

Poland, Bulgaria and Romania



Social Impact of Discount Food Retail in Remote Regions



**Food and Agriculture Organization
of the United Nations**



**European Bank
for Reconstruction and Development**

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The analysis and opinions presented in this report are the sole responsibility of its main authors, Johan Swinnen and Kristine Van Heck.

ACRONYMS AND ABBREVIATIONS

ALP	Agricultural Labour Productivity
AWU	Annual working units
EBRD	European Bank for Reconstruction and Development
EU	European Union
FDI	Foreign direct investment
GDP	Gross domestic product
GVA	Gross value added
MT	Ministry of trade
OECD	Organisation for Economic Co-operation and Development
PCA	Principal component analysis
PR	Predominantly rural regions
PU	Predominantly urban regions
SR	Significantly rural regions

EXECUTIVE SUMMARY

Objectives & Methodology

Over the last years, the EBRD has supported — through targeted investments — the emergence of modern retailing systems in many transition countries. To enhance the economic and social impact of investments in the food retail sector it is important to obtain a better understanding of the socio-economic impact of retail investments on more remote regions of these countries.

The first objective of the study is to summarise the conclusions on social impacts of discount- and organised retail formats on the more remote areas of countries with economies comparable to Poland, Romania and Bulgaria over a longer period of time, whilst gathering general demographic and socio-economic data/indicators for each country and providing guidance on splitting these countries into geographic areas (i.e. from relatively disadvantaged to relatively well-off) to help identify locations of investment. The second objective is to validate/qualify the conclusions from the first objective through a study of discount and organized retail formats operating in Poland, Romania and Bulgaria, and to draw inference and apply these conclusions to judge the prospective social impact of potential investments in remote areas of Romania and Bulgaria.

The analysis and conclusions in this report draw upon a combination of different sources of information and insights. The first source is existing studies. The second source is statistical material from a variety of sources that could be collected through desk study work. The third source is statistical data and qualitative information we had collected in previous studies which is relevant for the current report. The fourth source is newly collected data based on new interviews and surveys.

A number of important methodological issues should be mentioned:

- *Literature review.* The existing literature on the social impact of changes in the retail sector is rapidly growing. It yields important insights for the purpose of this study. At the same time both the specific issues addressed, the geographical focus, and the quality of the previous analyses and existing studies impose constraints on how much conclusions can be reliably drawn for the purposes of the current study. In the process of writing this report, we paid special attention to existing impact studies in Bulgaria, Romania and Poland, or Eastern Europe more generally. However, because there are only a limited number of studies available on this region, we extended the literature review by providing evidence from other transition, emerging, and even developing countries. We will draw conclusions from these studies to the extent that we feel confident that one could extrapolate findings on the social impact of changes from these regions for the retail sector in Bulgaria, Romania and Poland. Obviously, the relevance of studies from other regions will differ from issue to issue, and we will treat them accordingly to the extent possible.
- *Interviews.* We have complemented the literature review and data from existing sources with empirical findings based on interviews done in the course of this study with various stakeholders in the countries, and in particular in remote areas of the countries under consideration. More specifically, we interviewed and collected data from modern retailers (including discounters), traditional shopkeepers, consumers and producers and their organizations in remote regions in Bulgaria, Romania and Poland. Our interviews took place in June-July 2010. It should be emphasized that,

given the stringent time constraints and the budgetary constraints, in addition to the refusal of some of the key stakeholders to cooperate, it was not possible to collect statistically representative and/or complete information. We have tried to keep these constraints in mind when interpreting the data and the information and to draw conclusions of which we were relatively confident, given the various sources of information at our disposal.

Demographic and Socio-Economic Analysis of Regions

In the second section of the report, we identify key characteristics of various rural regions across the countries' geographic areas which should be useful for discussions on where new investment in the retail industry could be located. For each demographic and socio-economic indicator the report includes a visual summary in the form of a map of the country based on the NUTS3 classification. The indicators discussed in the report are: changes in population between 2002–2008; population density; share of the population older than 65 years; GDP per capita; unemployment; car ownership and importance of the agricultural sector (in terms of GVA and employment).

In general, we find that based on the demographic as well as the socio-economic indicators, Romania is “situated” between Poland and Bulgaria. For example, GDP per capita is the highest in Poland and the lowest in Bulgaria, while Romania's GDP per capita is in between. Also in terms of demographic factors, such as population density and the share of older inhabitants in the total population we can situate Romania between Poland and Bulgaria. The main exception is the share of the population employed in agriculture as agricultural employment is most important in Romania.

In all three countries there are major differences among regions. Based on correlation and principal component analysis we find that in general rural and remote regions have a lower GDP per capita, higher unemployment and higher importance of the agricultural sector. Many of these regions also have a larger share of old persons in the total population and high out-migration. However, there are large differences within rural regions.

The rural regions that are the worst off are: in Bulgaria, the mountainous regions close to the border with Romania (Vidin and Montana); in Poland, the regions close to the border with Belarus and Ukraine (Lomzynski, Bialski and Chelmsko-Zamojski) and some regions in central Poland (Sieradzki, Skierniewicki and Sandomiersko-jedrzejowski); in Romania, the regions close to the border with Bulgaria (Giugiu, Calarasi and Olt).

The rural regions that are the best off are: in Bulgaria, the regions close to the Black Sea (Varna and Burgas); in Poland, the regions close to the border with the Czech Republic (Opolski and legnicko-Glogowski and Bydgosko-Torunski) and the rural regions in the predominantly urban voivodeship Slaskie (Czestochowski and Bielski); in Romania, the regions located in central Romania (Sibiu and Brasov) and close to the border of Hungary (Timis) and close to the Black Sea (Constanta).

The Transformation of the Retail Industry & Recent Developments

Over the past 15 years, the importance of the retail sector has rapidly increased in Bulgaria, Romania and Poland. Starting from almost 0% in the years after liberalization/privatization of the former state-controlled retail sector, the share of modern retail grew at least 30% over recent

years, with the main growth being observed in the last 5-8 years. This recent growth was driven by a combination of demand and supply factors.

The combination of these demand and supply factors resulted in three waves of development: (a) the first-wave countries are in the northern half of Central Europe, including our case study country Poland, where the share of modern retail in food retail is going from a niche market in the early 1990s to 45–50% at present; (b) the second wave countries are the Balkan countries, including our case study countries Bulgaria and Romania, where the modern retail sector started to grow in the mid/late 1990s and reaches on average 30–40% today; (c) the third wave includes some of southern Central European and all the Eastern European countries. In this third wave area, modern retail growth started in the late 1990s and early 2000s.

There are several key features of the modern retail sector in the case study countries that are crucial to understand their social impact. The most recent relevant developments are the following:

- *Diversification and growth of hypermarkets and discount formats.* Soon after the “take-off” of modern retail chains in the region, retailers started diversify the supermarket concept and invested in different formats, such as hypermarkets, discount stores and convenience stores to increase market coverage, diversify product choice, lower prices and hence increase their market share. This diversification started already in the beginning of the 2000s in the first wave countries, such as Poland, and by the mid-2000s the first wave countries tend to be heavily “hypermarketized” and “discounted”. In the second wave countries, such as Bulgaria and Romania, modern retailers only recently started to diversify in different formats (mid 2000s).
- *Retail investments in small towns and more remote areas.* In the same way that foreign investors in the retail sector spread their activities from the relatively-saturated countries (or “first wave” countries) to the less-saturated (or “second wave” and later also “third wave” countries) and from supermarkets to hypermarkets and discounters, retailers also spread their activities within one country. Initially, modern retail growth started in large cities targeting mainly the upper and middle income groups, but when this market gradually became saturated they expanded their focus to lower-middle and lower income groups as they started to invest in smaller cities and even rural towns.
- *Continued growth of foreign participation.* In recent years, foreign retailers invested heavily in the retail sector of Central and Eastern Europe because it offered more opportunities for growth than the fairly saturated markets in Western Europe as they could benefit from soft local competition, higher mark-ups, growing markets and less strict spatial planning and employment regulations. The share of FDI in the retail market has been rapidly increasing and currently, it is 40% in Poland, 35% in Romania and 20% in Bulgaria.
- *Increasing concentration.* Consolidation, with rapid mergers and acquisitions by larger domestic and foreign chains, increased over time and in 2009, the three-firm concentration ratio in supermarket sales was 14% in Bulgaria, 19% in Romania and 21% in Poland. These figures are still low compared to some northern or western European countries and therefore one should expect that in the future the sector will concentrate even more and will reach the same level as in the EU15.
- *Shift towards private standards.* In the past years there has been a shift from informal standards or a lack of public standards to the establishment of more stringent public and private standards

related to quality and food safety. This is accelerated, and directed, by the entry of Western European chains and the progressive implementation of private standards used throughout the chain regardless of the country. Private labels are increasingly important in the region. For example, in the interviewed store of Penny Market in Romania, the number of private-label products increased in the last year with 20%, from 500 products in 2009 to 600 products in 2010.

Impact on Consumers, Producers, Traditional Retail and Rural Society

Investments by modern retail companies and discounters have important effects on specific groups in society. In the report, we distinguish between the effect on consumers, producers and traditional retailers, gender effects and the impact on social cohesion.

Impact on Consumers

In the literature different consumer effects are identified: the impact of modern retail on consumer choice of shops, on prices, on quality, on variety, on diet trends, on the profile of consumers and on rural services. The report discusses each of these aspects in detail.

Consumer Choice. The arrival of modern retailers and discounters has major effects on consumer behavior, in particular in that consumers are increasingly and significantly moving away from shopping in traditional retail outlets to shopping in supermarkets, hypermarkets and discounters — if they are available. This is not only the case in urban regions, but also in rural regions the modern retailer became the most important place where consumers do their grocery shopping. Nevertheless there are important differences between product categories: in the early stage of modern retail development, consumers buy mainly processed and staple food products in the modern retailer. In an intermediate stage, they also buy semi-processed food products, such as meat and dairy, in the modern retailer. Finally, in the most advanced stage, consumers also buy fruits and vegetables in the modern retailer.

Prices. Price is an important reason for rural consumers to switch from shopping in traditional shops to shopping in modern retailers. Price differences between modern and traditional retailers largely depend on the product type and the level of modernization of the procurement system. In general we distinguish three stages:

(1) *Early stage:* Prices offered in modern retail formats are equal or higher (compared to traditional retailers) for processed food products and higher for fresh food produce.

(2) *Intermediate (but still early) stage:* Processed food is cheaper in modern retailers, but the results for fresh produce are mixed. This is because retailers typically first introduce changes in their procurement strategies for processed food products (and rapidly afterwards also for semi-processed food products such as meat and dairy). The changes in procurement strategies substantially reduce transaction costs and in case of high competition between retailers, retailers will pass on lower transaction costs to their customers, which will result in lower consumer prices for these products.

(3) *Advanced stage:* Food prices tend to be generally lower (compared to traditional retailers) for almost all food products, including fresh produce, because modern retailers also adopted the changes in procurement strategies for these products.

Overall our results seem to suggest that prices in modern retailers in Poland, Bulgaria and Romania are lower compared to traditional shops and that this is an important driver behind the success of modern retailers — and especially for discount stores for whom the “low price policy” is particularly important.

Quality. In general, the quality of food products sold by modern retailers is higher than in traditional shops and higher quality and food safety standards are an important reason for consumers to start purchasing some products (mainly meat and dairy products) in modern retail outlets. Also for fruits and vegetables, producers indicate that the quality requirements that modern retailers impose are more stringent than those of other trading partners (e.g. traditional wholesalers).

However, several studies have argued that the “superior” quality of products from modern retailers is debatable and that it is important to make a distinction between “true” quality (based on health and safety standards) and “esthetic” quality (based on standards for size, shape and colour). Modern retailers have been criticized to take mainly the latter into account and to reject a large percentage of products that are produced according to the health and safety standards, but do not fulfill the modern retailers’ “esthetic” requirements.

We found mixed evidence of such practices. For example, in Bulgaria, the representative of the producer organization indicated that an important benefit from contracting with the modern retailer, is that they buy the entire production, including the products which are classified as second class or non-standardized. The first class products are sold in the fruit and vegetable department of the modern retailer, while the second class and unstandardized products are used in prepared dishes. Also the managers of the modern retail stores that we interviewed, indicate that they never reject deliveries because of “esthetic” quality standards. However, 24% of the producers mention that the modern retailer to whom they delivered in 2010 rejected at least once a delivery because of “esthetic” characteristics while their products were fresh and fulfilled all quality standards.

Variety. Modern retailers in general offer more variety in food products. Moreover, we find an important increase in the variety offered by both modern retailers and traditional shops, which indicates that, through increased competition with the modern retail sector, there are positive spillover effects on the variety offered by traditional shopkeepers.

Dietary Trends. Dietary trends in the region show mixed developments. In the past years, fat consumption in Bulgaria, Poland and Romania has increased, but when we consider the type of fat that is consumed, we find an increase in the intake of vegetable fat (unsaturated, “healthy” fat) at the expense of animal fat (saturated, “unhealthy” fat). At the same time, there is an increase in the consumption of processed food products, which generally include more trans fats, a type of fat of which excessive consumption can lead to serious health risks. However, we have no evidence of the extent to which these evolutions are related to the emergence of modern retail chains and not to an increase in purchasing power.

Type of Consumers. In general, we find no significant difference in age, gender, education or household size between consumers visiting modern retailers and those visiting the traditional shop close to modern retailer.

