented in the Introductory Chapter concerning the influence of an early socialization into a culinary culture on later-life food preferences, on the consumers' perceptions from the perspective of hedonic preferences of dietary changes involving 'core' foods and on the consumers' experiences during socialism. The interpretation can fruitfully begin from the finding that rural residents currently prefer, and most likely had preferred at the time of the dietary change, a number of 'fringe' dishes with bread. The implication of this finding is that the dietary change had matched consumers' preferences up to a certain extent and that rural residents may have had desired to consume bread more frequently during the period before the dietary change (1900-1960) but did not do so because of the greater financial costs associated with consuming bread. More generally, the finding that rural residents who have consumed *mămăligă* preponderantly during their childhood and youth currently prefer certain 'fringe' dishes with bread conclusively demonstrates the inadequacy of a strong version of the dietary conservatism model according to which an early socialization into a food culture conditions a permanent preference for the dietary practices of the respective culture. The rejection of the dietary conservatism model leaves room for optimism that unhealthy dietary practices can be modified without impinging on consumers' hedonic preferences although the associated finding that consumers most

commonly learn to prefer novel foods that have higher energy densities than the corresponding established foods at a specific caloric load is less encouraging since one of the most pressing challenges today is to reduce total caloric intake and, in this respect, the substitution of high-energy dense foods for low-energy dense foods is not the solution.

While rural residents currently prefer low-energy dense liquid and semi-liquid ‘fringe’ dishes with bread, they nonetheless continue to prefer a wide range of high-energy dense semi-liquid and mostly solid ‘fringe’ dishes with mămăligă even after decades of predominant consumption of bread. As the available evidence suggests that current preferences for mămăligă are representative for past preferences, the implication of my finding is that the dietary change had gone beyond consumers’ preferences and that rural residents may have had desired to consume mămăligă more frequently during the period 1960-1980 but did not do so because of a complex of factors that are discussed below. The dietary change emerges, therefore, as a development that has involved simultaneously both a frustration and fulfillment of consumers’ hedonic preferences, in the aggregate and, for a substantial number of cases, at the individual level as well. More generally, the finding that rural residents continue to prefer a considerable number of ‘fringe’ dishes with mămăligă conclusively demonstrates that the information that bread was socially more valued than mămăligă, information transmitted implicitly and explicitly by various consumption practices, did not translate into a generalized preference for bread. The failure of both the Socio-Cultural ‘Prestige’ and Dietary Conservatism models with their strong predictions to account for the current configuration of consumers’ preferences and the better fit provided by the Calorie-based Conditioning model and by the softer version of the Dietary Conservatism model with

their flexible predictions concerning consumers' preferences for specific 'core'-'fringe' combinations underlines the need to move beyond binary approaches in interpreting the consumers' perceptions of, at least, dietary changes involving 'core' foods. In this sense, I argue that the European-wide transition from grits, gruels and porridges to bread, which has been commonly interpreted either positively by suggesting that rural residents had finally managed to emulate the consumption practices of the upper classes or negatively by suggesting that rural residents had traded hedonic preferences for convenience or economic benefits, may have been perceived ambivalently by consumers. Under such a scenario, a proper interpretation of the dietary change requires for each established 'core' food and major culinary culture a careful weighing of how much the pre- and post-dietary change configurations deviated from an optimum configuration. In the specific case of the transition from mămăligă to bread, the available evidence indicates that the post-dietary change configuration centered on bread fitted less well with consumers' hedonic preferences than the pre-dietary change configuration centered on mămăligă.

The observation that rural residents may have hedonically preferred to consume mămăligă more frequently than they did during the 1970s does not preclude the possibility that they had nevertheless preferred in the broader sense of the term to consume bread at the observed frequency since other aspects such as the convenience of consuming ready-made bread and the opportunity to conform to socio-cultural norms prescribing bread consumption at public meals were appreciated by them. Alternatively, a number of rural residents did not have the possibility to choose to consume mămăligă even if they preferred it overall to bread given the deficiencies in the availability of maize supplies associated with a non-market, centrally-planned distribution system and an

agricultural production system dominated by Agricultural Cooperatives and State Farms while part of rural residents may have considered necessary to sell the more financially profitable maize in order to increase their meager incomes. In this regard, the evidence presented in the previous sections on the availability of maize supplies support the assumption that the majority of rural residents had access to sufficient quantities of maize to consume mămăligă whenever they preferred it. Using the information on the rural residents' preferences for specific 'fringe' dishes with bread or mămăligă to qualify further the data on the availability of maize supplies, an even greater proportion of rural residents are identified as having had access to sufficient quantities of maize to consume mămăligă whenever they hedonically preferred it since the optimum balance of consuming one or the other 'core' food was certainly less extreme than the ratio of one meal centered on bread to 6 meals centered on mămăligă used in my calculations. All this evidence conclusively indicates, therefore, that only a minority of rural residents did not have the option to consume the preferred 'core' foodstuff with the territories corresponding to Gorj and Vâlcea Counties including relatively more rural residents in such a position as maize availability was lower in these areas and as the consumption of maize under the form of turtă was more frequent. Among rural residents who had the choice to consume mămăligă whenever they desired it, an unknown proportion may have found appealing the option to sell maize and consume the less preferred bread at certain meals in order to profit financially from the prevailing price configuration for cereal products in the same manner that rural residents from the period 1900-1940 have opted to sell wheat or rye and consume the less preferred mămăligă at certain meals in order to increase their incomes. However, the poor development of the peasant free market

suggests that the proportion of rural residents who were motivated by financial reasons to consume bread more frequently than hedonically preferred was small and, in addition, was declining during the 1960s and 1970s as the distribution of bread types that did not permit the remunerative sale of maize increased and as the growth of rural incomes reduced in relative terms the financial implications of consuming one or the other ‘core’ food. Considering all this evidence, my conclusion is that rural residents who had the choice to consume the more preferred *mămăligă* had nonetheless opted to consume bread for convenience reasons or to conform to socio-cultural norms especially since the other function of purchasing industrially-produced bread of increasing the fodder supplies of rural residents was not inherently incompatible with the consumption of *mămăligă*. Specifically, rural residents had the choice to use purchased industrially-produced bread as animal feed and to keep the corresponding maize supplies for their own consumption and the archival evidence suggests that at least some rural residents did not consider culturally inappropriate to use bread for feeding livestock. The dietary change emerges, therefore, as an improvement in the overall standard of living of the majority of rural residents and only secondarily and marginally as an instance of forced substitution involving those rural residents who grudgingly accepted to increase their bread consumption simply because they did not have access to sufficient quantities of *mămăligă* or because they found financially inconvenient to consume the available quantities.

The evaluation of the rising availability of industrially-produced bread as a positive development in rural lifestyles has performed an analytical separation of the relevant process from other related processes that may have influenced the rural residents’ perception of the dietary change and that certainly had diminished the extent to

which the socialist regime had capitalized politically from one of its more successful interventions in the rural world. Most importantly, a chronological analysis of the rising availability of industrially-produced bread in rural areas shows that the first major increase in the distribution of bread had been performed while largely maintaining the existing output configuration but that the second major increase had been paralleled by a noticeable shift towards more expensive bread varieties and that the subsequent period of stabilization of per rural resident distribution levels had seen a pronounced shift towards more expensive varieties. The result has been that rural residents who first encountered industrially-produced bread at an average price of 2.8 lei per kilogram had to pay 3.72 lei only several years later and the archival evidence suggests that the consumers had not considered justified the payment of the price difference in view of the additional characteristics of the more expensive products. The rural residents had perceived, therefore, the change in the output mix as an increase in the cost they had to bear in order to procure a product they had come to expect to be readily available at a fixed price, a source of dissatisfaction that had not been completely muted by the rise in monetary incomes and which had fueled overt protests from the part of consumers against political authorities as expected given a political-economic system which automatically politicized economic performance.

Beyond the specific focus of my dissertation, my analysis has been intended to illustrate the benefits and difficulties of adopting a consumer-centered, less normative approach in reevaluating consumers' experiences during socialism. The benefits of adopting such an approach for a valid depiction of consumers' experiences are, I believe, evident: the rising availability of industrially-produced bread, a development found to

have signified a major change in the lifestyles of at least 1.2 million rural residents, would have been otherwise missed through the application of standard approaches that are informed by the local elites' or 'Western' consumption norms. It is my belief that the application of the anthropological approach has the capacity to capture other such unconventional consumption practices that may represent better than the usual selection of durable goods discussed in the literature the horizon of expectation of large segments of consumers during socialism. At the same time, I consider that my analysis is a sober reminder of the difficulty of reaching the consumers - the goal of the anthropological approach - in the non-market, centrally-planned version of socialism in which the data on prices and volume of sales transmit limited information on the consumers' relative valuations of products. In the absence of information conveyed by market operations, the informational basis for an evaluation of consumers' perceptions during socialism can be amassed by sampling a wide variety of sources including sources typical for non-market economic systems (queuing, petitions, movements of protest, instances of friction between the authorities responsible with the production and sale of products) and sources typical for historical research (personal testimonies of consumers, written and oral). Nevertheless, these alternative sources of information can only partially compensate for the lack of data at the level of detail and relevance that is provided by time series of commercial operations in free-market economic systems. I find significant in this regard that even for a change in lifestyles involving products for which consumers' evaluations at the time of the change can be retrieved relatively accurately, I have not been able to confidently conclude that it had represented overall a positive change from a standard of living perspective considering the indirect movement of prices discussed above. And yet,

a reevaluation of consumers' appreciations of developments from a sufficiently large array of consumption practices considering the socialist regime's uneven performance in supplying goods across consumption sectors may be necessary for a proper understanding of the trajectory of socialist regimes.

Appendix to Chapter 1

Figure 1. 1 Percentage of Total Cereal Consumption Needs covered by Available Quantities of Wheat/Rye Cereals

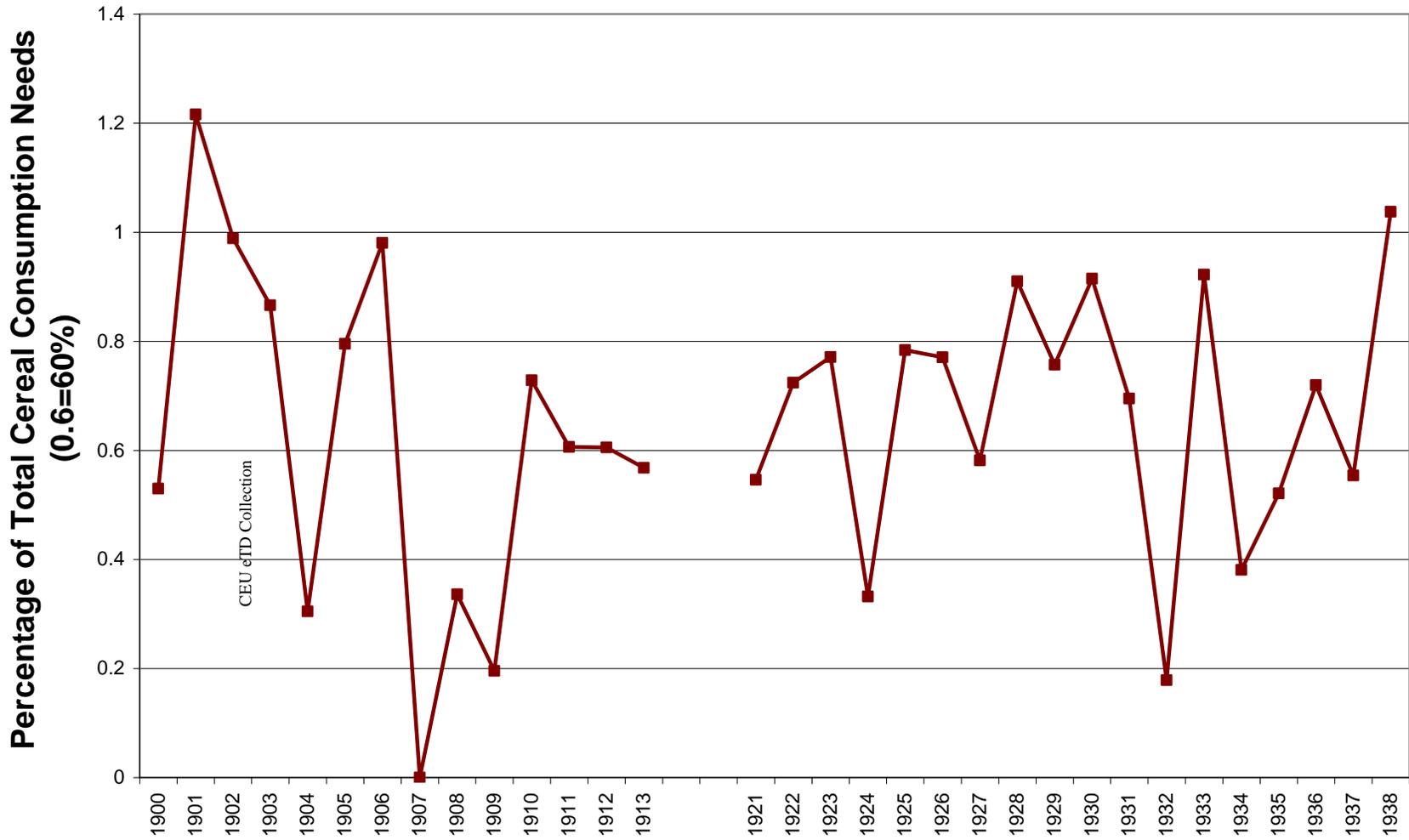


Figure 1. 2 Percentage of Total Cereal Consumption Needs evaluated at 162.5 kg per Year covered by Distribution of Industrially-Produced Bread, 1948-1975