Rural Infrastructure. Also rural consumers that live relatively far from the modern retailer or discounter (15-30 km) buy at least some of their groceries (mainly processed, staple food and

beverages) in a modern retailer or discounter, indicating that these consumers are not a priori excluded from the benefits (lower prices, more variety,...) that modern retailers can offer. Nevertheless, rural consumers living far from the modern retailer indicate that they would like to buy more in modern retailers, but they are mobility constrained in doing so as they do not have a car and public transport is insufficient. Especially, older and poorer households are found to be excluded from the benefits that the modern retail sector can offer.

Rural Services. While modern retailers offer their consumers loyalty cards and brochures, traditional retail shops offer other services which modern retailers and discounters typically do not offer, such as providing consumer credit and delivering products at home. These services appear to be especially important for older people which are less mobile. Given the mobility constraints, the demographic characteristics (ageing) and the socio-economic characteristics (poorer) of the rural population, providing such services is an important contribution to the local community, but also an asset in the survival strategy of traditional shops in the most remote areas (see also section on the impact on traditional retailers).

Recommendations to maximize positive and mitigate adverse social impacts on consumers

- *Improvement of rural infrastructure and public transport facilities.* This is crucial to make sure that all rural inhabitants can benefit from the changes in the retail sector. In addition, investment in rural infrastructure will make rural regions more attractive for modern retail investment. This investment should come from the government, but in the meanwhile, modern retailers and local governments could engage in private-public partnerships to provide some services and initiatives that increase access to modern retailers for rural consumers which are currently excluded from the potential benefits that modern retailers may offer. For example, they could provide a bus service connecting the village to the shop.
- *Promote healthy food products.* Food consumption is an individual choice and modern retailers are not responsible for their customers. However, the modern retailer may promote the consumption of healthy products, for example by increasing the visibility healthy products or by introducing certain food and safety standards in the production of their private-label products. In addition, they could also provide more information on healthy food products and the potential risks of an unhealthy diet to increase consumer awareness. However, not only the modern retailer can provide information, also the government can play an important role in increasing consumer awareness, for example, by financing TV spots that promote the consumption of fruits and vegetables.
- *Stimulate a good balance between “true” quality and “esthetic” quality requirements.* Currently, producers indicate that modern retailers sometimes reject their deliveries which are produced according to the health and safety standards, but do not fulfill the modern retailers’ “esthetic” requirements. Modern retailers could engage to buy a part of the production that does not fit their “esthetic requirements” (but for example at a lower price). These products could be sold with a discount or could be used in the preparation of pre-cooked dishes.

Impact on Producers

The introduction of modern retail chains induced major changes in the product procurement systems and “modernized procurement systems” emerged, which translated in important changes in the relationship with local producers.

In order to reduce transaction costs, generate economies of scale, work with fewer (specialized) wholesalers and have a tight control on quality of the product, modern retailers prefer to work with a system where there is one centralized buying office for one product category and one or several distribution centers over the country to supply local stores. Nevertheless, we found that there are different stages in the development of the centralized distribution system depending on the product category. In the case study countries, we found that in general, the supply of processed and semi-processed products is centralized through a distribution center, while the supply of fruits and vegetables is often still organized at the store level.

For similar reasons as why modern retailers prefer to work with a limited number of wholesalers (reduced transaction costs, tighter control on quality, ...), wholesalers (and modern retailers) prefer to contract with a limited number of producers or a “preferred supplier system”. Usually these contracts include detailed conditions on price, frequency and quantity of delivery and food safety and quality standards that need to be respected. Sometimes these contracts also include farm assistance programs, such as assistance in transport and packaging and advance payments. However, the most important benefit for producers from contracting with specialized wholesalers (or modern retailers) is that they always work with written contracts, which is a way to reduce market risk and have guaranteed sales.

In the past years, there was a rapid increase in product variety for all food products, including processed food, such as milk, bread and sugar. However, this is no guarantee that local food processors benefited from these changes. In general, we found that the number of food processing enterprises has declined, but at the same time the size of the surviving enterprises, both in terms of employment and especially in terms of turnover has increased. However, it is unclear to what extent we can relate these evolutions to the changes in the modern retail sector.

A key concern in the debate on the welfare implications of these changes is that the emergence and rapid spread of modern supply chains will push a large share of farmers and in particular the poor, small farmers, out of the market as retailers prefer to contract with larger and wealthier farmers. However, the impact of modern retail investments and the associated standards on small producers is mixed. In general, modern retailers indicate that they prefer to purchase fresh products, such as fruits and vegetables, from large legal entities. When this is not possible, they supply from small farmers through a specialized wholesaler. However, there are several constraints for (small) farmers when delivering to a modern retailer:

- Procurement mechanisms vary between retailers. Some modern retailers are found to pay only three weeks or even one month after the delivery of the products (trade credit), which can be problematic for farmers that do not have a financial buffer to overcome this period. Others pay more promptly. Nevertheless, the producers and their representatives report that procurement mechanisms vary between retailers and in fact, our producer survey indicates that in 17% of the sales to a modern retailer, the retailer pays a part of the price in advance and the remaining part at the time of delivery.
- In order to be allowed to deliver to some large retailers farmers have to pay an entrance fee, so called “access charges”, which is often too high for small farmers. Already in 2008, the employer organizations and trade unions in Romania, indicated that these “access charges” make it very difficult for small farmers to deliver to modern retailers because they cannot supply sufficient quantities (the “access charges” are substantially higher for producers that are only able to offer

small quantities). As a result, the Romanian government imposed a ban on such practices. However, our interviews with producers and their representatives, indicate that practices such as asking local producers for “access charges” are used by at least some retailers to exclude small producers from getting a contract with a modern retailer.

- Small farmers are often not able to comply to the quality, packaging and sorting requirements of the modern retailers. Producer interviews indicate that modern retailers impose more stringent quality requirements than for example traditional wholesalers. Important to note with respect to quality requirements, is that we do not find a significant difference between the quality requirements that supermarkets and discounters impose on their suppliers.

However, none of interviewed stakeholders indicate that it is impossible for small farmers to produce for a modern retailer. All emphasized the important role that producer organizations can play in overcoming the above mentioned constraints. Currently, these organizations already help farmers to connect to the market by offering them assistance programs, such as extension services and storage facilities, and establishing contacts between farmers and modern retailers.

In the past years, while agricultural employment has decreased, productivity and income of those that remained in farming, increased. Much of this is due to European integration. European integration relates first to the EU accession and the associated changes in policy (increased subsidies and public standards for food quality and safety). Second, European integration also induced massive foreign investments and trade integration prior to accession which made technology, capital, etc. available to the food chains in these countries. At the same time, at least part of the type of product requirements which are now imposed by the retail chains were already introduced with the global integration of these countries over the past years.

In this sense the imposition of more stringent product requirements by modern retailers is more an evolution of a process that has started over the past 15 years rather than a sudden dramatic change with the arrival of new investments. There are two opposing effects. On the one hand, by enhancing the requirements for producers it is likely to have enhanced production constraints and therefore reinforced incentives for the less skilled and low productive farmers to either stop farming or (continue to) produce for subsistence purposes or for local informal markets. On the other hand, it will have reinforced incentives for others to upgrade the quality of their produce and in this way continue to or enter production for the formal higher-quality, and higher-value, markets.

Finally, when discussing the impact of retail investments on small and large farmers it is important to keep in mind that for most of the products which are sold in modern retailers and discount stores the relationship with farms is indirect at best. It is primarily in the area of fresh fruits and vegetables that there is a potential direct relationship between the “modern retailer” and the “farm”. For all other products, such as milk, bread, processed fruits and vegetables, wine, sugar, etc. the impact of retail investments on farms is indirect at most. In these cases, supermarkets and discounters purchase their supplies from food processing companies, such as dairy companies, sugar processors, etc. Most, if not all of these companies, are already operating according to standards imposed by retailers in the major (urban or foreign) consumer areas and following EU rules. Hence for most of these sectors the impact of retailer and discounter investments on local agricultural producers may be quite limited.

Recommendations to maximize positive and mitigate adverse social impacts on producers

- *Prevent unfair trading practices and increase producers' awareness on their legal rights.* From our interviews it appeared that asymmetry in bargaining power between modern retailers and their producers may lead to unfair trading practices, such as the existence of a “access charges” in Romania and Bulgaria. There could be a commission established that analyzes the existence and use of classic cartels, joint purchasing agreements (buying alliances) and private labels. For such practices a careful balancing of efficiency enhancing and potentially anti-competitive effects is needed and a case-by-case analysis based on the specificities of local market conditions is necessary in order to establish the existence of possible competitive harm.
- *Establish a “code of good practice” (public or private).* In order to resolve the tension between modern retailers and their suppliers, they could engage in a “code of best practice”. The terms of such a code could include as main elements: (1) compliance with contracts by retailers and suppliers; (2) equal treatment of suppliers; (3) prompt payments; (4) banning of unfair trading practices. There are already some countries that introduced such a code. In 2002, a private sector code was encouraged by the competition commission in the UK (and later it was made mandatory). Also in Argentina there exists a “code of best practice”.
- *Encourage the development of producer organizations.* Modern retailers demand a constant delivery of products and because sometimes small producers cannot provide the demanded quantity, modern retailers may prefer to work with one large producer instead of several small ones. In order to overcome this problem farmers must form groups (or producer organizations) to help their members to connect to the market by offering them assistance programs, such as extension services and storage facilities, and by establishing contacts between farmers and modern retailers. However, the willingness to cooperate is still weak in most Eastern European countries. First, it will be important that the government creates a clear legal framework in which such activities are possible. For example, in Bulgaria, the person in charge of the producer organization indicated that the producer organization as a legal entity is not allowed to bulk the production of different suppliers, but only to establish contacts between individual producers and modern retailers. Second, there should be a commission that analyzes the existence of joint commercialization agreements and analyzes on a case-by-case analysis whether there exists a potential competitive harm.
- *Encourage innovative private-public actions which increase farmers' access to credit.* An essential problem for (small) farmers is that they do not have access to capital to make investments, which are needed to fulfill the quality requirements that modern retailers impose on their suppliers. In some cases, modern retailers are intermediating between commercial banks and farmers (e.g. offering bank loan guarantees in Bulgaria). However, there is a scope for innovative private-public actions which increase farmers' access to capital. For example, in Mexico there is the “financier rural” program. This program allows the supplier to get immediate cash instead of having a “waiting period” for payment and the bank then invoices the payment from the modern retailers.
- *Increase price transparency in the supply chain.* This will allow us to comparison of prices paid by different stakeholders and provide more information on the price margin that each stakeholder takes. Second, also for farmers such a tool is informative as currently they have only limited information on prices.

Impact on Traditional Retailers

There is some evidence that the emergence of modern retailers has a negative impact on the survival of traditional shops. We found that, in general, gross receipts of traditional shopkeepers have declined since the modern retailer was established in the region, which they themselves relate to increased competition with the modern retailer. In addition, we also find that on average the number of employees in a traditional shop has decreased since the establishment of modern retailers. These findings indicate that modern retailers are putting traditional shopkeepers increasingly under pressure and in the future we expect that the share of traditional shops will decrease even more.

Recommendations to maximize positive and mitigate adverse social impacts on traditional retailers.

- *Advise traditional shops to offer services and products that modern retailers do not offer.* Increased competition from modern retailers may negatively affect gross receipts (and hence business survival) of traditional shops. In order to mitigate these effects, traditional shopkeepers can focus on providing certain services that modern retailers do not provide, such as home delivery, credit provision, ... Another option is to specialize in certain high quality niche products or offering freshly prepared dishes that are not (or less) available in the modern retailer. Modern retailers can mitigate the impact they have on traditional shops by providing advice to traditional shops on offering new services. For example, Metro Group is planning to offer such advisory services to traditional shops when they are setting up cash and carry shops in Kazakhstan.
- *Upgrade human capital as this can be a driving factor behind the emergence of new business activities.* There will be shopkeepers who are not able to face the competition with the modern retailer. However, this should not necessary be a negative evolution as the emergence of a modern retailer can unleash a process of “creative destruction”. This theory, which was first described by Schumpeter, indicates that there are inventions (e.g. emergence of a modern retailer) that result in business failures in certain sectors (e.g. traditional shopkeepers), but despite these failures may lead to net gains because of the positive impacts on economic activity in other sectors. In order to facilitate this transition, it will be important to upgrade human capital in rural regions as this can be one of the driving factors behind the emergence of new business activities. The government could provide support measures for job reconversion, but also modern retailers can provide training programs to train local people for a job in a retail outlet.

Impact on Employment

Besides job destruction through increased competition, modern retailers can also play an important role in job creation in rural regions. Since their establishment, employment in modern retail outlets has increased rapidly. Moreover, we find some indications that job creation by modern retailers exceeds job destruction of traditional shops. However, there was a shift from self-employment to wage employment.

In general, we find that both modern retailers and traditional shops have long opening hours and are open on Saturdays and Sundays. These long opening hours are also reflected in long working hours, especially for self-employed traditional shopkeepers. Also for employees in modern retail chains, we find long working hours and in practice, employees often work longer than officially allowed. A study on Poland reports frequent violations of working time regulation, such as imposing long

sequences of working days, working longer shifts than official shifts and difficulties in taking breaks during the day.

There are also important differences in the work done by employees in modern retailers and self-employed traditional shopkeepers. Traditional shopkeepers usually combine a series of tasks, from filling the shelves to bookkeeping, for which they need a large variety of skills, while employees in the modern retailers have more specific tasks (e.g. filling the shelves, keeping the inventories, ...).

Currently, in the capital and larger cities retailers in Poland, Bulgaria and Romania have difficulties to find suitably qualified workers. Most of them try to improve the human capital of their work force by offering attractive remuneration and organizing training to improve the human capital of their work force. However, in small towns and rural areas, the minimum wage is the standard, especially as far as low skilled sales agents are concerned. Moreover, in rural Romania, there is a large population of workers who are not legally employed and receive a remuneration below the minimum wage. In Poland, modern retailers are found to pay the minimum wage and the rest is paid “under the counter”. However, we are not able to compare earnings in a modern retailer with earnings of traditional shopkeepers as these were reluctant to tell us about their earnings. Moreover, it would be incorrect to compare earnings of a self-employed shopkeeper and earnings of, for example, a salaried cashier, as they may have different responsibilities and skills.

The majority of the workforce in the modern retailers are women (see section on Gender Effects), which implies that the that many of the employment effects disproportionately affect either women or men, depending on whether they are self-employed or being hired as an employee in the modern retail sector.

Recommendations to maximize positive and mitigate adverse social impacts on employment.

- *Encourage the establishment of regular internal audits.* Modern retailers should comply with local employment legislations (working time, minimum wage, ...). Currently, there are studies that signal violations of this legislation in Romania and Poland. The government plays an important role in detecting these practices. However, also the modern retailer should take his responsibility. It is for example possible that the general management is not aware of malpractices in individual stores of the chain (e.g. in case of franchising). In that case the modern retailer can set up an internal audit to detect malpractices in the individual stores and take appropriate measures to avoid future violations of the employment legislation.
- *Increase awareness among employees on legal rights.* Besides setting up an internal audit system, modern retailers should encourage (or at least not obstruct) actions that increase awareness among the employees with respect to labour legislation.
- *Increase labour market flexibility.* In order to help employees, which are mainly women, combine their work and family life, modern retailers could offer their staff the possibility to work part-time, but in addition they could introduce shift patterns, which are communicated a long time upfront in order to allow employees to arrange possible family obligations. In addition, modern retailers could also organize the provision of child care facilities (at cost price). The latter will only be profitable in larger plants.

Gender Effects

The main gender effect from discounter and modern retail investments is indirect through the shift from employment in small shops to larger retail outlets, and the associated working conditions. Mainly women benefit from this shift from self-employment to wage employment as mainly women are employed as employees in the retail sector. Hence, this implies that many of the employment effects disproportionately affect either women or men.

The welfare effect for the women employed by the modern retailer depends on what these women were doing before being employed. In general, most of the women that are employed as lower staff (e.g. cashiers) are young and low skilled and they were unemployed or still at school when sending their application to the modern retailer. For these women employment in a modern retailer might have a positive welfare effect in spite of the long working hours and low wages. For those previously employed as self-employed shopkeepers, the welfare effects are less obvious and wage employment may imply a step down. However, it is difficult to compare working conditions and wages in self-employment and wage employment.

Another concern related to gender inequality in modern retailer is that women get no (or less) opportunities than men to be promoted into store supervision or management. As the management of the modern retailers was reluctant to answer this question and prevented from us from interviewing their staff, we have only some ad hoc evidence on this matter. This indicates that the problem is rather limited. First, several managers of modern retail stores that we interviewed were women, which is a first indication that gender discrimination is rather limited. Second, in a Polish case study on the working conditions of female workers in supermarkets/ hypermarkets, the authors also find no evidence of gender discrimination for jobs in store supervision or management. Nevertheless, the women in the study mention that it is not uncommon that during the recruitment process questions about marital status, number and age of children and planned pregnancy are asked, but they have no information on the extent to which employers use this information when selecting a candidate.

Recommendations to maximize positive and mitigate adverse gender impacts

- *Increase awareness on legal rights.* Although we have no evidence on gender discrimination by modern retailers, it is important that there is an employee (for example a member of the labour union) which women can approach with complaints and questions about their legal rights.

Impact on Social Cohesion

Several studies have analyzed the impact of modern retail investments on the social infrastructure of a community, both from an empirical and a theoretical point of view. However, the impact of modern retail investments on social capital is still unclear. Some studies have pointed at the negative impact of modern retail investments and the associated decline in small local shops on the social infrastructure of regions. They argue that small, local shops and their owners play an important role in social relationships, norms and trust in a community. In addition, the disappearance of traditional shops also affects the supporting industry within communities that serves these traditional shops. However, other studies have pointed out that there is also a positive effect of modern retail investments on social capital as lower prices and more convenient shopping in modern retailers lead to an increase in the money and time available for social capital producing products/ activities. We have no evidence on the net effect of investments on social capital in the countries under consideration in general and no clear evidence either way came out of our interviews.

Recommendations to maximize positive and mitigate adverse impacts on social cohesion

- *Provide facilities for social interaction.* Modern retail investments and the associated decline in small local shops may have a negative impact on social interactions within a region. However, modern retailers are usually located in a new commercial center which in most cases accommodates facilities where individuals can gather to have a drink or a meal. If these facilities are not provided by third parties, modern retailers can themselves set up a bar or a restaurant. In addition, modern retailers can provide for example benches in the entrance hall and outside the store, where older (and younger) individuals can sit down without being obliged to buy a coffee or a meal.

1. Introduction

1.1 Background

Since its creation, the European Bank for Reconstruction and Development (“the EBRD” or “the Bank”) has invested in a series of projects aiming at strengthening the distribution of food products.

Over the last years, the EBRD has supported — through targeted investments — the emergence of modern retailing systems in the region, most noticeably in Central and Eastern Europe, South Eastern Europe, the Western Balkans and Russia. In doing so, the Bank has visibly supported large retailers, such as the Schwarz Group (Germany) in Poland, Romania and Bulgaria and Cora (France) in Romania and Bulgaria. It has also supported local retail groups.

For the EBRD, the rationale for supporting investments in the food retailing sector to date has mostly focussed on the impact the emergence of modern retailers has on the whole food supply chain. To enhance the economic and transition impact of the Bank’s investments in the food retail sector it would like to obtain a better understanding of the social impact of retail investments on the more remote regions of these countries.

1.2 Objectives

The objective of this study is to review the potential social implications in these regions, based on an analysis of the social impact of food retailing system in other developing regions of the world and on primary data available in countries of operation of the EBRD where food retailing systems have already started to develop, and the outcome of some field trips.

More specifically, the first objective of the study is to summarise the conclusions on social impacts of discount- and organised retail formats on the more remote areas of countries with economies comparable to Poland, Romania and Bulgaria over a longer period of time, whilst gathering general demographic and socio-economic data/indicators for each country and providing guidance on splitting these countries into geographic areas (i.e. from relatively disadvantaged to relatively well-off) to help identify locations of investment.

The second objective is to validate/qualify the conclusions from the first objective through a study of discount and organized retail formats operating in Poland, Romania and Bulgaria, and to draw inference and apply these conclusions to judge the prospective social impact of the Bank’s potential investments on a remote area of each of Romania and Bulgaria, whilst providing recommendations on how EBRD’s food retail investments could maximise positive-, and mitigate any adverse social impacts.

1.3 Methodology

The analysis and conclusions in this report draw upon a combination of different sources of information and insights. The first source is existing studies. The second source is statistical material from a variety of sources that could be collected through desk study work. The third

source is statistical data and qualitative information we had collected in previous studies which is relevant for the current report. The fourth source is newly collected data based on new interviews and surveys.

A number of important methodological issues should be mentioned up front.

First, the existing literature on the social impact of changes in the retail sector is rapidly growing. It yields important insights for the purpose of this study. At the same time both the specific issues addressed, the geographical focus, and the quality of the previous analyses and existing studies impose constraints on how much conclusions can be reliably drawn for the purposes of the current study.

Second, in the process of writing this report, we paid special attention to existing impact studies in Bulgaria, Romania and Poland, or Eastern Europe more generally. However, because there are only a limited number of studies available on this region, we extended the literature review by providing evidence from other transition, emerging, and even developing countries. We will draw conclusions from these studies to the extent that we feel confident that one can extrapolate findings on the social impact of changes from these regions for the retail sector in Bulgaria, Romania and Poland. Obviously, the relevance of studies from other regions will differ from issue to issue, and we will treat them accordingly to the extent possible.

Third, we have complemented the literature review and data from existing sources by empirical findings based on interviews done in the course of this study with various stakeholders in the countries, and in particular in remote areas of the countries. More specifically, we interviewed and collected data from modern retailers, traditional shopkeepers, consumers and producers and their organizations in Bulgaria, Romania and Poland. Our interviews took place in June-July 2010. In each country, we randomly selected a rural region.¹ The selected regions were respectively Ialomita in Romania, Sandomiersko-jedrzejowsko in Poland and Pazardhik and Burgas in Bulgaria². In each region, we interviewed stakeholders in small towns or — if possible — in villages.

Fourth, it should be emphasized that, given the stringent time and budgetary constraints, in addition to the refusal of some of the key stakeholders to cooperate (see below) it was not possible to collect statistically representative and/or complete information. We have tried to keep these constraints in mind when interpreting the data and the information and to draw conclusions of which we were relatively confident, given the various sources of information at our disposal.

Fifth, specifically, in each country, interviews were undertaken with the following stakeholders:

- (i) **Retailers.** In each country we contacted a series of retailers and in particular those which have stores located in remote areas. The survey included several open and closed questions on the organizational structure of the chain, the evolution of sales in the store, the variety of products sold, the employment conditions, the procurement strategy (with a special focus on fresh produce), ...

1.- The regions are defined at the NUTS3 level and in order to determine whether a region is rural, we use the OECD definition (see section 2.1.2).

2.- In Bulgaria, we selected in addition to Pazardhik also Burgas, because we did not find a discount store that was willing to cooperate in Pazardhik. In Bulgaria, discount retail formats are only a very recent phenomenon and hence are less widespread in rural areas compared to Poland or Romania.

The reaction was mixed. Some, such as Kaufland, refused to cooperate in all of the countries. Others were reluctant and only provided limited information. Some were more cooperative and provided more extensive information. Still, we were able to interview several retailers and discounters. More specifically, in each country, we interviewed the management of two supermarkets and two discount stores³, including at least one foreign retailer with outlets in remote/rural regions in each country. Nevertheless their willingness to cooperate with the study, the shop managers of the interviewed stores asked us for confidentiality on the data and therefore we opt to give no detailed information on which stores we interviewed.

(ii) **Traditional shopkeepers**⁴. We also interviewed a series of traditional shops. In each country we interviewed four traditional shopkeepers, half of which are located in the proximity of the modern retailer and half of which are located at a certain distance from the store (15–30km), such that there is less direct competition with the modern retailer.

(iv) **Consumers**. We interviewed representatives of consumer organizations (except for Bulgaria, where we did not find a suitable consumer organization) and a series of 60 consumers in each country. The consumers were selected randomly when they left the shops (half of the interviewed consumers were shopping at a modern retailer and half were shopping in a traditional shop⁵). However, given the limited size of the sample and the absence of a well-designed statistical selection procedure⁶, the consumer sample may not be fully representative of the local population.

(iv) **Producers**. We interviewed in each country three producer organization specialized in fruits and vegetables. The specific commodity specializations varied by country:

- **Tomato and cucumber producers in Bulgaria:** One organization is exclusively handling tomatoes and has 18 members, all legal entities. The organization is delivering tomatoes to the local market (1% of its production), the processing industry (80%) and modern retailers⁷ (19%). The second producer organization counts 43 members, a mix of large (32) and small household farmers (11), and is delivering tomatoes and cucumbers to the local market (30%), traditional wholesalers (50%), modern retailers (15%) and the export market (5%). The third producer organization is specialized in cucumbers and has 9 members, all small household farmers. The organization is delivering cucumbers to the local market (20%), the processing industry (40%), traditional wholesalers (25%) and modern retailers (15%). ;
- **Tomato, water melon, cherry, apple, cabbage and potato producers in Romania:** One organization is specialized in tomatoes and watermelons and counts 42 members, all small household farmers.

3.- In Poland, we were only able to interview the management of one discount store. We contacted the management of several other stores of different retail chains (also in other regions) but none was willing to cooperate with the study.

4.- In order to have some idea on how the emergence of modern retail chains has affected traditional food supply chains, we interviewed a series traditional shopkeepers. Traditional shops are important competitors of modern retailers, but also open markets play major role in the food supply chain in rural regions. Therefore we also incorporate some insights from our producer interviews as almost all producers that we interviewed which are selling to modern retailers, are also selling a part of their production on the open market.

5.- From those that have been shopping in traditional shops we selected half of the interviewed consumers in traditional shops close to the modern retailer and half of them in traditional shops far from the modern retailer.

6.- We selected every fifth consumer that left the shop and that was willing to cooperate with the study. However, this methodology can yield biased results because of two reasons. First, only individuals willing to participate in a consumer survey are in the sample. Second, the consumers are selected at a certain time of the day which could bias the results as consumers buying groceries on Monday morning may have a different profile than those visiting the shop on Friday evening.

7.- In the group modern retailers, we included specialized wholesalers working for a modern retailer.

The organization is delivering tomatoes to the local market (30%), traditional wholesalers (50%) and modern retailers (20%) and water melons to the local market (25%), traditional wholesalers (40%), modern retailers (15%) and the export market (20%). The second organization is specialized in cherries and apples and counts 42 members, a mix of large (4) and small household farmers (38). The organization is delivering cherries to the local market (5%), the processing industry (90%) and the export market (5%), while the organization is delivering apples to the local market (96%) and modern retailers (4%). The third organization is specialized in cabbage and potatoes and counts 34 members, all small household farmers. The organization is selling cabbage to the local market (15%), the processing industry (5%), traditional wholesalers (35%) and modern retailers (45%) and potatoes to the local market (30%), traditional wholesalers (60%) and modern retailers (10%);

- Apple, pear, tomato and cucumber producers in Poland: One organization counts 35 members, a mix of small (18) and large (17) farmers and is apples delivering to the processing industry (5%), traditional wholesalers (30%) and modern retailers (65%). The second organization counts 21 farmers, which all have their own cold storage facilities and is delivering, among other types of fruits, apples and pears to the export market and modern retailers. The third organization counts 10 farmers, with a farm size between 2 and 6 ha, and is selling tomatoes (90% of the sales) and cucumbers (10% of the sales) to traditional wholesalers and modern retailers.