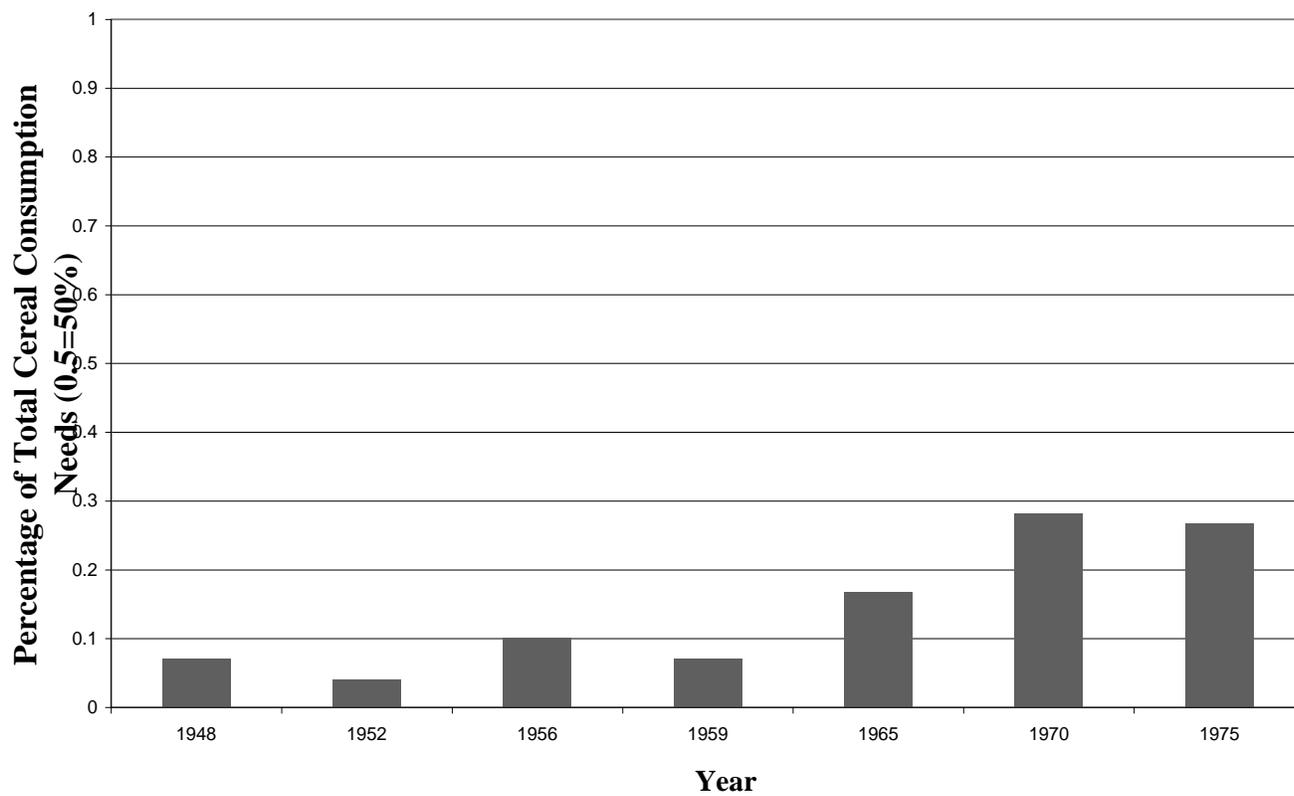


Figure 1. 3 Percentage of Total Cereal Consumption Needs evaluated at 162.5 kg per Year covered by Distribution of Industrially-Produced Bread, 1978

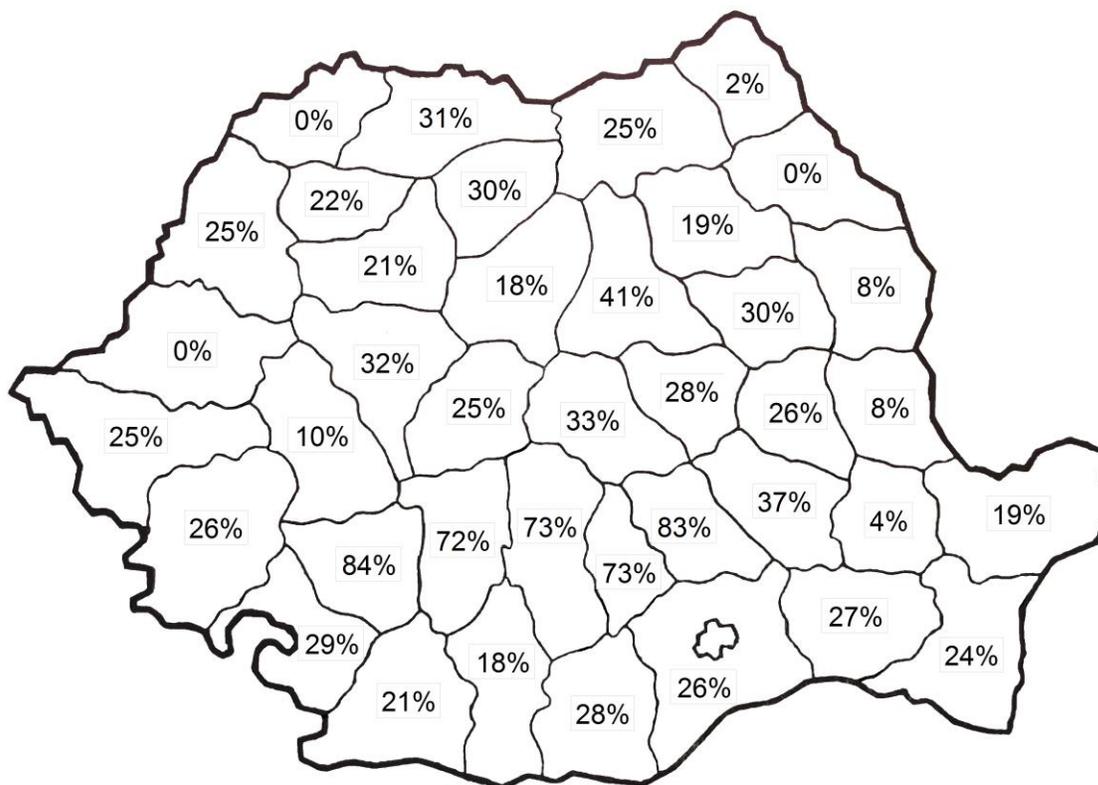


Table 1. 1 Average Quantities of Wheat/Rye Cereals Available to Rural Residents from the Relevant Region, in Kg and in Terms of their Contribution to the Total Cereal Consumption Needs Evaluated at 162.5 kg.

Time Period	Physical Quantities of Wheat/Rye Cereals	Contribution to Total Cereal Consumption Needs
1900-1913	92.2 kg¹	56.7%
1921-1939	100.5 kg	61.8%
1957	53.6 kg	33%
1978	124.8 kg	76.8% (110%) ²

Table 1. 2 Proportion of the Rural Population from the Relevant Region considered to have had consumed Bread Preponderantly

Time Period	Proportion of Rural Population
1907	31%
1938	Under 50%
1950-1965	26.9% (95% Confidence Interval: 11%-48%)
1978-1980	At least 75%

¹ Figures in bold denote that they are maximum estimates and figures un-bolded denote that they are minimum estimates in accordance with the principle of giving precedence to evidence that goes against my hypothesis that a dietary change of considerable magnitude had occurred beginning with the 1960s.

² Evaluated against the consumption level of 112 kg of cereals observed in the 1979-1980 Dietary Study.

APPENDIX TO CHAPTER 2

Table 2. 1 Changes in the Volume of Production, Volume of Investments, Value of Fixed Funds, Number of Directly Productive Workers and Average Capacity of Production per Unit, 1950-1975

Five-Year Intervals/Year	1951-1955	1956-1960	1961-1965	1966-1970	1975
Production of bread in tons	716424 ⁴ (1952) 1015000 ⁵ (1955)	1110000 (1959) ^{6 7}	1637000 ⁸ (1965) (1552855) ⁹	1820400 ¹⁰ (1970)	1956000 ¹¹
Production of bread in equivalent black bread units ³		1297790	2008610	2640690	3257504

³ Calculated using the data and references from figure 2.1 on the breakdown of production on bread types and transformation ratios derived from technical work norms presented in Mihai Căliman, Nicolae Cordăreanu and Ioana Moșu, "Experiența dobândită în elaborarea și aplicarea normelor în cadrul noului sistem de salarizare [The Experience Gained in Elaborating and Applying the Norms of the New Payment System]," *Industria Alimentară [The Food Industry]* 4 (1969): 176.

⁴ Calculated based on information from C.C. al P.C.R. Secția Economică. 119/1952, 52 and "Pentru avântul continuu al industriei de panificație [For the Continuing March Forward of the Baking Industry]," *Industria Alimentară* 8-9 (1953): 5.

⁵ C.C. al P.C.R. Secția economică. 77/1959 "Studiu cu privire la dezvoltarea Subramurii Industriei Pâinii in perioada 1960-1965 și în perspectivă până în 1975 [Study Concerning the Development of the Baking Sector between 1960 and 1965 and its Prospective Development up to 1975]", 395, 496

⁶ Ibid.

⁷ Calculated based on information from C.C. al P.C.R. Secția Economică. 119/1952, 52 and

⁸ C.C. al P.C.R. Secția Economică. 12/1966, 41

⁹ C.C. al P.C.R. Secția Economică. 15/1966, 10

¹⁰ C.C. al P.C.R. Secția Economică. 51/1971, 41

¹¹ Adjusted data from C.C. al P.C.R. Secția Economică. 134/1976 and C.C. al P.C.R. Secția Economică. 51/1971, 41

Investments (millions in 1963 prices) ¹²	160	170	594	621 (without 1970)	
Alternative data (millions in unspecified prices) ¹³	101	152	505	917	
Fixed Funds Index of Growth (1950=100) ¹⁴	141% 1955/1950	199% 1960/1950	364% 1965/1960	690% 1970/1950	813%
Number of Workers in Productive Activities		11000 ¹⁵ - 1959			19000 ¹⁶
Average Capacity of Production per Unit	3.66 (1952)	6.16 (1959)		10.3 ¹⁷ (1969)	14.8

¹² Includes also investments in the flour products and biscuit sectors. Alexandru Negreanu and Ioan M. Popa, "Un sfert de veac de adânci și importante transformări în dezvoltarea industriei de panificație și produse făinoase [A Quarter of a Century of Profound and Important Developments in the Baking and Flour Products Industries]," *Revista Industriilor Alimentare [Review of the Food Industry]* 8 (1969): 423.

¹³ Vintilă Rotaru, "Dezvoltarea și modernizarea bazei tehnice de producție a industriei alimentare pe calea investițiilor [Development and Modernization of the Technical Base of Production in the Food Industry through Investments]," *Revista Industria Alimentară* 12 (1970): 684.

¹⁴ Idem. 686 and Vintilă Rotaru, *Eficiența economică a investițiilor în industria alimentară și căile sporirii ei [The Economic Efficiency of Investments in the Food Industry and the Ways to Improve It]* (Bucharest: Carus, 1974), 31.

¹⁵ C.C. al P.C.R. Secția Economică. 77/1959, "Studiu cu Privire la Dezvoltarea Subramurii Pâinii în perioada 1960-1965 și în perspectivă până în anul 1975 [Study Concerning the Development of the Baking Sector between 1960 and 1965 and its Prospective Development up to 1975]", 84.

¹⁶ Calculated by applying a ratio of skilled to unskilled workers of 4 to 5. Data on the number of skilled workers has been taken from C.C. al P.C.R. Secția Economică. File 134/1976 and the ratio from C.C. al P.C.R. Secția Economică. 77/1959, 15. The number of highly skilled workers has been calculated from data on the number of foremen, engineers and technicians in the baking and flour products industry from Alexandru Negreanu and Ioan M. Popa, "Un sfert de veac de adânci și importante transformări în dezvoltarea industriei de panificație și produse făinoase," 426 by assuming that each sectors' share of highly skilled personnel equals percentage-wise its share of qualified workers.

¹⁷ Alexandru Negreanu and Ioan M. Popa, "Un sfert de veac de adânci și importante transformări în dezvoltarea industriei de panificație și produse făinoase," 423

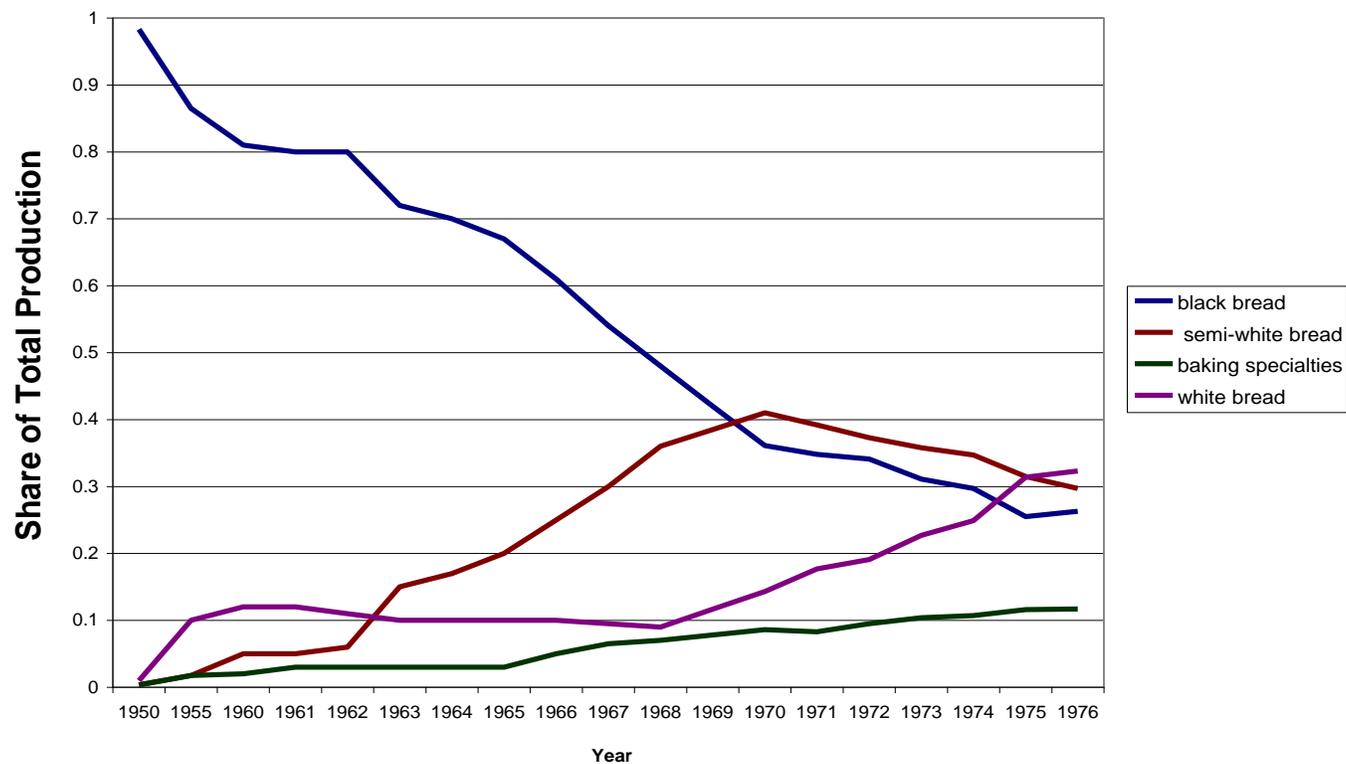
Figure 2. 1 Changes in the Structure of Bread Production

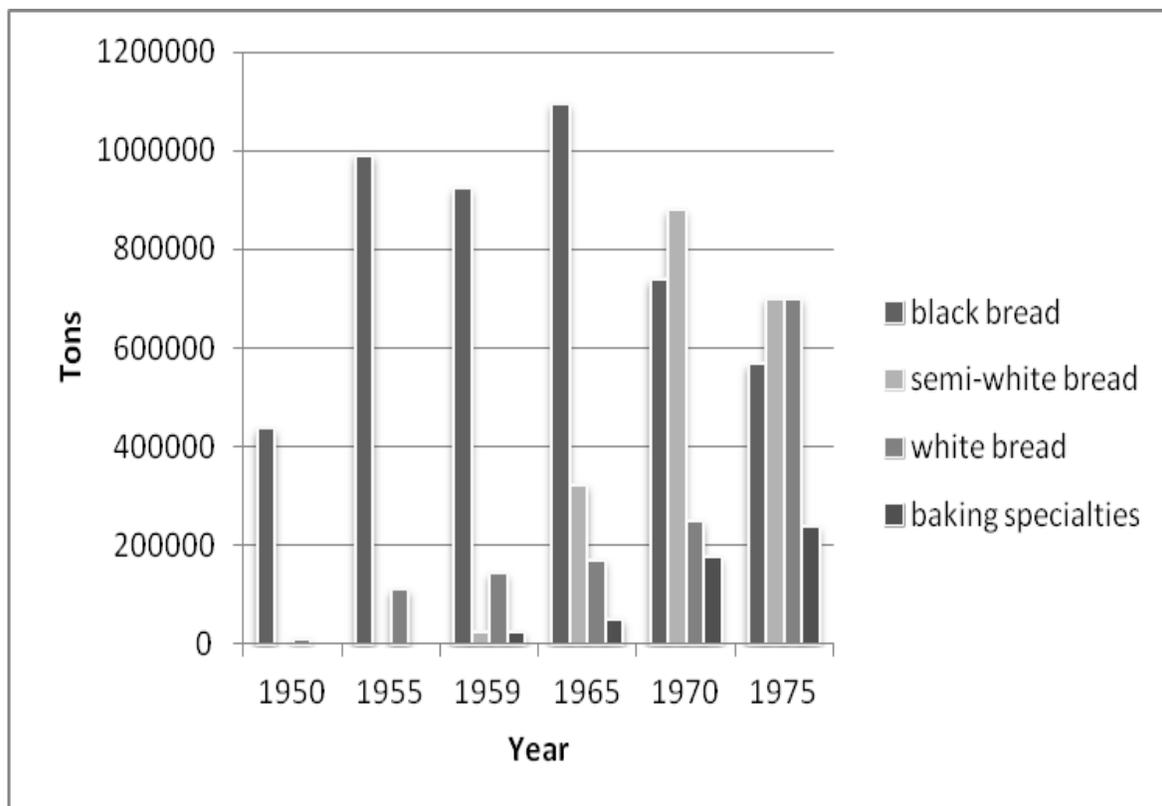
Figure 2. 2 Total Output for Each Type of Bread

Figure 2. 3 Residual Quantity of Industrially Produced Bread per Capita of Rural Resident (Kg)

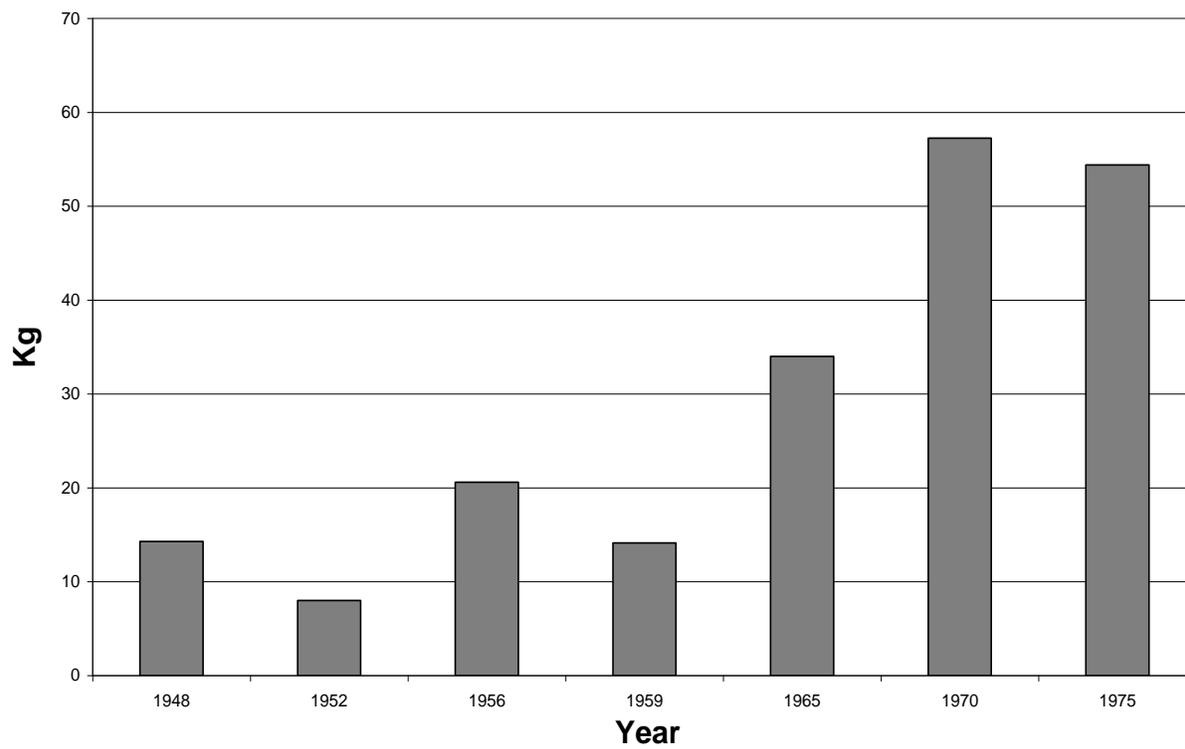


Figure 2. 4 Rhythm of Growth of the Urban and Rural Populations, of Urban Levels of Consumption and of Quantities of Industrially Produced Bread