In addition, we interviewed in each country 15 individual fruit and vegetable producers delivering to various trading partners, including the local market, traditional wholesalers, traditional shops and modern retailers (including discounters).

We also used data from extensive survey work among producers in these countries which was collected in earlier studies in the past years.

Sixth, our interviews specifically targeted stakeholders in rural and remote areas, which makes the information complementary to existing data, virtually all of which is only available at the aggregate level or for urban areas. Hence these interviews provided information which was especially useful for the purpose of this study and for comparative purposes.

1.4 Organization

The report is organized in four parts. Section 2 provides an analysis of demographic and socio-economic data of the three countries concerned. Section 3 analyzes the transformation of the discount and organized retail industry. Section 4 discusses the rapid growth and recent developments in the retail sector in Poland, Bulgaria and Romania. Section 5 analyzes expected and actual social impacts of discount and organized retail investments in remote areas of the three countries based on key findings from the literature on the relative impact of modern versus traditional retail on different stakeholders in the food system complemented by our own data.

An executive summary of the report is provided up front.

2. Demographic and Socio-Economic Analysis of Regions in Poland, Bulgaria and Romania

This section provides a comparative analysis of regions in Bulgaria, Romania and Poland to identify key characteristics of remote regions in these countries.

Despite some common features, there are major differences between regions in Bulgaria, Romania and Poland in terms of demographic and socio-economic development.

The data presented in this section identify key characteristics of various regions across the countries' geographic areas which should be useful in terms of discussions on where new investment in the retail industry could be located. For each country, we present regional data on different demographic and socio-economic factors. For each indicator the report includes a visual summary in the form of a map of the country based on the NUTS3 classification. These maps and further details, including a detailed list of the NUTS3 regions can be found in the appendix of the report. The NUTS3 classification was chosen because it is commonly used by Eurostat to divide a country into different geographical regions.

2.1 Demographic Analysis

The demographic features of a region have an important impact on and are a consequence of economic growth and living conditions in the region, which in turn affect the type of consumers, the number of consumers and their expenditures in retail outlets in the region. Therefore it will be important to take the demographic features of a region into account when analyzing the social impact of retailers' investments in a certain region. This section analyzes in turn differences in population (change), population density and age distribution between regions.

2.1.1 Population & Change

The country with the largest population of the three countries is Poland, which has slightly more than 38 million of inhabitants, while Bulgaria, with a population of approximately 7,5 million inhabitants, is the country with the smallest population of the three countries. In between is Romania with approximately 21,5 million inhabitants (Table 1).

All three countries experienced a decline in population in the period 2002 — 2008 because of low fertility rates and high emigration levels. Especially Bulgaria witnessed an extremely decline in population as the total population declined by 3,2% in the period 2002 — 2008, a dramatic change for an EU member state. In Poland, the decline in population was much more modest and population only declined by 0,3% in the same period (Table 1).

Besides differences between countries, there are also substantial differences between regions (see Appendix 7.1). In Bulgaria, population decline varied between 0,34% in Varna to 12% in Vidin in the period 2002–2008. Population increased only in Sofia, the capital of Bulgaria.

The population decline in Romania was less extreme than in Bulgaria. Nevertheless population decreased in most regions and population decline varied between 0,14% in Sibiu and 6,9%

Table 1: Population and Change in the Period 2002–2008

	2002	2008	% change in 2002–2008
Bulgaria	7.891.095	7.640.238	–3,2%
Poland	38.242.197	38.115.641	–0,3%
Romania	21.833.483	21.528.627	–1,4%

Source: Eurostat Online Database

in Teleorman in the period 2002–2008. The population increased only in 7 out of 44 NUTS3 regions (Suceava (0,01%), Brasov (0,12%), Bucharesti (0,37%), Constanta (0,82%), Timis (1,70%), Iasi (1,75%) and Ilfov (7,6%)).

The decline in rural population and increase in urban population, as observed in Bulgaria and Romania, is in contrast with the situation in Poland. In the period 2002–2008, the overall population declined somewhat in Poland but at the same time, there was significant population growth in the rural regions around the big cities, while the big cities themselves faced a decline in population. This corresponds with a substantial migration from urban regions to more rural regions in Poland in this period.

2.1.2 Population Density

Population density is typically an important factor for retailers in determining where to invest in new retail outlets. After all, they need to reach sufficient consumers in order to be profitable.

As we will document in more detail in section 4.1.3, modern retailers typically first invest in the regions with the highest population density, such as the capital and the larger cities. Later, when these markets get saturated, they consider investing in smaller towns in more remote and typically more rural regions.

Table 2 shows that there are substantial differences between the countries in terms of population density. Poland is the most densely populated of the three countries, with a population density of on average 122 inhabitants per square kilometre. In Bulgaria, the population density was the lowest of the three countries and in 2008 there lived on average 69 persons per square kilometre. In Romania, population density was intermediate and on average there were 93 inhabitants per square kilometre.

Table 2: Population Density in Bulgaria, Poland and Romania (inhabitants per km²)

	2001	2002	2003	2004	2005	2006	2007	2008
Bulgaria	71,3	70,9	70,5	70,1	69,7	69,4	69,0	68,8
Poland	122,3	122,3	122,2	122,1	122,1	122,0	121,9	121,9
Romania	97,50	94,8	94,5	94,3	94,1	93,9	93,7	93,1

Source: Eurostat Online Database

However, besides differences between countries, there are also large differences between regions (see Appendix 7.2). In Bulgaria, for example, population density varied between 36,5 inhabitants

per square kilometre in the regions outside Sofia, whereas in Sofia itself, population density was much higher, namely 919 inhabitants per square kilometre. This is well below the population density of the capital region of Romania, where there lived 10.504 inhabitants per square kilometre in 2007. However also in the rural regions population density in Romania was substantially higher than in Bulgaria. In Poland, population density varied between 44 inhabitants per square kilometre in Suwalski and 3.307 inhabitants per square kilometre in Miasto Warszawa, the capital region.

OECD used these population density indicators to develop a definition for a “rural” region. Regions are classified in one of the three categories (OECD 1994; 2005):

- *Predominantly rural regions (PR)*: if more than 50% of the population is living in rural communes (with less than 150 inhabitants per square kilometre). However, when there is an urban centre with more than 200.000 inhabitants representing no less than 25% of the population in a “predominantly rural” region, it is reclassified as “significantly rural”.
- *Significantly rural regions (SR)*: if 15% to 50% of the population is living in rural communes (with less than 150 inhabitants per square kilometre). However if there is an urban centre with more than 500.000 inhabitants representing no less than 25% of the population in a “significantly rural” region, it is reclassified as “predominantly urban”.
- *Predominantly urban regions (PU)*: if less than 15% of the population is living in rural communes (with less than 150 inhabitants per square kilometre).

Applying the OECD definition on the NUTS3 regional level in the three countries shows these three countries, looked from a territorial perspective, are quite rural. The only regions that are classified as predominantly urban are the capital regions and some regions in Poland (e.g. Krakow, Wroclaw,...). All other regions are classified as predominantly or significantly rural (see Appendix 7.2).

2.1.3 Age Structure

The age structure of the population is an important demographic factor that retailers take in account as one should expect differences in consumer behavior depending on the age of the consumer.

Ageing of population is an important issue in all industrialized countries. Table 3 presents the age structure of the population in the three countries. The share of population younger than 31 years is between 35% and 40%: it is the highest in Poland where approximately 40% of the population is younger than 31 years, while in Bulgaria the population is on average older and only 35% of the population is younger than 31 years. In Romania, 39% of the population is younger than 31 years.

Table 3: Age structure of the population in Bulgaria, Poland and Romania (%; 2009)

	<18 year	18-30 year	31-45 year	46-65 year	>65 year
Bulgaria	17%	18%	22%	27%	16%
Poland	19%	21%	20%	27%	13%
Romania	19%	20%	23%	24%	14%

Source: Eurostat Online Database

There is also variation in the age structure among regions (see Appendix 7.3). In Bulgaria for example, in the northwestern region, Vidin, 23,9% of the population is older than 65 years and in the mountainous region, Kyustendil, 21,1% of the population is older than 65 years. The only Bulgarian regions where the share of the population older than 65 years is smaller than or equal to 15% are Sofia (14,8%) and Blagoevgrad (14,8%).

In Romania, 14,9% of the population is older than 65 years. However, there are large regional differences. Like in the case of Bulgaria, the population in the capital and the region close to the capital is younger than in the rural regions. For example, in Bucharest the share of the population that is older than 65 years in 2009 is 14,2%, while in the southern rural region, Teleorman, the share of the population older than 65 years is 21,6%.

In contrast to Bulgaria and Romania, the share of the population older than 65 years is substantially lower in Poland: in 2009 only 13,5% of the population is older than 65 years. There is also a large difference in the regional variation of age patterns in Poland. Unlike in Bulgaria and Romania, the population in the Polish capital and large cities is substantially older than in the rural regions. For example, in Miasto Warszawa, the region of the Polish capital, 17,2% of the population is older than 65 years, while in Pilski and Poznanski, two rural regions, respectively only 10,9% and 10% of the population is older than 65 years.

2.2 Socio-Economic Analysis

The socio-economic characteristics of a region, such as income and unemployment rate, have important implications for retail investment in a region because they affect the purchasing power of its population. In this section, we analyze regional differences in income, unemployment, the role of agriculture in the economy and mobility.

2.2.1 Income

In the period 1999 — 2008 there was a very strong growth in GDP per capita in all three countries. GDP per capita (at constant 2007 prices) increased by 63% in Bulgaria, by 45% in Poland and by 66% in Romania (Table 4).

In 2008, GDP per capita in Bulgaria was the lowest of the three countries, namely 4.028€ per capita, while in Poland GDP per capita was 8.610€ per capita, more than double that of Bulgaria. Romania's GDP per capita was in between: 6.226€ per capita in 2008.

Table 4: GDP per capita in Bulgaria, Poland and Romania (1999–2008; euro*)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Bulgaria	2469	2602	2708	2830	2971	3169	3366	3579	3800	4028
Poland	5956	6210	6285	6376	6623	6977	7229	7679	8200	8610
Romania	3740	3830	4047	4253	4476	4856	5057	5456	5800	6226

*Constant 2007 prices

Source: Eurostat Online Database

However, everywhere there are large regional disparities (see Appendix 7.4). In general, the regions in which the capitals and larger cities (e.g. Sofia, Warsaw, Bucharest, Plovdiv, Cluji, Łódź, Wrocław, ...) are located, are much richer. GDP per capita can be up to three times higher than the national average.

In Bulgaria, the regions closer to the border with Greece are richer (e.g. Blagoevgrad and Smolyan), whereas the regions close to the border of Serbia and Romania are poorer (e.g. Vidin and Montana). In the east, Burgas and Varna are two richer regions, because of the proximity of the Black sea.

In Romania, GDP per capita in the rural areas varies between 2.500 € per capita in Vaslui, a region close to the Moldavian border and 8.400 € per capita in Timis, a region close to the border of Hungary.

Also in Poland, there is a large heterogeneity in GDP per capita across regions: the regions closer to the German and Czech border are richer (e.g. Opolski and Bielski), whereas the regions close to the border of Slovakia, Ukraine and Belarus are poorer (e.g. Elecki, Lubelski and Przemyski).

2.2.2 Unemployment

In the years after transition, liberalization and market reform policies caused a large decline in employment and consequently a substantial increase in unemployment. The increase in income which started in the second half of the 1990s coincided with a decline in the unemployment rate. Over the period 2002 — 2008 there was a steady, but persistent decline in the unemployment rate in all three countries (Table 5).

In 2008, unemployment was the lowest in Bulgaria and Romania, where respectively 5,6% and 5,8% of the active population was unemployed⁸. In Poland, the unemployment rate was higher and approximately 7% of the active population was still unemployed in 2008.

Table 5: Unemployment in Bulgaria, Poland and Romania (2002–2008; %)

	2002	2003	2004	2005	2006	2007	2008
Bulgaria	na	13,7	12,0	10,1	9,0	6,9	5,6
Poland	19,9	19,6	18,9	17,7	13,9	9,6	7,1
Romania	8,4	7,0	8,1	7,2	7,3	6,4	5,8

Source: Eurostat Online Database

In general, in all three countries, the unemployment rate is larger in rural regions compared to urban regions (see Appendix 7.5). For example in Bulgaria, the unemployment rate varies between 16,7% in Shumen, a rural region in the north-east of Bulgaria, and 2,5% in the capital region. In Romania, the region with the highest unemployment rate is the south eastern region Gorj (14,9%) while in Bucharest the unemployment rate is very low (3,1%) in 2008. In Poland, overall unemployment rates are substantially higher. In 22 regions unemployment rates were higher than 8%, while only

8.- Note that these figures represent the official unemployment figures, which are only an approximation to the real unemployment figures. Some part of the labour force will be discouraged from searching for employment and therefore classified as “economically inactive” or is working on a family farm and does not register as unemployed although not working at full capacity (“hidden unemployment”).

in three regions (Trojmiejski, Gdanski and Miasto Poznan) less than 4% of the active population was unemployed.