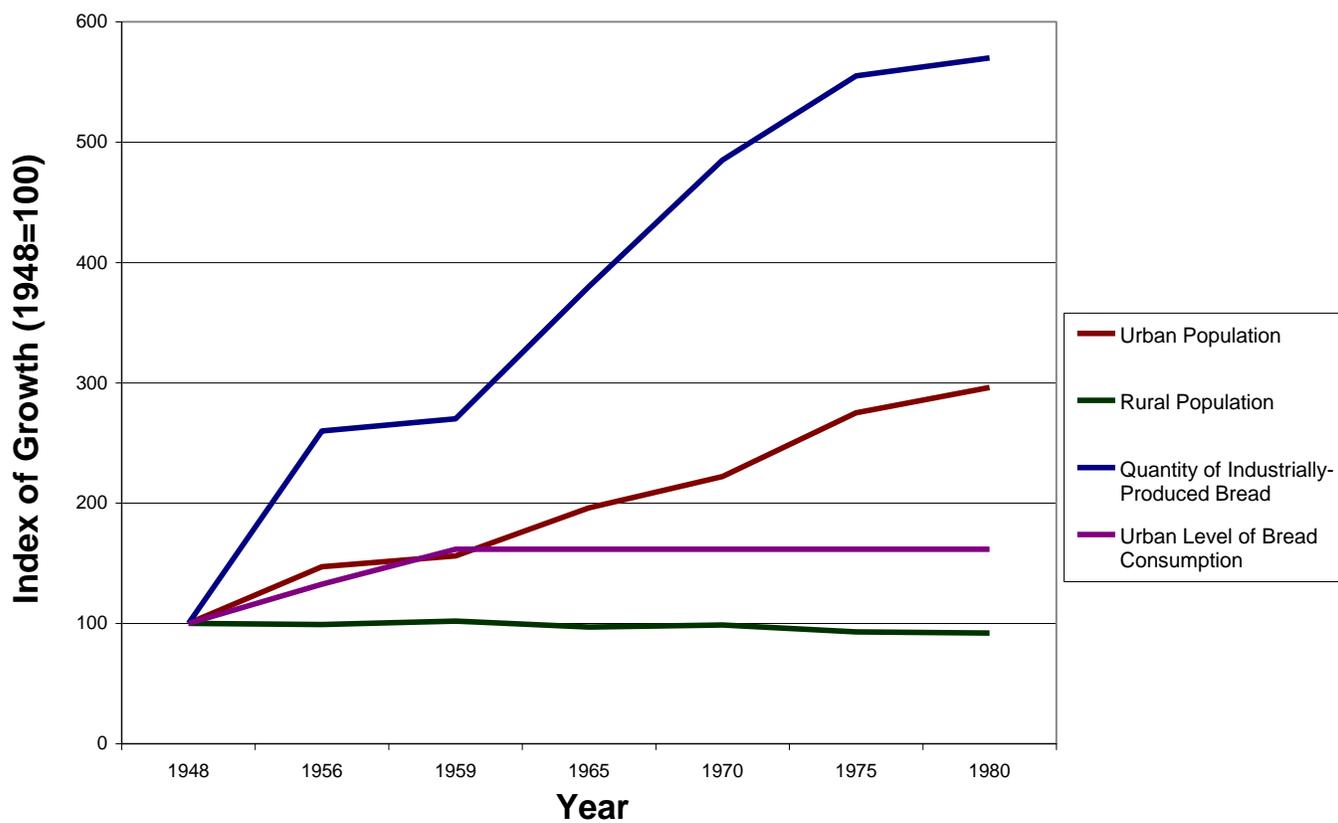


Figure 2. 5 Levels of Bread Production per Rural Resident by Region, 1959 (Kg)

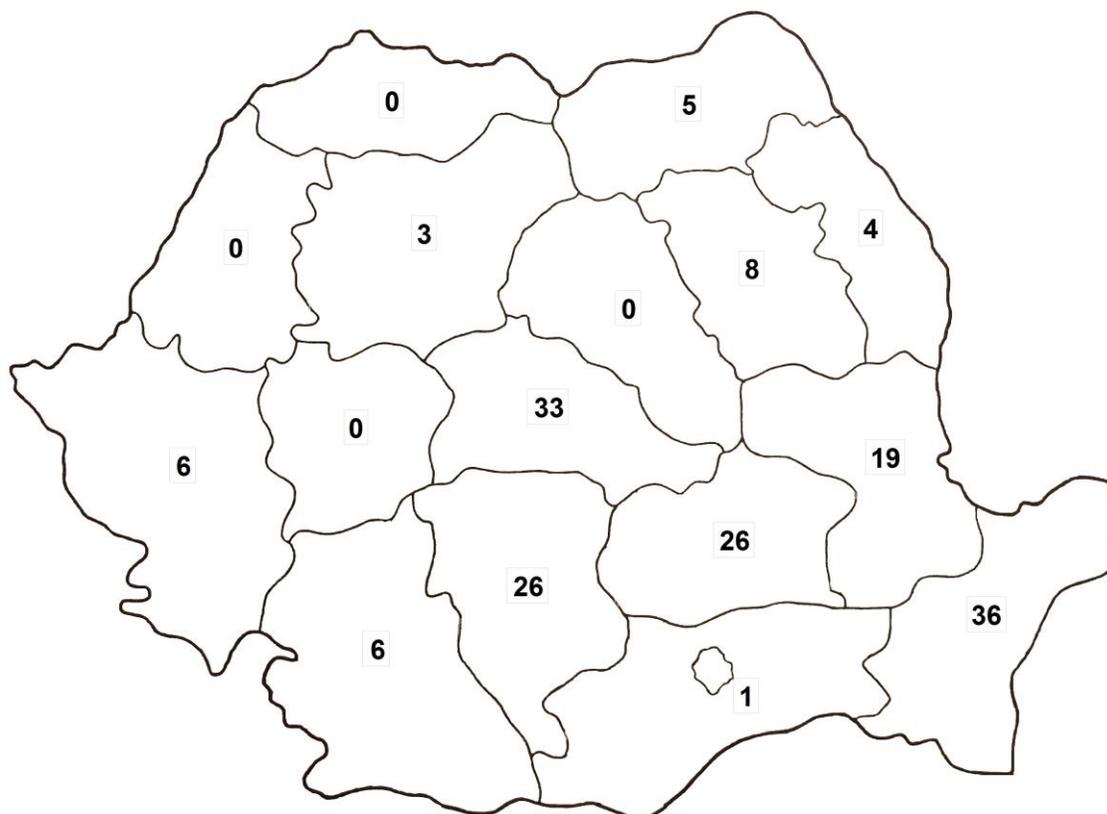


Figure 2. 6 Levels of Bread Distribution per Rural Resident by County (Kg) - The First Three Quarters (October-June) of the 1975-1976 Agricultural Year

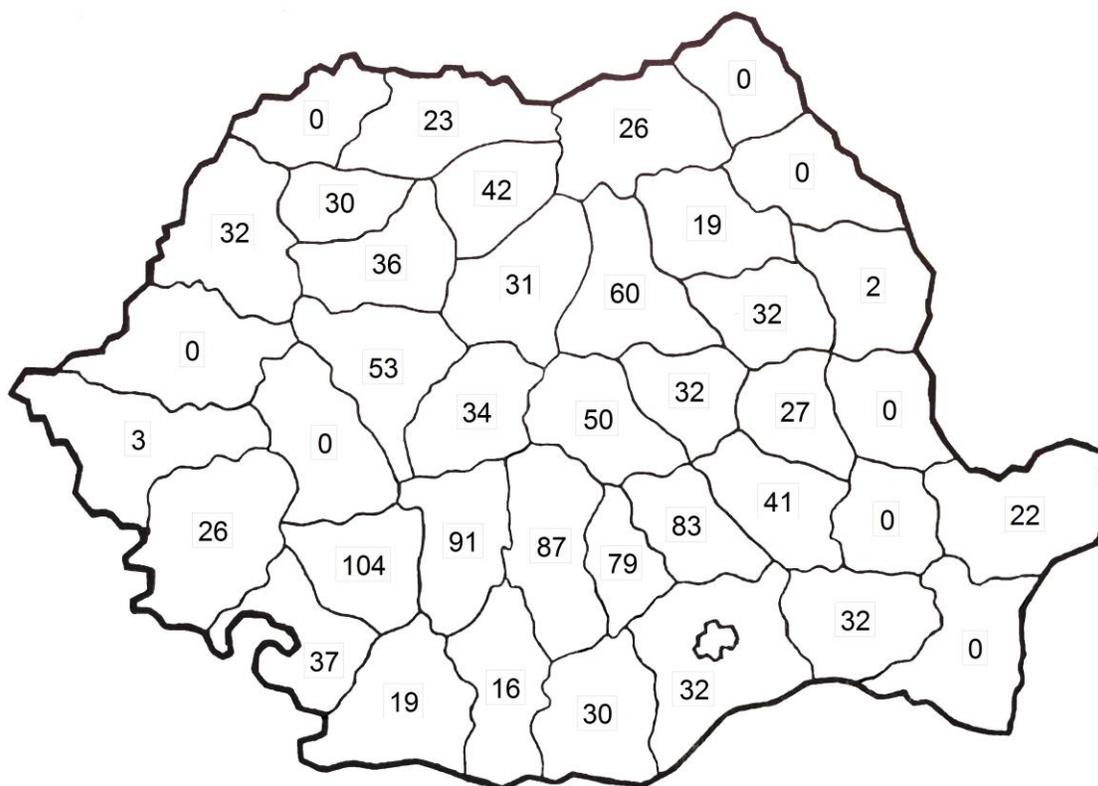


Figure 2. 7 Levels of Bread Distribution per Rural Resident by County (Percentage of Total Cereal Consumption Needs evaluated at 140 Kg of Bread per Year) - The First Three Quarters (October-June) of the 1975-1976 Agricultural Year

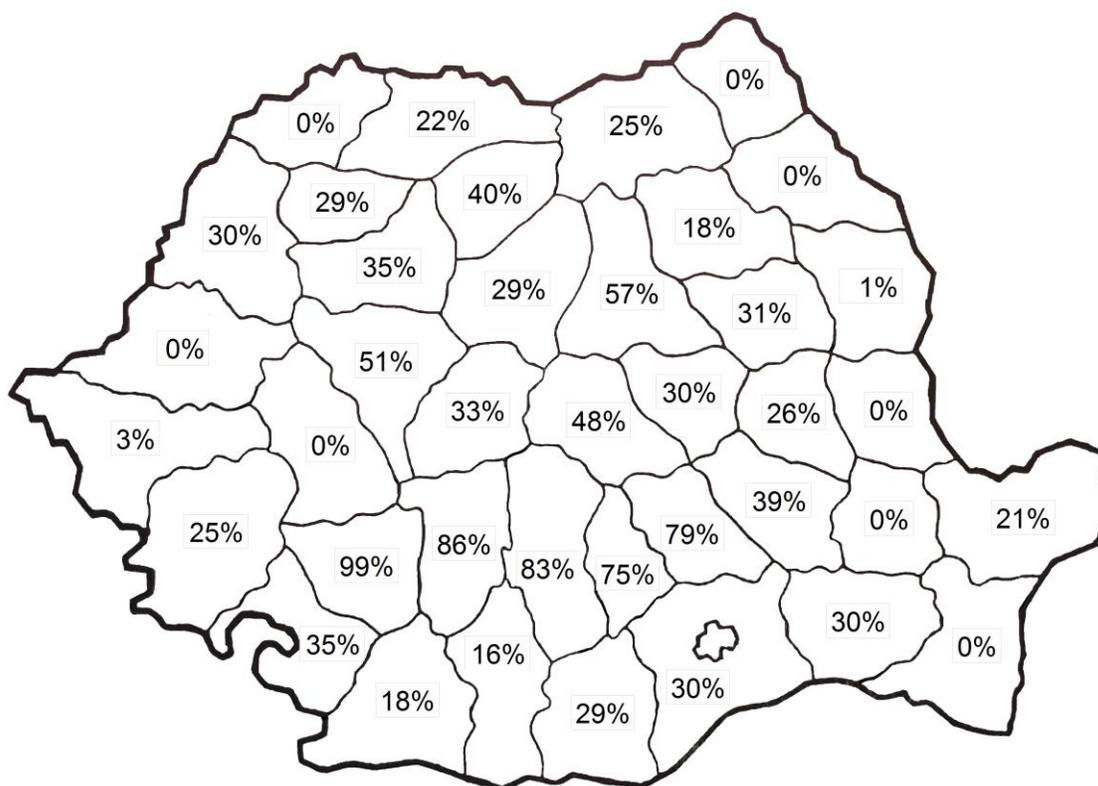


Figure 2. 8 Levels of Bread Distribution per Rural Resident by County (Kg) - 1978