2.2.3 Mobility and Car Ownership

Besides income and employment, also the mobility of people in region and the ease with which consumers can visit a modern retail outlet will be important. However, data on mobility is limited. There are only comparable data on private car ownership across countries and regions and these are only available on NUTS 2 level, which is less detailed than the NUTS 3 level that we presented for all other indicators in this report.

As an indicator of private mobility, we use data on car ownership as a comparative mobility indicator across countries and regions (see Appendix 7.6).

The country where there are the most cars per hundred inhabitants is Poland. In 2008, there were on average 42 cars per hundred inhabitants. The number of cars per hundred inhabitants varies between 37 cars per hundred inhabitants in the regions Podkarpackie, Podlaskie and Warmińsko-Mazurskie in the eastern part of Poland and 49 cars per hundred inhabitants in Mazowieckie, the region of the capital Warsaw.

In Bulgaria, there are on average 31 cars per hundred inhabitants in 2008, but there is a substantial variation across regions. In the northern regions, Severozapaden and Severen tsentralen, there are only on average 26 cars per hundred inhabitants, while in the capital region there are on average 41 cars per hundred inhabitants.

Car ownership in Romania is much more limited compared to Bulgaria and on average there are only 19 cars per hundred inhabitants in 2008. In the north eastern region, which is the region that is the closest to Moldova, there are only 11 cars per hundred inhabitants, while in the capital region there are on average 47 cars per hundred inhabitants.

Unfortunately, there is only ad hoc evidence on public transport facilities and road infrastructure, especially in the most remote regions.

In 2007, a survey on the provision of basic services in Bulgaria shows that 82.700 inhabitants of 760 rural settlements (or approximately 4% of the rural population⁹) have no access to a daily bus service to the municipality centre (Ministry of Agriculture and Food, 2007). Also in Poland and Romania, there is a scope for important improvements in the coverage of the public transport network (mainly buses), especially in regions where the road infrastructure is relatively poor (Polish Ministry for Agriculture and Rural Development, 2007; Romanian Ministry of Agriculture and Rural Development, 2007).

Also in the other countries an important constraint for the development of rural public transport facilities is the poor road infrastructure. In Romania, only a very low percentage of the communal roads was modernized in 2006, varying between 0,28% in the Harghita and 25,15% in the Olt (five of the counties — Botosani, Buzău, Covasna, Tulcea and Vrancea had none of the communal roads modernized) (Romanian Ministry of Agriculture and Rural Development,

9.- Calculations based on estimates of the rural population from the UN database "World Urbanization Prospects".

2007). In Bulgaria, a 2007 survey indicated the need to reconstruct more than 8.600 km of roads and 4.900 km of streets in rural municipalities and the reconstruction of municipal roads and streets is rated as the highest priority by more than 50% of the rural municipalities (Ministry of Agriculture and Food, 2007).

These findings are confirmed by our consumer survey. Most of the consumers use a their own car (or the car of friends or family) (62% of the consumers) or go on foot (20%) to the modern retailer, while only 18% of the consumers uses public transport. Nevertheless, 30% of those that use their own car or go on foot indicate that they would use public transport if there was a more frequent connection between their house and the modern retailer.

2.2.4 Importance of the Agricultural Sector

In all three countries, the agricultural sector still plays an important role in terms of gross value added (GVA) and employment compared to the situation in the EU15. Hence, potential changes in local procurement systems by modern retailers will not only have an important impact on the agricultural sector, but also on the overall economy. As we will show, agricultural employment remains very high in some of the rural regions, although there are rapid changes.

Despite the steady decline in importance of the agricultural sector in GVA over the period 2000 — 2007, the agricultural sector in all three countries still represents a significant share in the economy (and much higher than in the EU15). In Bulgaria and Romania, the share of agriculture in total GVA was more than 12% in 2000 but rapidly declined to respectively 6,2% and 6,5% by 2007, while in Poland this is 4,3% (Table 6).

Table 6: Agricultural GVA in Bulgaria, Poland and Romania (%)

	2000	2001	2002	2003	2004	2005	2006	2007
Bulgaria	13,9	13,4	12,2	11,7	11,0	9,4	8,5	6,2
Poland	5,0	5,1	4,5	4,3	5,0	4,5	4,3	4,3
Romania	12,1	14,7	12,6	13,0	14,1	9,5	8,8	6,5

Source: Eurostat Online Database

Unsurprisingly, the share of agriculture in GVA is the lowest in the regions where the capital or other important large cities are located (see Appendix 7.7). Nevertheless, there is a large heterogeneity in the importance of the agricultural sector across regions in the three countries:

- In Bulgaria, in 6 out of 26 rural regions the share of the agricultural sector is higher than 16%: Kardzhali (25,1%), Silistra (24,3%), Razgrad (19,3%), Vidin (19,1%), Dobrich (18,0%) and Montana (17,0%). The only rural region where the share of the agricultural sector in GVA is lower than 4% is the coastal region, Varna, which is dominated by touristic services.
- Also in Romania, the agricultural sector still plays an important role in the economy of the rural regions. The share of agriculture in GVA varies between 3,5% in Prahova and 18,3% in Covasna.
- In Poland, the agricultural sector is less important than in Bulgaria and Romania. Only in two regions the agricultural sector represented more than 16% of GVA: Ostrołęcko-siedlecki

(19,0%) and Lomzynski (17,0%), while in 12 regions, the share of agriculture in GVA is less than 4%, varying between 0,1% in Trojmiejski and 3,8% in Jeleniogórski.

While the contribution of agriculture to GVA has declined substantially, in terms of employment, the agricultural sector still represents a large share in total employment in all three countries — see Table 7. In Romania, the share of the agricultural sector in total employment is the highest of the three countries and more than 30% of the active population is employed in agriculture, but also in Bulgaria and Poland, the share of agriculture in total employment is high, respectively 19,7% and 14,7%. These shares are huge if one compares them with the EU15 or even EU27 average. For example, in 2007, agricultural employment in the EU15 was only 3,4% and in the EU27 it was 5,8% (Eurostat online database).

The very large difference between the share of GVA and the share of employment indicates the low productivity of agriculture in these countries. However, it also suggests that the introduction of the modern food and retail sectors may have important effects.

Table 7: Employment in the agricultural sector in Bulgaria, Poland and Romania (%)

	2000	2001	2002	2003	2004	2005	2006	2007
Bulgaria	24,4	24,1	23,9	23,1	22,3	21,4	20,4	19,7
Poland	26,3	19,1	19,3	18,4	18,0	17,4	15,8	14,7
Romania	46,2	45,7	35,4	37,6	33,3	33,3	30,6	30,3

Source: Eurostat Online Database

There is also substantial variation between regions (see maps in Appendix 7.7). Unsurprisingly, the share of agriculture in total employment increases with the degree of rurality.

- In rural Bulgaria, the share of agricultural employment in total employment in 2007 varies between 11,1% in the coastal region of Varna and 52,1% in the central region of Yambol.
- In Romania, the share of the agricultural employment is very high and in 15 regions more than 40% of the active population is working in the agricultural sector. Especially, in the regions close to the border of Moldova and Bulgaria, the share of agricultural employment in total employment is very high.
- In Poland, the average share of the population working in agriculture is much lower than in Bulgaria and Romania. Nevertheless, in several regions in eastern Poland the share of agricultural employment in total employment is higher than 40%. In Western Poland, agricultural employment is less important.

2.3 Statistical Analysis

In this section, we analyze how the different indicators relate to each other, which will allow us to give some indication where the establishment of discount stores will have the most important impact on the rural population.

We analyzed the correlation of various indicators. In addition to the correlation analysis, we also analyzed the data with a more advanced statistical analysis, a Principal Component Analysis (PCA). The results of this analysis are consistent with the results of the correlation analysis and yield similar conclusions. The results of the PCA are discussed in detail in Appendix 7.8.

The correlation between the different indicators for the regions in Bulgaria, Poland and Romania are summarized in respectively Table 8A, Table 8B and Table 8C. Based on these results, we find that in general rural and remote regions have a lower GDP per capita, higher unemployment and higher importance of the agricultural sector. Many of these regions also have a larger share of old persons in the total population and high out-migration.

These are characteristics of rural and remote regions in general — compared to more urban areas. There are differences between countries. When we consider the main indicators that modern retailers and discounters are most likely to take in account when investing in a certain region (GDP per capita, mobility and population density), we find substantial differences between Romania and the other two countries. For example, while we found only a limited correlation between GDP per capita and the number of cars per hundred inhabitants in Poland and Bulgaria, we find a large negative correlation in Romania. In addition, we also find a large negative correlation between the share of older inhabitants and GDP per capita in Romania, while in the other two countries this correlation is smaller. Finally, we also find a negative correlation between the number of cars per hundred inhabitants and population density in Romania, while in the other two countries, there is a positive correlation. Also for Poland, we find an important difference in the indicators compared to the other countries. While in Bulgaria and Romania, inhabitants of more densely populated regions are in general younger, the opposite holds for Poland, where inhabitants of more densely populated regions are in general older.

The rural regions that are the worst off are: in Bulgaria, the mountainous regions close to the border with Romania (Vidin and Montana); in Poland, the regions close to the border with Belarus and Ukraine (Lomzynski, Bialski and Chelmsko-Zamojski) and some regions in the middle of Poland (Sieradzki, Skierniewicki and Sandomiersko-jedrzejowski); in Romania, the regions close to the border with Bulgaria (Giugiu , Calarasi and Olt).

The rural regions that are the best off are: in Bulgaria, the regions close to the Black Sea (Varna and Burgas); in Poland, the regions close to the border with the Czech Republic (Opolski and legnicko-Glogowski and Bydgosko-Torunski) and, the rural regions in the predominantly urban voivodeship Slaskie (Czestochowski and Bielski); in Romania, the regions located in central Romania (Sibiu and Brasov) and close to the border of Hungary (Timis) and to the Black Sea (Constanta).

Table 8A: Correlation between the indicators for rural regions in Bulgaria

	Change in population	Population density	Population > 65 years	GDP per capita	Unemployment	Cars per 100 inhabitants	Agri. GVA	Agri. employment
Change in population	1.000							
Population density	0.5664	1.000						
Population > 65 years	-0.748	-0.289	1.000					
GDP per capita	0.473	0.520	-0.104	1.000				
Unemployment	-0.368	-0.472	-0.046	-0.571	1.000			
Cars per 100 inhabitants	0.175	-0.132	0.019	0.213	0.003	1.000		
Agricultural GVA	-0.422	-0.558	-0.049	-0.791	0.648	-0.142	1.000	
Agricultural employment	-0.347	-0.476	0.117	-0.627	0.278	-0.067	0.579	1.000

Source: Own Calculations based on Eurostat Online Database

Table 8B: Correlation between the indicators for rural regions in Poland

	Change in population	Population density	Population > 65 years	GDP per capita	Unemployment	Cars per 100 inhabitants	Agri. GVA	Agri. employment
Change in population	1.000							
Population density	-0.091	1.000						
Population > 65 years	-0.660	0.326	1.000					
GDP per capita	0.110	0.551	-0.054	1.000				
Unemployment	-0.446	-0.313	-0.044	-0.244	1.000			
Cars per 100 inhabitants	0.345	-0.021	-0.270	0.264	-0.262	1.000		
Agricultural GVA	-0.217	-0.424	0.111	-0.488	0.071	0.171	1.000	
Agricultural employment	-0.238	-0.391	0.352	-0.638	0.093	-0.153	0.718	1.000

Source: Own Calculations based on Eurostat Online Database

Table 8C: Correlation between the indicators for rural regions in Romania

	Change in population	Population density	Population > 65 years	GDP per capita	Unemployment	Cars per 100 inhabitants	Agri. GVA	Agri. employment
Change in population	1.000							
Population density	0.519	1.000						
Population > 65 years	-0.563	-0.146	1.000					
GDP per capita	0.631	0.327	-0.434	1.000				
Unemployment	0.077	-0.030	-0.132	0.239	1.000			
Cars per 100 inhabitants	0.570	0.274	-0.189	0.694	0.205	1.000		
Agricultural GVA	-0.259	-0.415	0.153	-0.612	-0.214	-0.310	1.000	
Agricultural employment	-0.394	-0.199	0.500	-0.759	-0.164	-0.541	0.300	1.000

Source: Own Calculations based on Eurostat Online Database

2.4 Summary

Despite some common features, there are major differences between regions in Bulgaria, Romania and Poland in terms of demographic and socio-economic development. This section used a comparative analysis of regions in Bulgaria, Romania and Poland to identify key characteristics of regions in these countries.

The data presented in this section identify key characteristics of various regions across the countries' geographic areas which should be useful in terms of discussions on where new investment in the retail industry could be located. For each country, we presented regional data on different demographic and socio-economic factors. For each indicator the appendix of the report includes a visual summary in the form of a map of the country based on the NUTS3 classification.

In general, we find that based on the demographic as well as the socio economic indicators, Romania is "situated" between Poland and Bulgaria. For example, GDP per capita is the highest in Poland and the lowest in Bulgaria, while Romania's GDP per capita is in between. Also in terms of demographic factors, such as population density and the share of older inhabitants in the total population we can situated Romania between Poland and Bulgaria.

The main exception is regarding the share of the population employed in agriculture as in Romania agricultural employment is by far more important than in other two countries. In Poland and Bulgaria, agricultural employment is respectively 14,7% and 19,7% in 2007, while in Romania, this was substantially higher (30,3%).

In all three countries there are major differences among regions. Based on correlation and principal component analysis we find that in general rural and remote regions have a lower GDP per capita, higher unemployment and higher importance of the agricultural sector. Many of these regions also have a larger share of old persons in the total population and high out-migration.

These are the characteristics of rural and remote regions in general — compared to more urban areas. However, there are large differences within rural regions.

The rural regions that are the worst off are: in Bulgaria, the mountainous regions close to the border with Romania (Vidin and Montana); in Poland, the regions close to the border with Belarus and Ukraine (Lomzynski, Bialski and Chelmsko-Zamojski) and some regions in the middle of Poland (Sieradzki, Skierniewicki and Sandomiersko-jedrzejowski); in Romania, the regions close to the border with Bulgaria (Giugiu , Calarasi and Olt).

The rural regions that are the best off are: in Bulgaria, the regions close to the Black Sea (Varna and Burgas); in Poland, the regions close to the border with the Czech Republic (Opolski and legnicko-Glogowski and Bydgosko-Torunski) and, the rural regions in the predominantly urban voivodeship Slaskie (Czestochowski and Bielski); in Romania, the regions located in central Romania (Sibiu and Brasov) and close to the border of Hungary (Timis) and the Black Sea (Constanta).

3. The Transformation of the Retail Industry

In the past years, dramatic changes occurred in the retail industry in Poland, Bulgaria and Romania — like in most transition and developing countries. It evolved from a public governed distribution system to an increasingly modern and international industry. These changes are not only important from an “academic perspective”. In fact, to understand the current and future effects of these changes it is important to put the evolutions and changes into a historical perspective. Therefore we briefly discuss the transformation of the retail industry over the past two decades and identify the causes of differences among countries and their implications for our current study.

3.1 Stages in the Transformation of the Retail Industry

The transformation of the retail industry in transition (and developing) countries can be separated in three stages (Dries et al. 2004). The first period — *the Pre-liberalization Period* — is the period when the retail sector was a mostly state-controlled economic activity. The second period — *the Transition Period* — was characterized by major reforms, including privatization and market liberalization. The third period — *the Globalization Period* — is the period which started in the mid to late 1990s and still continues today. In this period there was a large “take-off” of the diffusion of supermarkets and other retail formats, driven by large amounts of foreign direct investment (FDI) from multinational retail companies.

Before discussing the three stages of the transformation of the retail sector in detail, we want to emphasize that there are significant differences in the timing in which countries have gone from the second stage to the third. Within Central and Eastern Europe, there is not a lot of variation in the timing of the transition from the “Pre-liberalization Period” to the “Transition Period”: all countries started to liberalize their economies around 1990. However, there is much more variation in the transition to the next stage. Some countries entered the “Globalization Period” already in the mid-1990s, while others entered only in the beginning of the 2000s.

Globally, the spread of modern retail started earliest in South America, East Asia (excluding China), north-Central Europe and South Africa; then in Central America and Mexico, Southeast Asia, and south-central Europe; and most recently it is now rapidly growing in China, India, Russia, Vietnam, and also emerging in Southern/Eastern Africa.

For the transition region, countries such as Poland, the Czech Republic and Hungary, are “first wave countries” in terms of retail transformation, starting the globalization period around 1996. Balkan countries such as Romania and Bulgaria are part of a second wave, where retail globalization started in the late 1990s. Russia and Ukraine belong to the third wave of countries, where retail globalization started in 2002.

We will now briefly discuss the various stages. Table 9 summarizes some key characteristics of the three stages.

Table 9: Key characteristics of the three stages in the transformation of the retail industry

	Pre-liberalization	Transition	Globalization
Concentration in retail sector	High	Low	High
Dominant source of capital	Domestic	Domestic	Foreign
Share of modern retail	Low	Low	High
Share of large multinationals	Low	Low	High
Location of modern retail outlets	–	Cities	Everywhere

Source: Dries et al. 2004

3.1.1 State Controlled Retailing During the “Pre-liberalization” Period

During the “Pre-liberalization Period”, governments in transition countries managed all stages of the food production and distribution system (Rozelle and Swinnen, 2004). However, there is some variation between transition countries. We distinguish between countries that adopted the “centralized/State” approach and the “decentralized/State-private mixed” approach.

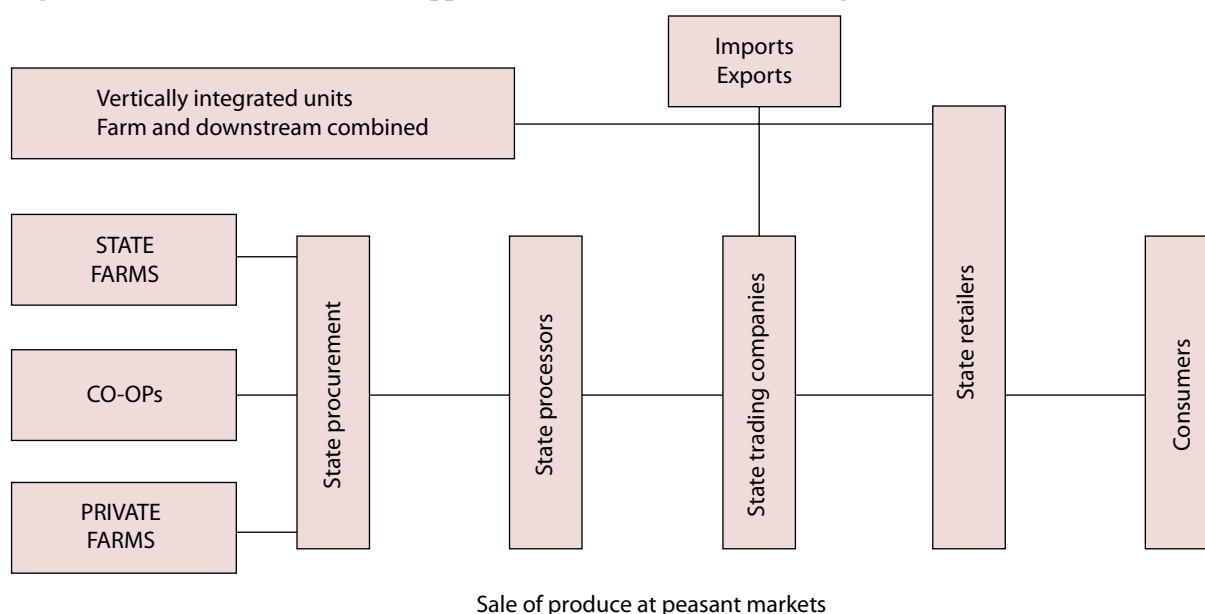
Most of the transition countries followed the “centralized/state” approach and the government controlled the nature, volume, prices and margins of the products (Burt, 2006). The physical distribution of products from manufacturers to retailers was controlled by state-led wholesale organizations and both wholesale organizations and retailers were organized as geographic monopolies, with little or no competition among each other (Nowak, 1991; Seitz, 1992).

In most countries, cooperative retailing in rural areas was permitted alongside the state controlled system, although it was still under the auspices of the government (King, 1988). Spatial segregation between rural cooperative retailing and urban state controlled retailing, in combination with price controls, limited the competition between these two organizational forms (Krasny, 1992).

Besides the state managed distribution channels, there existed also informal free markets in most countries where farmers sold their products directly to consumers (OECD, 2000a; OECD 2000b). Figure 1 gives an overview of the “centralized/state” approach to food distribution during communism.

In Bulgaria, which followed the “centralized/state” approach, the state purchased practically all harvested crops and animal products from farms and state trusts and organized food processing and distribution. A part of the produce was bought by the Central Cooperative Union, which was under the auspices of the state. The Central Cooperative Union controlled a substantial number of retail outlets, particularly in villages, and operated open-air markets. Most food stores were state-owned, or co-operative property. Yet, an estimated 30% of all food sold was supplied through local markets, in most cases, these were open-air markets where farmers sell what they cultivate on their own small plots (OECD, 2000a).

In Romania, also a country that adopted the “centralized/state” approach, all marketed output from the state and co-operative farms was procured and distributed by the state. Private farmers were forced to sell part of their output through contracts with the state-managed distribution system if they wanted to have access to inputs such as certified seeds, animal feed, vaccines and

Figure 1: The “centralized/state” approach of food distribution during communism

Source: Gorton et al. (1998)

chemical fertilisers (OECD, 2000b). The Domestic Trade Department of the Ministry of Trade (MT) was responsible for the whole food distribution system. In each of 41 *judets* the MT had wholesale distribution enterprises (*Intreprindere de comercializare cu ridicata*) which in turn were organized into 421 retail commercial units, each providing food to officially authorized retail shops within their sales area. In total there were about 250.000 retail outlets controlled by the MT, including those owned by the Domestic Trade Department and operated directly by the MT, consumer co-operatives and “special shops” dealing in one product only. The local peasant markets had been tolerated since the 1960s and since there were no subsidies involved and prices were less controlled than on formal markets, products sold through this channel were relatively expensive. The main products sold in this way were fresh fruits, vegetables, dairy products and flowers. The share of peasant markets in the total food sales consumed varied in 1989 from about 2% for wheat and rye products to 27% for fruit and fruit products (Word Bank, 1991).

Some countries, such as Hungary and Poland, followed the “decentralized/ state — private mixed” approach and experimented with a number of free market reforms which allowed an important private or at least mixed component in the retail system. This resulted in an increase in the quality and range of merchandise as well as an increase in the competition as there was an increase in the number of basic shops close to the largest housing estates (Michalak, 2001).

For example, Poland adopted the “decentralized/State-private mixed” model before transition such that besides government controlled sales in state enterprises and cooperatives, also private sales in small shops were allowed. However, due to their limited floor surface, private sales are only marginal compared to sales through state enterprises and cooperatives (Karasiewicz and Nowak, 2010). Most sales took place through state enterprises (41% of the sales in 1989) and cooperatives (54% of the sales in 1989). Hence, private sales represented only 5% of total sales in 1989. In terms of the number of shops, the share of the private sector is more important. In 1989, they represented 19% of the total number of shops, while state owned shops represented 18% of the shops and cooperatives 63% (Karasiewicz and Nowak, 2010).

3.1.2 Privation and Restructuring of Retailing During Transition

There are two waves of transformation that altered the structure of retailing in the transition countries. In the “transition” period this was the privatization of retail and wholesale companies (latter during the “globalization” period FDI liberalization will lead to the second wave of transformation in the sector).

The privatization of the retail industry was generally associated with the breakdown of the large state owned retail enterprises into smaller separate units. For example:

- in Bulgaria, the number of retail outlets more than doubled between 1990 and 1995 (from 15.000 in 1990 to 44.000 in 1995) (Bushnakova, 2003);
- in Romania, the retail sector largely expanded in the first years after transition and between 1990 and 1994 the total number of retail outlets rose from about 64.000 in 1990 to 183.000 in 1994 (OECD, 2000b);
- in Poland the number of retail outlets increased from 250.000 in 1989 to 850.000 outlets in 1994 and the number of stores increased from 152.100 in 1989 to 415.400 in 1994 (Table 10) (Karasiewicz and Nowak, 2010).

Table 10: Number of retail outlets and stores in Poland

	Number of retail outlets (in thousands)	Number of stores (in thousands)	Population per store
1989	250	152,1	250
1990	470	237,4	161
1995	890	425,6	91
2000	860	432	89

Source: Karasiewicz and Nowak, 2010

The privatization process is also reflected in the rapidly increasing share of private food sales. For example, by 1994, private food sales represented 73% and 74% in respectively, Bulgaria and Romania (OECD 2000a, 2000b). In the same year, this was already 90% in Poland (Karasiewicz and Nowak, 2010). Most of the private shops developed from petty traders selling from street kiosks and stalls. The vast majority of these new outlets are small shops, with less than 50 square meters of floor-space and a wide variety of products. Latter, these stores started to merge and form small retail chains (Dries et al., 2004). Table 11 shows the size distribution of stores in Poland in the “transition” period.

Table 11: Size distribution of stores in Poland

Year	Number of stores (in thousands)	< 50 sq.m.	51–100 sq.m.	101–200 sq.m.	201–300 sq.m.	301–400 sq.m.	> 400 sq.m.
1993	380,6	347,7	19,9	8,2	2,1	0,9	1,9
1994	415,4	383,1	10,4	8,1	2,0	0,9	2,0
1995	425,6	391,3	20,3	8,6	2,2	1,0	2,2
1996	405,6	369,9	20,7	8,9	2,4	1,1	2,6
1997	424,4	387,9	20,6	9,2	2,6	1,3	2,9

Source: Dawson and Henley (2000)

3.1.3 Foreign Investment and Globalization of Retailing

In the “transition” period almost all investment was with domestic capital as there were only limited retail FDI inflows. In this period, foreign investors were reluctant to invest in the retail sector of transition countries indicating that reforms and a stable policy environment are crucial for investment and contracting as this is needed to secure property rights and facilitate contract enforcement.

Foreign investment in the retail industry started in the most economic advanced countries, that also moved the fastest in their reform progress. These are the so-called “first wave” countries, such as Poland. Already in the early 1990s, when the market was still very unstable, there were some pioneers that entered the Polish retailing market (Dawson and Henley, 2000). Examples of these pioneers in retailing are the Austrian retailer Billa, the Nordic discounter REMA 1000 and the German retailer Makro. Billa entered the Polish market in 1990 and developed initially supermarkets in Warsaw and Bielsko-Biala. The discounter REMA 1000 entered the market in 1993 through a form of franchise system to target the discount food market. Makro opened its first store in 1994 in Warsaw and has expanded considerably since then.