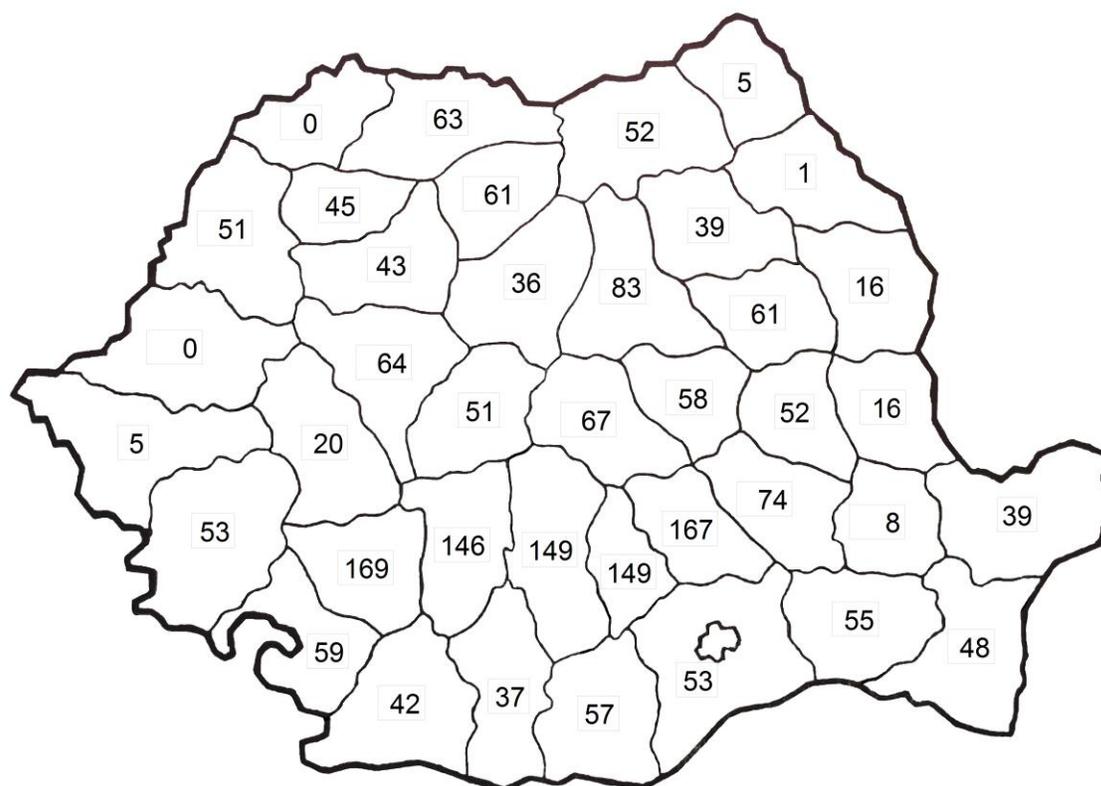
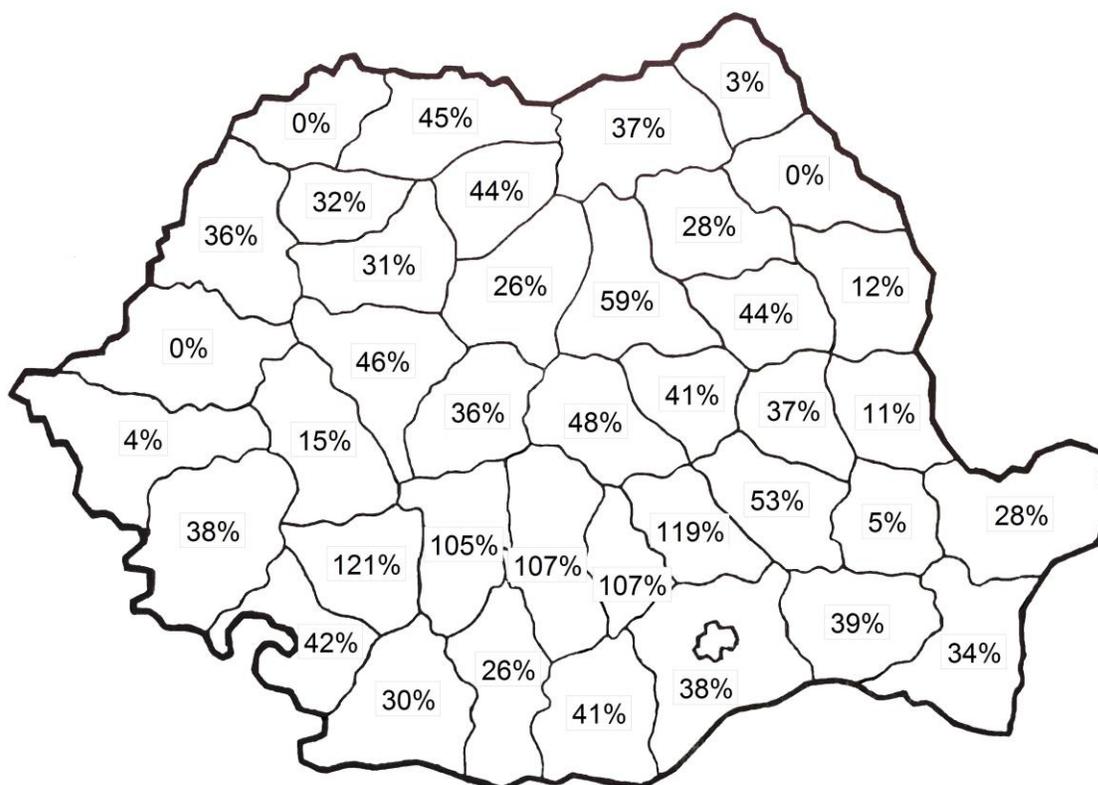


Figure 2. 9 Levels of Bread Distribution per Rural Resident by County (Percentage of Total Cereal Consumption Needs evaluated at 140 Kg of Bread per Year) - 1978



APPENDIX TO CHAPTER 3

Figure 3. 1 Percentage of Rural Residents having Access to Sufficient Quantities of Maize from Private Plot Production and In-Kind Payments by Agricultural Cooperatives



Figure 3. 2 Percentage of Rural Residents from Plain Regions having Access to Sufficient Quantities of Maize from Private Plot Production and In-Kind Payments by Agricultural Cooperatives

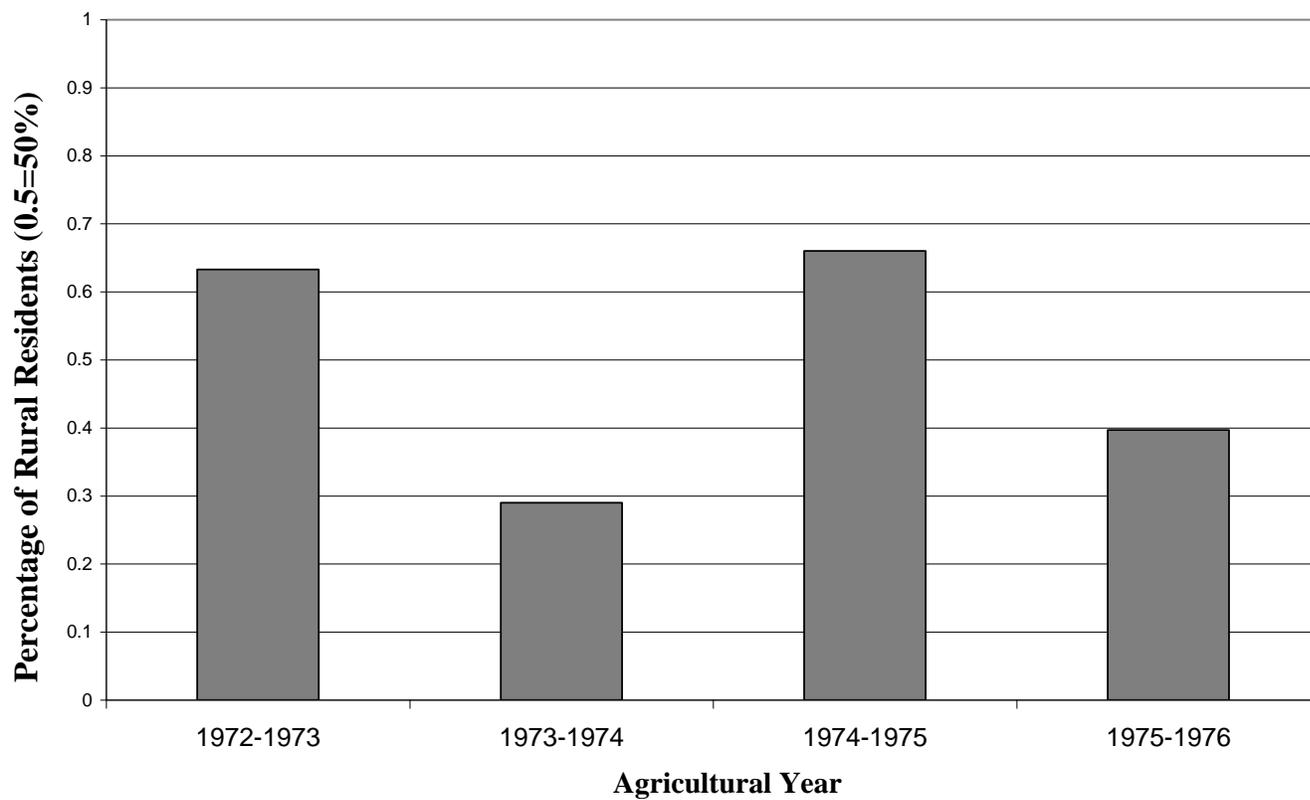


Figure 3. 3 Percentage of Rural Residents from Hilly and Mountainous Regions having Access to Sufficient Quantities of Maize from Private Plot Production and In-Kind Payments by Agricultural Cooperatives

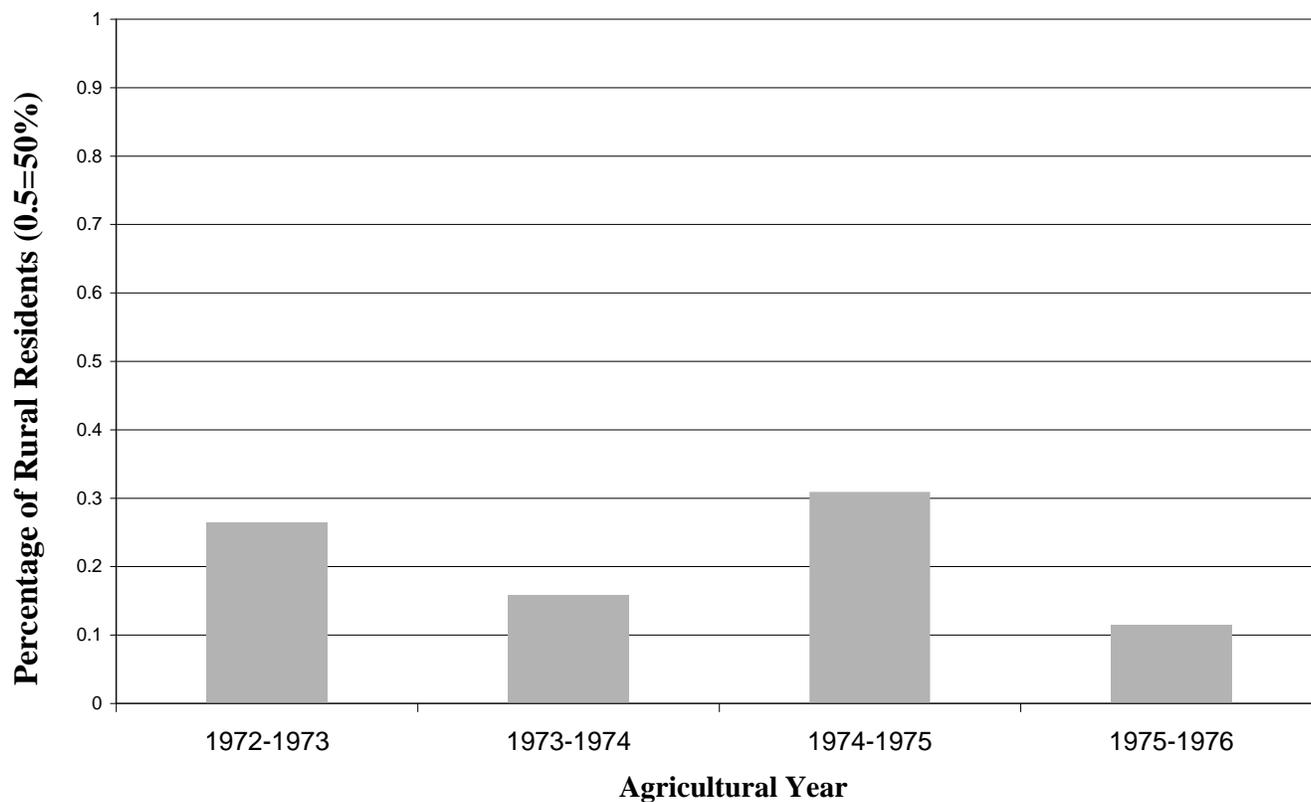


Figure 3. 4 Percentage of Rural Residents having Access to Sufficient Quantities of Maize from Private Plot Production and In-Kind Payments by Agricultural Cooperatives, Adjusted Results