After the investment of a few pioneers in the beginning of the 1990s, the modern retail sector in Poland started to grow rapidly in the mid-1990s. In 1995, the French retailers Leclerc, Auchan, and Docks de France opened several stores in Poland and in 1996 they were followed by Casino. Also in 1995, Jeronimo Martins, from Portugal, entered joint ventures to operate a chain of local discount food stores and a cash and carry chain. In the same year, the British retailer Tesco purchased a chain of small supermarkets. Besides, investment in supermarkets and hypermarkets, also foreign discounters emerged when in 1995 Metro and Tengelmann entered with their discount formats of respectively Tip and Plus (Dawson and Henley, 2000).

In the countries that were less advanced in the reform process, such as Bulgaria and Romania, it took much longer until the first foreign pioneers invested in the retail sector. In Bulgaria and Romania, the rapid growth of the retail sector only started at the end of the 1990s and in the beginning of the 2000s.

In Bulgaria, only at the end of the 1990s the first modern supermarkets and hypermarkets were established, mostly in Sofia and in the bigger cities, such as Plovdiv and Pleven. Some of these

investments in the retail sector were financed by foreign capital (e.g., Metro (German) and Ena (Greek)). However, the bulk of early investment in the retail sector was of Bulgarian origin and in the smaller towns and villages the stores of the Co-operative Union continued to operate (OECD, 2000a). The first multinational to invest in the retail sector was the Metro Group, who invested in 1999. The next year, in 2000, the Austrian retail company, Billa, opened its first shops in Bulgaria and later in 2005 and 2006 also respectively T- Market and Kaufland invested in the Bulgarian retail sector.

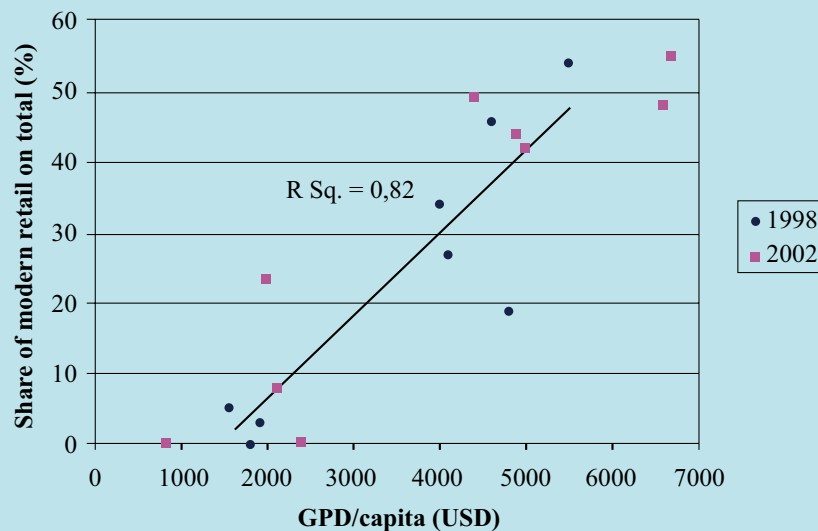
In Romania, economic instability and slow reforms slowed down foreign investment in the retail sector and only in 1997, the first foreign investors entered the market, when Kolos (Danish) and Metro (German) opened their first supermarkets in the large cities. In the same year, also a Belgian-Romanian joint venture (“La Fourmi”) opened five supermarkets in Bucharest (OECD, 2000b). However, overall there was only little foreign investment and most food sales were taking place through the traditional channels. This is also reflected in the four-firm concentration ratio in retailing, which was very low in Romania (about 1%) in 1998, compared to 60% in the UK and 42% in Germany at the beginning of the 1990s (Gorton et al., 1998).

After the pioneer investments of Metro and Kolos in the mid-1990s, the next multinational to invest in the Romanian retail market was the Austrian retailer, Billa, who entered the market in 1999. Billa is part of the German Rewe trade group and subsequently, the German group introduced its cash & carry stores, Selgros (1999), and the discount stores, XXL Mega Discount and Penny Market (in 2005), in Romania. In 2001, Carrefour invested in the Romanian market and opened its first hypermarkets in Bucharest, but rapidly expanded its activities to other large cities in the country.

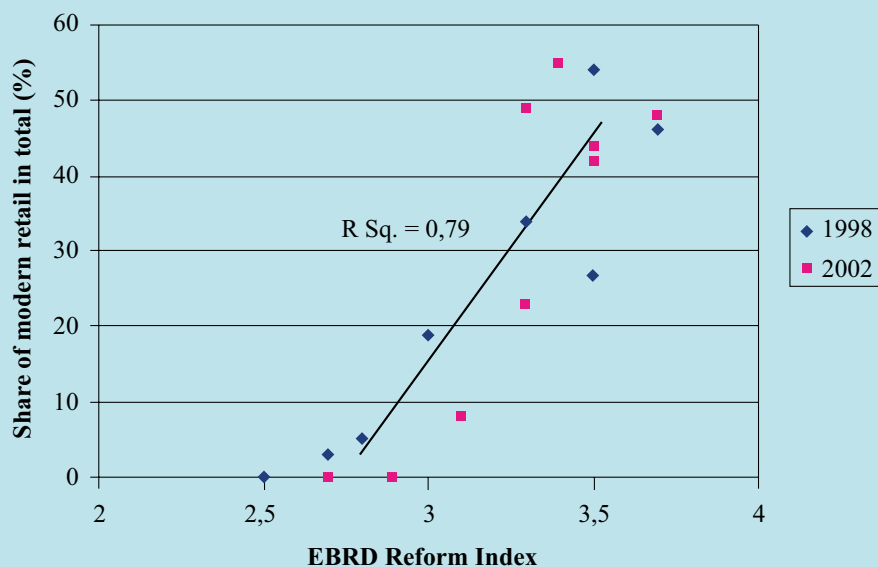
BOX 1: DETERMINANTS OF THE SPEED OF THE RETAIL INDUSTRY TRANSITION

The retail transformation was driven by a combination of demand and supply factors (Reardon et al. 2003). Demand is driven by (1) increasing per capita incomes; (2) urbanization, which improved access to public transport and led to more employment opportunities for women (and hence an increase in the opportunity cost of women’s time which increased the demand for processed and packaged food); (3) a reduction of effective food prices for consumers because of supermarket chain’s mass procurement and efficient merchandising. On the supply side, increased investment in the retail sector was driven by two determinants: (1) policy interventions such as public investments, market liberalization, trade liberalization and FDI liberalization; (2) FDI and competitive domestic investments fueled by agro-food industry entrepreneurs seeking economies of scale, scope, and specialization.

The relationship between the demand/ supply factors and the diffusion of modern retail is reflected in the correlation between, on the one hand, the share of modern retail in total retail, and on the other hand, the income level of the country and the progress of reforms, which is illustrated by Figures 2 and 3 (data for Bulgaria, Croatia, Czech Republic, Hungary, Poland, Romania, Russia, Slovakia, Ukraine).

Figure 2: Share of the modern retail sector in total and GDP/capita in Eastern Europe

Source: Dries et al. (2004)

Figure 3: Share of the modern retail sector and reform progress in Eastern Europe

Source: Dries et al. (2004)

Figure 2 shows that there was a strong positive correlation between the share of modern retail in total retail and the income level of the country. Figure 3 shows that there was a strong positive correlation between the extent of reforms and the growth of the modern retail sector. These data suggest that there appears to be a minimum level of income and reform and that once beyond this level, the modern retail sector grows exponentially. For the “first wave” countries, this process started in the mid/late 1990s, while in “second wave” and “third wave” countries it started in respectively 2000 and 2002.

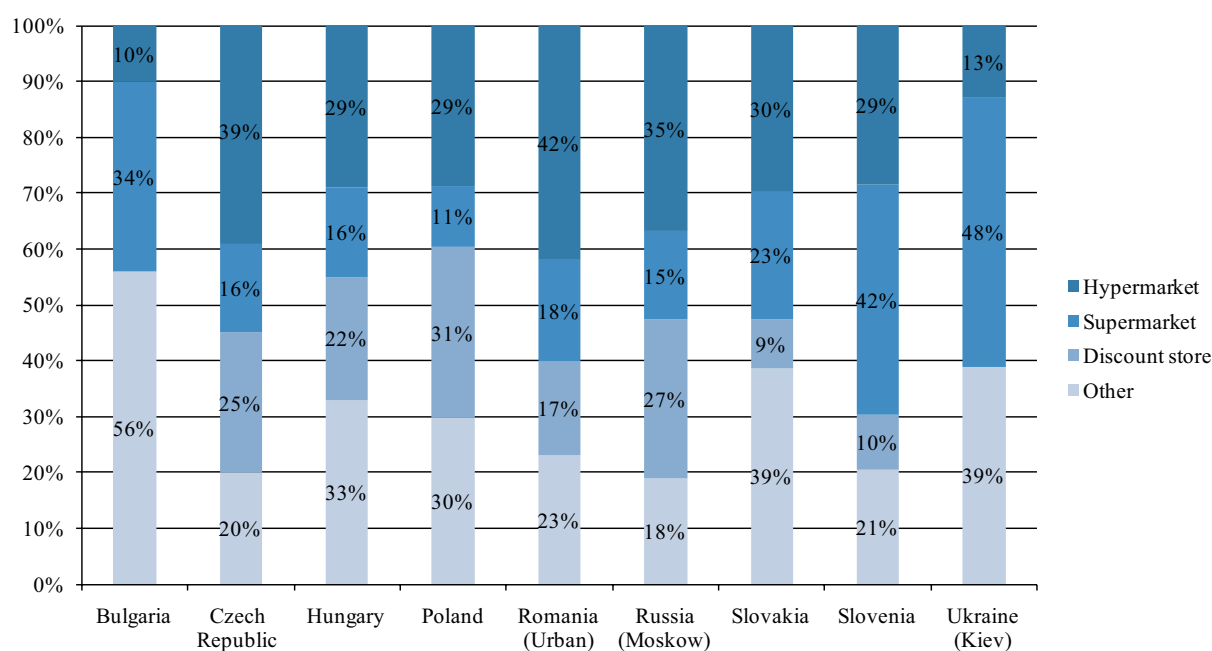
4. Recent Developments and Effects

4.1.1 Continued Growth of Modern Retail

In the past years the share of modern retail has rapidly expanded. Figure 4 indicates that the modern retail sector (supermarkets, hypermarkets and discount stores) is now the main shopping place for a significant proportion of the population in Eastern Europe. Throughout the “first wave” countries and in the urban areas of the “second wave” and “third wave” countries, the majority of the respondents indicated that modern retailers were their main shopping place.

For example, in the Czech Republic 80% of the respondents indicate that a modern retailer is their main shopping place and also in Moskow (Russia) approximately 80% of the population indicated that supermarkets, hypermarkets or discount stores are the main place where they do their grocery shopping.

Figure 4: The Main Shopping Places in selected Central and East European countries in 2009



Source: *Shopping monitor Central & Eastern Europe 2009*

Figures 4–7 illustrate how the share of the modern retail sector (supermarkets, hypermarkets and discount stores) in total retail grew strongly in Poland, Bulgaria and Romania in recent years, based on where the main shopping place was (in figure 4) and as a share of grocery sales (figures 5–7):

- In Poland, around 70% of people identify modern retail outlets as their main shopping place. The share of the modern sector in total grocery sales grew from 33% to 48% between 2004 and 2009.
- In Romania, the share of modern retail in grocery sales has grown rapidly over the past five years: from 16% in 2004 to 42% in 2009, close to the share in Poland. There are only data available

for urban Romania on “main shopping place” and these data show a very strong domination of modern retail: around 85%.

- Bulgaria is still lagging in this development. On aggregate in Bulgaria more than half consumers still shop in more traditional retail outlets. In terms of grocery sales, the share of modern retail has increased from 14% in 2004 to 29% in 2009.

4.1.2 Diversification and Growth of Hypermarkets and Discount Formats

Soon after the “take-off” of modern retail chains in the region, retailers started diversify the supermarket concept and invested in different formats, such as hypermarkets, discount stores and convenience stores to increase market coverage, diversify product choice, lower prices and hence increase their market share.

Figure 4 shows that the relative importance of the different formats varies substantially between the countries. In particular, within Central and Eastern Europe, discount stores appear much more important as main shopping place in, for example, Hungary, Czech Republic and Poland (22% to 31%) than in, for example, Slovakia and Slovenia (around 10%).

Figures 5-7 and Tables 12-13 show the evolution of the different retail formats (e.g. share, number of outlets, the sales value and the selling space of respectively hypermarkets and discounters) in Poland, Bulgaria and Romania.

- In Poland the number of hypermarkets has increased from 229 outlets in 2004 to 389 outlets in 2009, or an increase of 69% (Table 12). Also the market share of hypermarkets increased in the past five years: from 16% in 2004 to 20% in 2009 (Figure 5).

Similar results hold for the discount sector where the number of outlets increased from 1233 outlets in 2004 to 2083 outlets in 2009 (Table 13) and the market share increased from 8% in 2004 to 13% in 2009 (Figure 34). These numbers indicate that in Poland, format diversification already started in the beginning of the 2000s and that by the mid-2000s, hypermarkets and discount stores played a very important role in the Polish retail market.