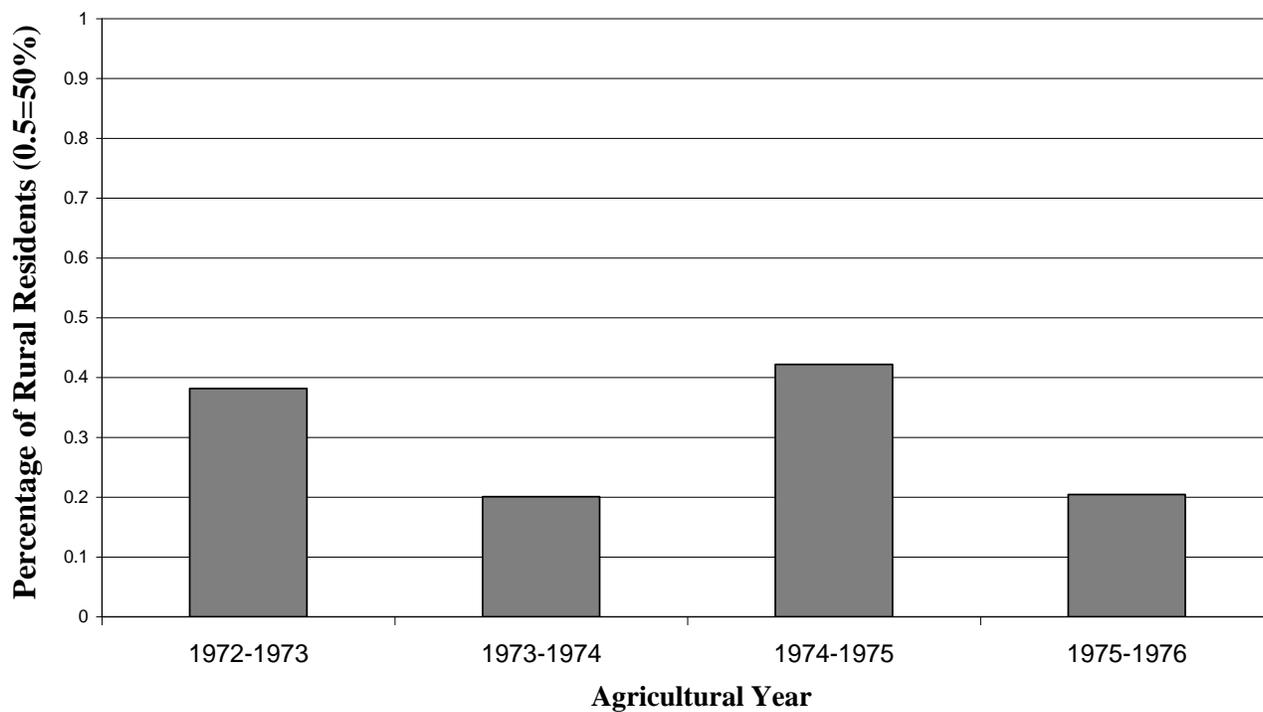


Figure 3. 5 Percentage of Rural Residents having Access to Sufficient Quantities of Maize from Private Plot Production, In-Kind Payments by Agricultural Cooperatives and the State Commercial Network

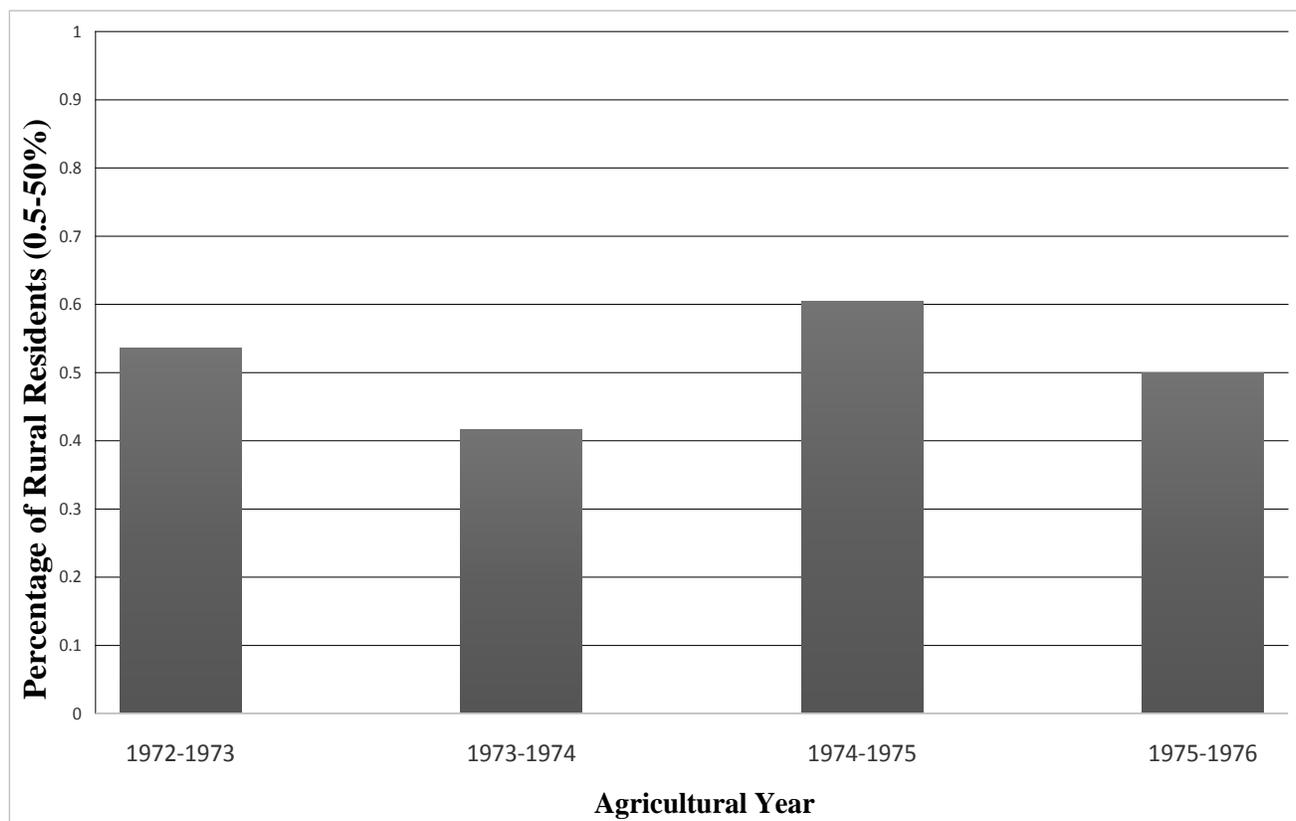


Figure 3. 6 Percentage of Rural Residents having Access to Sufficient Quantities of Maize from Private Plot Production, In-Kind Payments by Agricultural Cooperatives, the State Commercial Network and Private Landholding Production



Figure 3. 7 Percentage of Rural Residents having Access to Sufficient Quantities of Maize from all Sources, by County and Agricultural Year

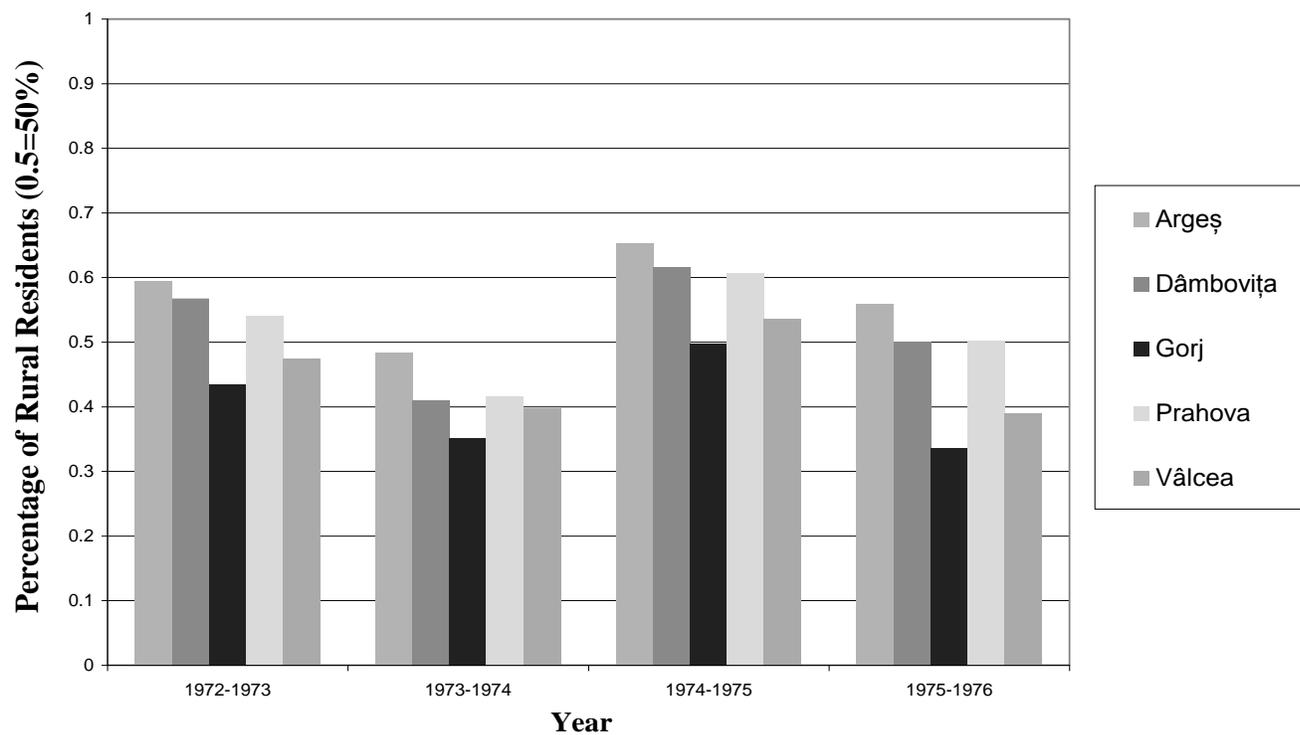
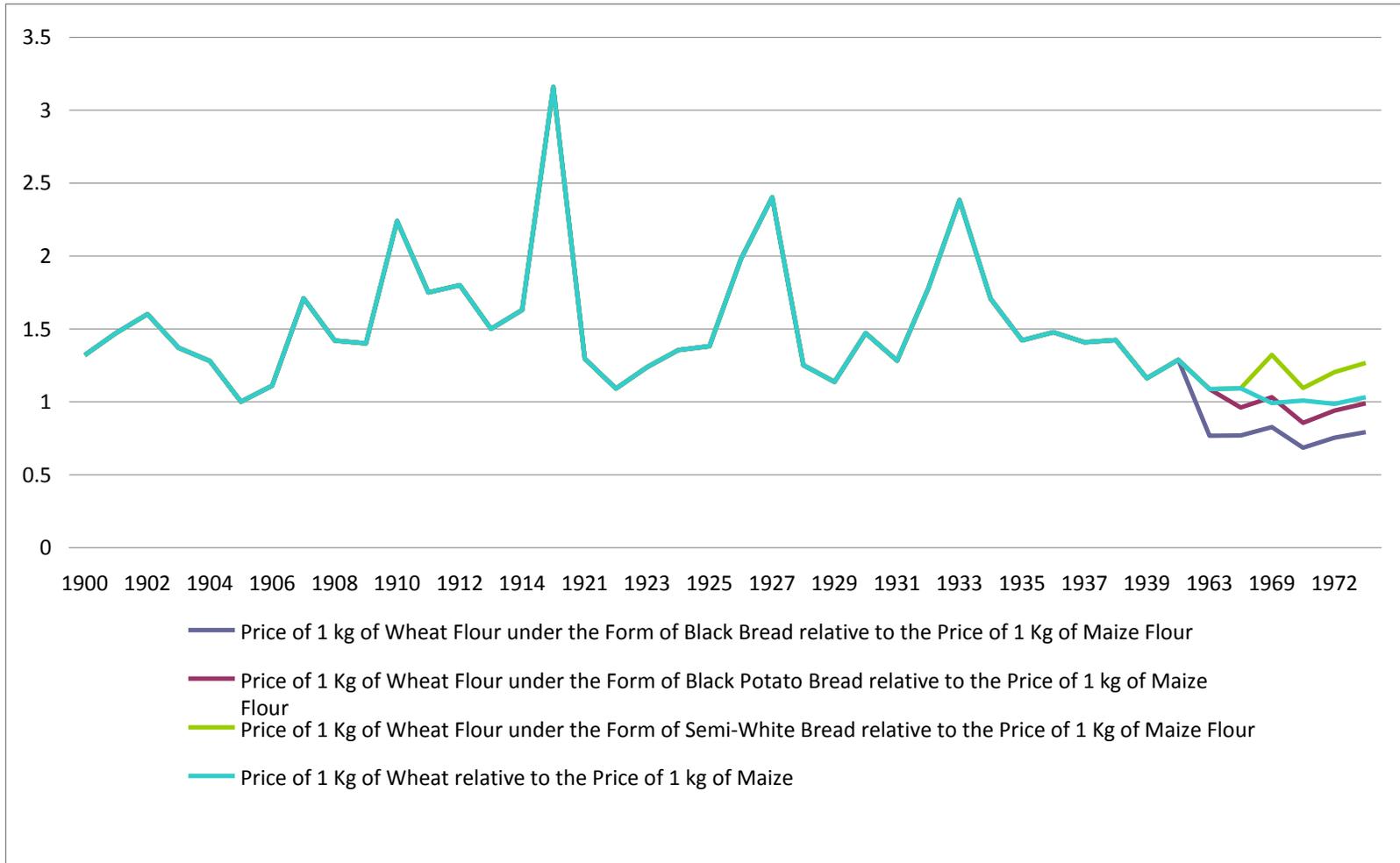


Figure 3. 8 Relative Prices of Wheat-Based and Maize-Based Products



APPENDIX TO CHAPTER 4

Figure 4. 1 Percentage of Respondents preferring Mămăligă with each of the Six 'Fringe' Dishes - All Respondents

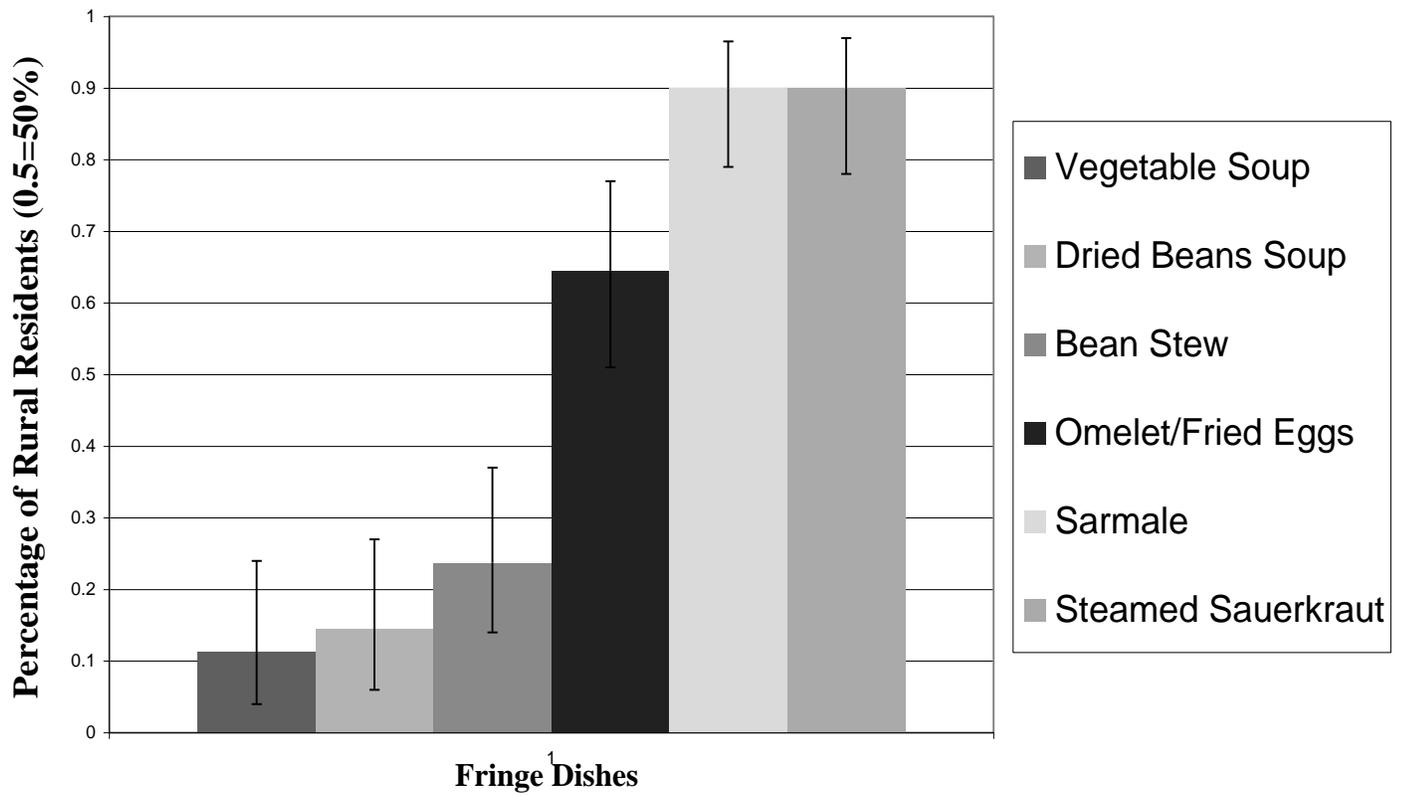


Figure 4. 2 Percentage of Respondents preferring Mămăligă with each of the Six 'Fringe' Dishes - Only Respondents with High Consumption of Mămăligă in their Youth

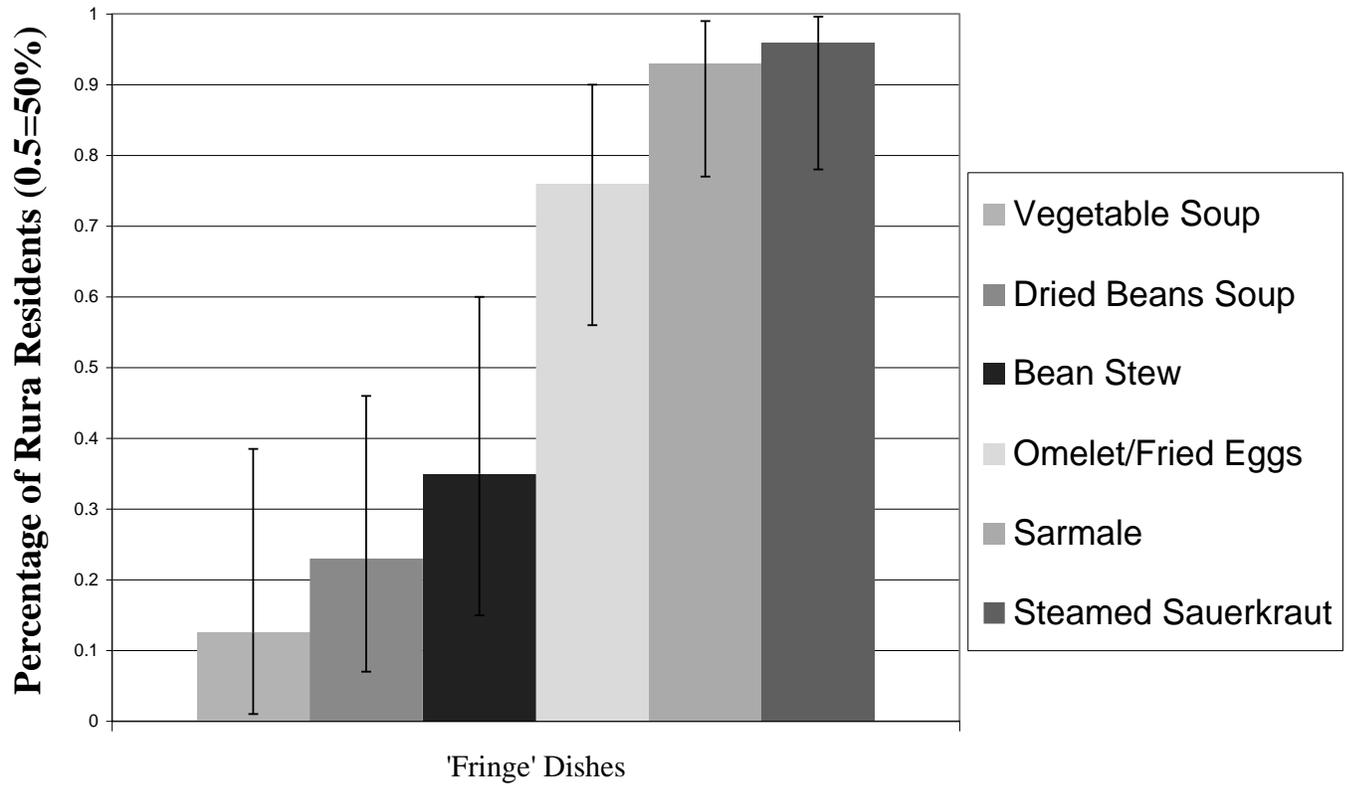


Figure 4. 3 The Hypothesized Fit of the Calorie-Based Conditioning Model to the Distribution of the Respondents' Relative Preferences for Bread or Mămăligă with the Six 'Fringe' Dishes

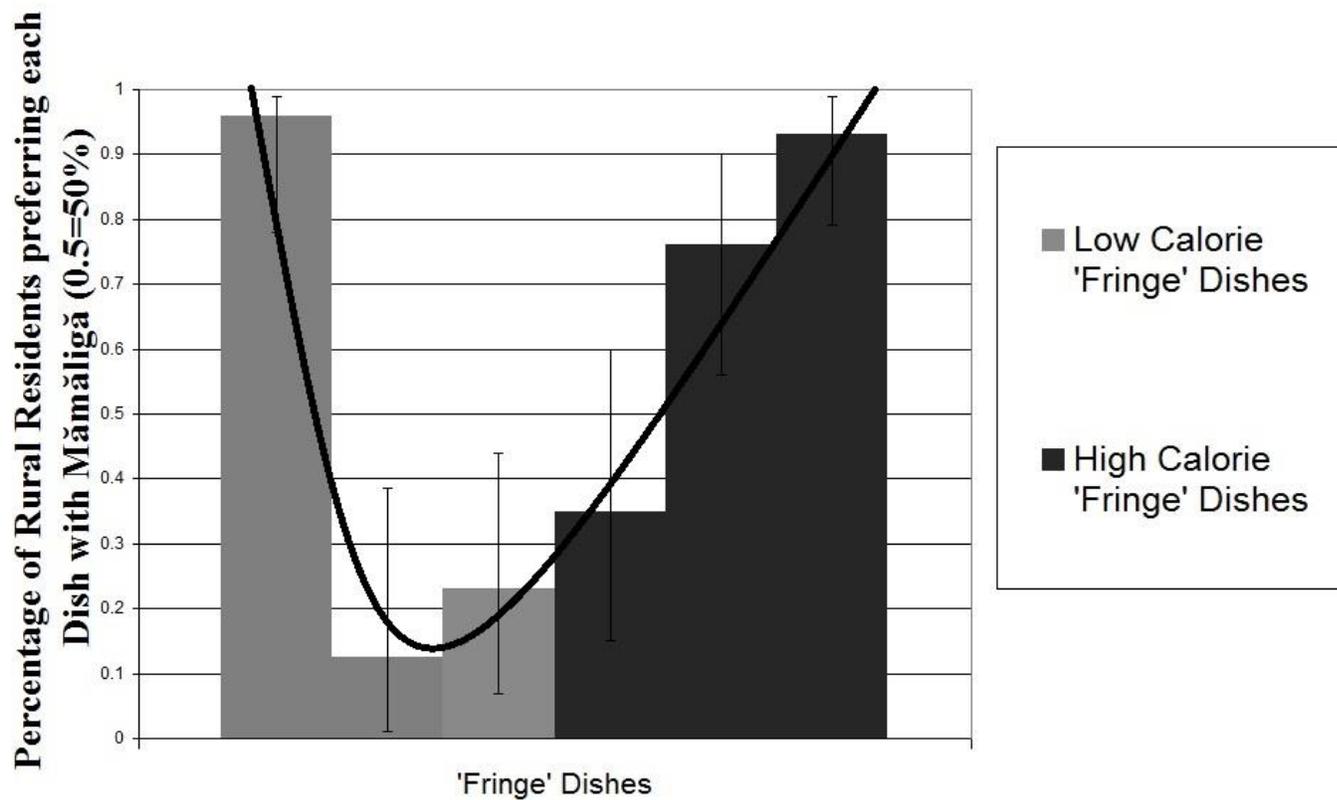


Table 4. 1 McNemar Tests for Relative Preferences for Bread or Mămăligă with Six Commonly-Served ‘Fringe’ Dishes

The McNemar test is a statistical test used for making inferences about a population based on sample data. This test is appropriate for samples consisting of matched pairs or of individuals measured on two variables that cannot be considered independent of each other and is performed in order to estimate the probability that the differences observed in the sample are statistically different from what might be expected from sampling imperfections alone. For this purpose, the McNemar test uses the information from discordant pairs - pairs in which the response of one individual or of the same individual on one variable or measurement differs from the response of the other individual or of the same individual on the other variable or measurement - and neglects the information from concordant pairs to calculate the probability that the distribution of responses observed in the sample can result by chance on the assumption that the two variants of the discordant responses are equally frequent in the population. In the present analysis, the McNemar test evaluates the statistical significance of the observed differences in the consumers’ relative preferences for bread or mămăligă with pairs of the six ‘fringe’ dishes by using the data for consumers who preferred each of the compared two ‘fringe’ dishes with a different ‘core’ food (discordant pairs) but disregarding the data for consumers who preferred both ‘fringe’ dishes with the same ‘core’ food (concordant pairs). For the considered consumers, The McNemar exact conditional test has been applied to calculate directly the probability that the observed proportion or a more extreme proportion of consumers who preferred the first ‘fringe’ dish with mămăligă and the second ‘fringe’ dish with bread could be obtained through random

sampling from a population in which half of the consumers preferred the first ‘fringe’ dish and the other half preferred the second ‘fringe’ dish with mămăligă.¹

The information from the sample/questionnaire is presented in 30 2x2 contingency tables with 2 tables summarizing the information for each of the 15 possible pairs of ‘fringe’ dishes depending on whether the respondents who had indicated that they prefer equally at least one of the compared ‘fringe’ dishes with bread *and* mămăligă were included or excluded from the analysis. The relevant discordant categories are presented in bold. Finally, the probability that the distribution of the respondents’ relative preferences for bread or mămăligă with the compared ‘fringe’ dishes observed in the sample could have been obtained by chance alone and the decision concerning the statistical significance of the results are presented in each table. The observed difference in the respondents’ relative preferences for bread or mămăligă with the compared ‘fringe’ dishes has been considered to be statistically significant if the probability of obtaining it by chance alone was less than 5%.

Two illustrations of how the information from the oral questionnaire has been summarized in the tables presented below and how the McNemar test has been applied to it may facilitate a better understanding of the data. The figures presented in Table 3 (Page 308, upper table) indicate that 13 respondents have answered that they had consumed both steamed sauerkraut and omelet with mămăligă in their childhood and early adulthood and have also provided information about their current preferences for bread or mămăligă with these two ‘fringe’ dishes. Of these 13 respondents, 7 currently prefer both

¹Equivalently, the McNemar exact conditional test can be applied to calculate the probability that the observed proportion or a more extreme proportion of consumers which preferred **the first ‘fringe’ dish with bread** and **the second ‘fringe’ dish with mămăligă** could be obtained through random sampling from a population in which half of the consumers preferred the first ‘fringe’ dish and the other half preferred the second ‘fringe’ dish with **bread**.

‘fringe’ dishes with mămăligă, 1 prefers both ‘fringe’ dishes with bread, 5 prefer steamed sauerkraut with mămăligă and omelet with bread and none prefer omelet with mămăligă and sauerkraut with bread. Applied to this data, the McNemar exact conditional test shows that there is a probability of 3% of having randomly selected a sample consisting of 5 respondents who prefer steamed sauerkraut with mămăligă and omelet with bread and none who had the opposite preferences if actually a full half of the entire relevant population prefer omelet with mămăligă and sauerkraut with bread and only half of the population have the opposite preferences. Table 4 (Page 308, bottom table) includes only one additional respondent who currently prefers steamed sauerkraut with mămăligă but who prefers omelet equally with bread and mămăligă and, therefore, the distribution of relative preferences from the sample is even more unlikely to have been obtained by simple chance (less than 2% probability).

By comparison, the figures presented in Table 29 (page 321, upper table) indicate that 21 respondents have answered that they had consumed both dried beans soup and vegetable soup with mămăligă in their childhood and early adulthood and have also provided information about their current preferences for bread or mămăligă with these two ‘fringe’ dishes. Of these 21 respondents, 4 prefer both ‘fringe’ dishes with mămăligă, 15 prefer both ‘fringe’ dishes with bread, 1 prefers the vegetable soup with mămăligă and the dried beans soup with bread and 1 prefers the dried beans soup with mămăligă and the vegetable soup with bread. In this case, the McNemar test cannot find a statistically significant difference since the two versions of the discordant pairs are equally frequent in the sample. Table 30 (page 321, bottom table) includes 3 additional respondents who currently prefer the vegetable soup equally with bread and mămăligă but who prefer the

dried beans soup with bread. Nevertheless, the probability of having obtained through random selection a sample consisting of 4 respondents who prefer the vegetable soup with mămăligă or who prefer it equally with bread and mămăligă and of 1 respondent who has the opposite preferences, or a more extreme distribution (5 respondents who prefer the vegetable soup with mămăligă and none who prefer the dried beans soup with bread) is 19%, above the cutoff limit of at most 5%. Therefore, the conclusion has been that there is not sufficient information from the sample to confidently conclude that one or the other distribution of relative preferences (preference for vegetable soup with mămăligă and for dried beans soup with bread vs. the opposite pattern of preferences) is more prevalent in the relevant population.

‘Fringe’ Dishes	Sauerkraut			
		Mămăligă	Bread	
Sarmale	Mămăligă	11	1	P=0.5 (not significant)
	Bread	2	0	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

‘Fringe’ Dishes	Sauerkraut			
		Mămăligă	Bread	
Sarmale	Mămăligă	11	1	P=0.3125 (not significant)
	Bread	3	0	

'Fringe' Dishes	Sauerkraut			P=0.03125 (significant)
		Mămăligă	Bread	
Omelet	Mămăligă	7	0	
	Bread	5	1	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Sauerkraut			P=0.015625 (significant)
		Mămăligă	Bread	
Omelet	Mămăligă	7	0	
	Bread	6	1	

'Fringe' Dishes	Sauerkraut			P=0.015625 (significant)
Beans Stew	Mămăligă		Bread	
	Mămăligă	5	0	
	Bread	6	1	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Sauerkraut			P=0.0039 (significant)
Beans Stew	Mămăligă		Bread	
	Mămăligă	5	0	
	Bread	8	1	

'Fringe' Dishes	Sauerkraut			P= 0.0156 (significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	0	
	Bread	6	1	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Sauerkraut			P= 0.0156 (significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	0	
	Bread	6	1	

'Fringe' Dishes	Sauerkraut			P=0.0039 (significant)
Vegetable Soup	Mămăligă		Bread	
	Mămăligă	2	0	
	Bread	8	0	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Sauerkraut			P=0.0039 (significant)
Vegetable Soup	Mămăligă		Bread	
	Mămăligă	2	0	
	Bread	8	0	

‘Fringe’ Dishes	Sarmale			P=0.0107 (significant)
		Mămăligă	Bread	
Omelet	Mămăligă	34	1	
	Bread	9	4	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

‘Fringe’ Dishes	Sarmale			P=0.0021 (significant)
		Mămăligă	Bread	
Omelet	Mămăligă	34	2	
	Bread	14	4	

‘Fringe’ Dishes	Sarmale			
		Mămăligă	Bread	
Beans Stew	Mămăligă	13	0	P=0.00000012 (significant)
	Bread	23	3	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

‘Fringe’ Dishes	Sarmale			
		Mămăligă	Bread	
Beans Stew	Mămăligă	14	0	P=0.00000007 (Significant)
	Bread	27	3	

‘Fringe’ Dishes	Sarmale			
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	7	0	P=0.000000007 (significant)
	Bread	27	2	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

‘Fringe’ Dishes	Sarmale			
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	7	1	P=0.000000006 (significant)
	Bread	28	2	

'Fringe' Dishes	Sarmale			
		Mămăligă	Bread	
Vegetable Soup	Mămăligă	5	0	P=0.0000005 (significant)
	Bread	21	1	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Sarmale			
		Mămăligă	Bread	
Vegetable Soup	Mămăligă	5	1	P=0.0000008 (significant)
	Bread	24	1	

'Fringe' Dishes	Omelet			P=0.00026 (significant)
		Mămăligă	Bread	
Bean Stew	Mămăligă	8	1	
	Bread	15	8	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Omelet			P=0.00001 (significant)
		Mămăligă	Bread	
Bean Stew	Mămăligă	8	2	
	Bread	23	8	

'Fringe' Dishes	Omelet			P=0.0001 (significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	2	
	Bread	19	4	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Omelet			P=0.00001 (significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	2	
	Bread	23	4	

'Fringe' Dishes	Omelet			
		Mămăligă	Bread	
Vegetable Soup	Mămăligă	3	1	P=0.002
	Bread	12	4	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Omelet			
		Mămăligă	Bread	
Vegetable Soup	Mămăligă	3	1	P=0.00004 (significant)
	Bread	18	4	

'Fringe' Dishes	Bean Stew			P=0.016 (significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	5	0	
	Bread	6	17	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Bean Stew			P=0.0547 (not significant)
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	5	2	
	Bread	8	17	

'Fringe' Dishes	Bean Stew		P=0.035 (significant)
	Mămăligă	Bread	
Vegetable Soup	Mămăligă	2	1
	Bread	7	12

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Bean Stew		P=0.0592 (not significant)
	Mămăligă	Bread	
Vegetable Soup	Mămăligă	2	4
	Bread	11	13

'Fringe' Dishes	Vegetable Soup			
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	1	Not aplicable
	Bread	1	15	

Including consumers who prefer both bread and mămăligă with at least one of the two dishes

'Fringe' Dishes	Vegetable Soup			
		Mămăligă	Bread	
Dried Beans Soup	Mămăligă	4	1	P=0.187 (not significant)
	Bread	4	15	

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