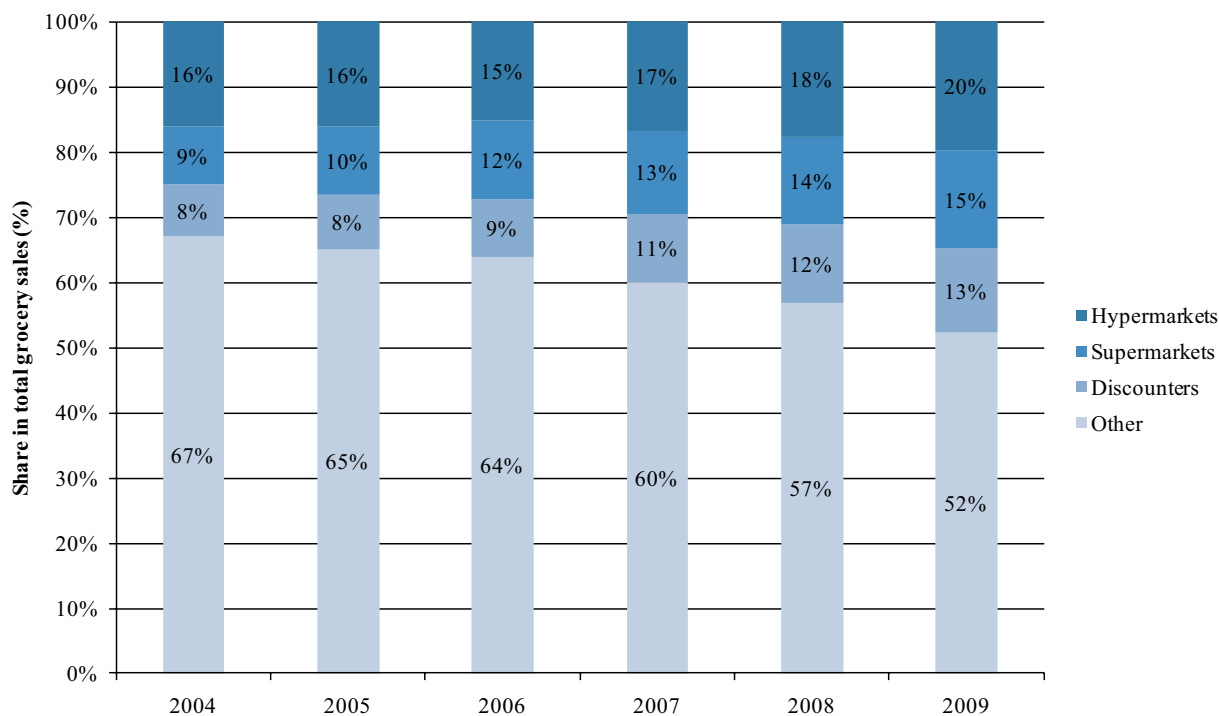
- In Romania, there was a very rapid growth of hypermarkets and discount stores in the past 5 years. There were only five hypermarket outlets in 2004 (or a market share of 6%) but by 2009, this number had increased to 104 outlets (or a market share of 25%) (Table 12).

There was also a large increase in the number of discounters: in 2004 there were 20 outlets with a combined market share of barely 1%; while in 2009, there were 278 outlets, with a combined market share of 8% (Table 13 and Figure 6).

- In Bulgaria, as with other indicators, the process of growing importance of hypermarkets and discount stores has been slower than in Poland and Romania. There were 10 hypermarkets in 2004, with a combined market share of 3%. By 2009, the number of outlets increased to 36 and the market share to 7% (Table 12 and Figure 7).

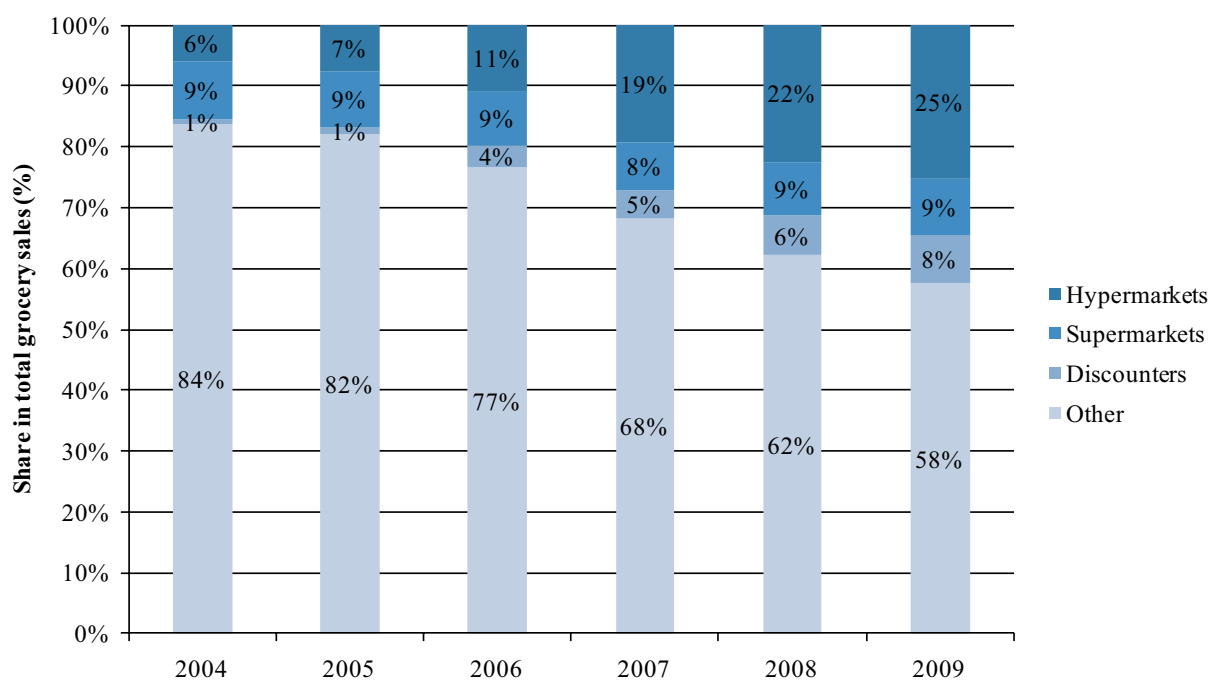
In 2009 there were no hard discounters operating in the Bulgarian retail market (Table 13 and Figure 7). The retailer which most closely resembled this format was Kaufland, a hypermarkets

Figure 5: Share in total grocery sales of different modern retail formats in Poland (2004–2009)

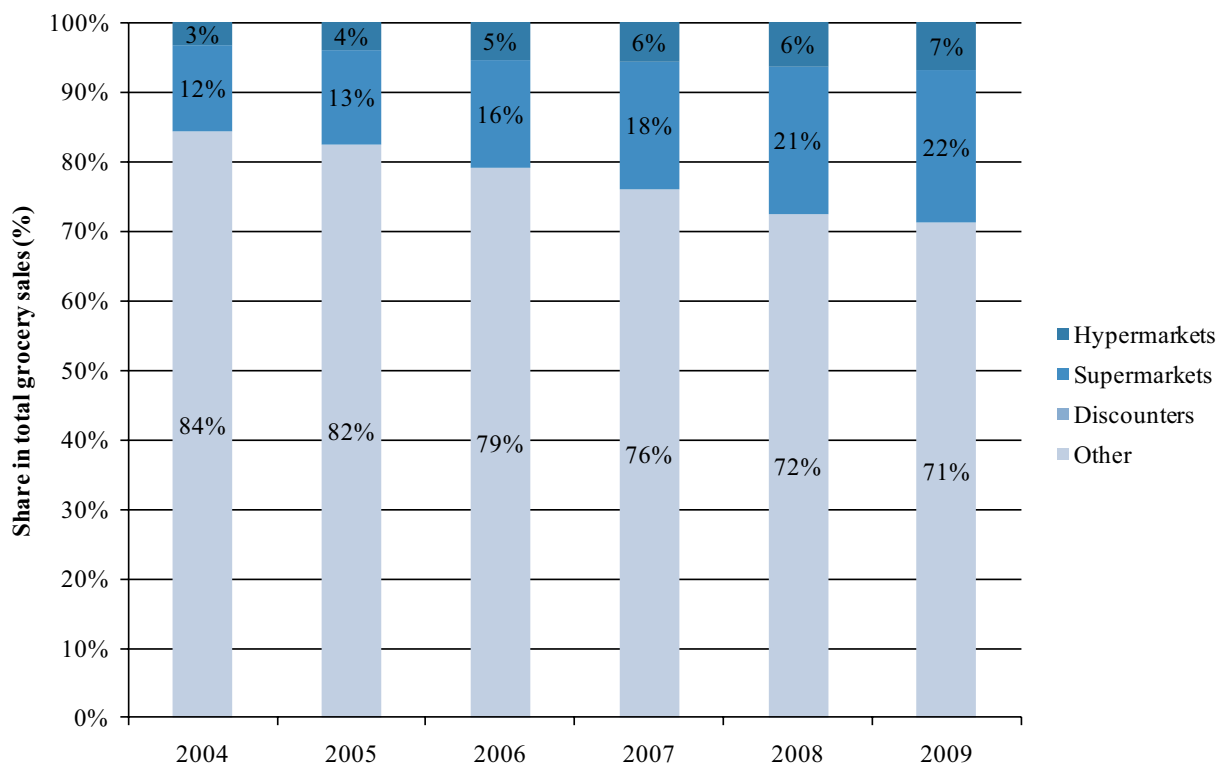


Source: Euromonitor (2010)

Figure 6: Share in total grocery sales of different modern retail formats in Romania (2004–2009)



Source: Euromonitor (2010)

Figure 7: Share in total grocery sales of different modern retail formats in Bulgaria (2004–2009)

Source: Euromonitor (2010)

Table 12: HYPERMARKETS: Value Sales, Outlets and Selling Space 2004–2009

		2004	2005	2006	2007	2008	2009
Poland	Value sales (PLN million)	19644,7	20509	19536	23167,7	25803,9	30278
	Outlets	229	251	276	317	352	389
	Selling Space ('000 sq m)	15015	16348	18058	19358	20630	21940
Bulgaria	Value sales (BGN million)	158,2	206,1	291,7	314,2	376,3	412,8
	Outlets	10	12	25	28	34	36
	Selling Space ('000 sq m)	35	44	89,9	101,5	119,1	134,7
Romania	Value sales (RON million)	1317,5	1991,5	3464,6	7688,4	10845,4	13838,8
	Outlets	5	9	36	64	89	104
	Selling Space ('000 sq m)	53	81,5	198,1	336,8	440,8	526

Source: Euromonitor (2010)

chain with a low-price positioning which is perceived as a soft discounter by many consumers. The success of Kaufland's low-price strategy in hypermarkets suggested that there is large potential for the conventional discounters format in the Bulgarian market and a number of international discounters chains have confirmed their intention to enter the Bulgarian retailing market, most notably Lidl, Penny Market and Plus (Euromonitor, 2010). In the beginning of 2010, Penny Market and Plus opened their first stores in Sofia and other large cities in Bulgaria. Currently, there are 24 Plus stores and 39 Penny Market stores in Bulgaria.

Table 13: DISCOUNTERS: Value Sales, Outlets and Selling Space 2004–2009

		2004	2005	2006	2007	2008	2009
Poland	Value sales (PLN million)	9569,5	10622,4	11410	14720	17468	19586
	Outlets	1233	1421	1424	1660	1860	2083
	Selling Space ('000 sq m)	747,5	899,9	790,4	924	1070,9	1194,8
Bulgaria	Value sales (BGN million)	0	0	0	0	0	0
	Outlets	0	0	0	0	0	0
	Selling Space ('000 sq m)	0	0	0	0	0	0
Romania	Value sales (RON million)	235,6	568	1142	1828,5	3139,5	4416,6
	Outlets	20	57	104	151	206	278
	Selling Space ('000 sq m)	23,7	58,6	104,4	151,2	203,1	273,5

Source: Euromonitor (2010)

4.1.3 Retail Investments in Small Towns and More Remote Areas

In the same way that foreign investors in the retail sector spread their activities from the relatively-saturated countries (or “first wave” countries) to the less-saturated (or “second wave” and latter also “third wave” countries), retailers also spread their activities within one country. Initially, retailers mainly invested in the large cities, where the living standard is in general higher, but when this market became more and more saturated they started to invest in smaller cities and towns.

Because of the lower population density in smaller towns and rural areas, there is inherently less competition among modern retail chains in these areas. Often the company which introduces the first hypermarket in a small town may effectively lock out competition as there may only be a market for one major store (Dries et al. 2004).

Information on this process of investments in rural and more remote areas is more limited. In Poland, there is evidence of a significant number of modern retail outlets located in smaller cities and towns. In 2003, more than 40% of the Albert supermarkets (part of the Dutch Ahold group) were located in towns with less than 50.000 inhabitants (Table 14). Besides supermarkets, there

are also several discounters active in smaller cities and towns. In 2004, 52% (or 352 stores) of the Biedronka network (part of the Portuguese Jeronimo Martins Group) were active in Polish towns with a population of up to 50.000 inhabitants and also Lidl (part of the German Scharwz Group) had approximately 35% of its network in these small towns in Poland (Wilk, 2006). In Romania, the discounter Penny Market (part of the German Rewe Group) is active in several smaller cities and towns outside Bucharest. In 2010, 30 out of the 51 Penny Market stores (or more than 58%) were located in towns with less than 50.000 inhabitants. Also in Bulgaria, the discounter Penny Market has most of its stores located in towns with less than 50.000 inhabitants and in 2010, 22 out of 39 stores (more than 56%) were located in such small towns.

Table 14: The spread of modern retail in small cities and towns in Poland in 2003

Town size (‘000 inhabitants)	Share of town group in:	
	Urban population	Number of Albert supermarkets
< 20	20,8% (663)*	12,2%
20–50	17,4% (132)	28,7%
50–100	14,1% (49)	17,1%
100–200	12,7% (22)	18,3%
200–500	16,1% (13)	10,4%
> 500	18,9% (5)	13,4%

Note: (*) — in parenthesis is the number of towns in the group

Source: Wilk (2006)

4.1.4 Continued Growth of Foreign Participation

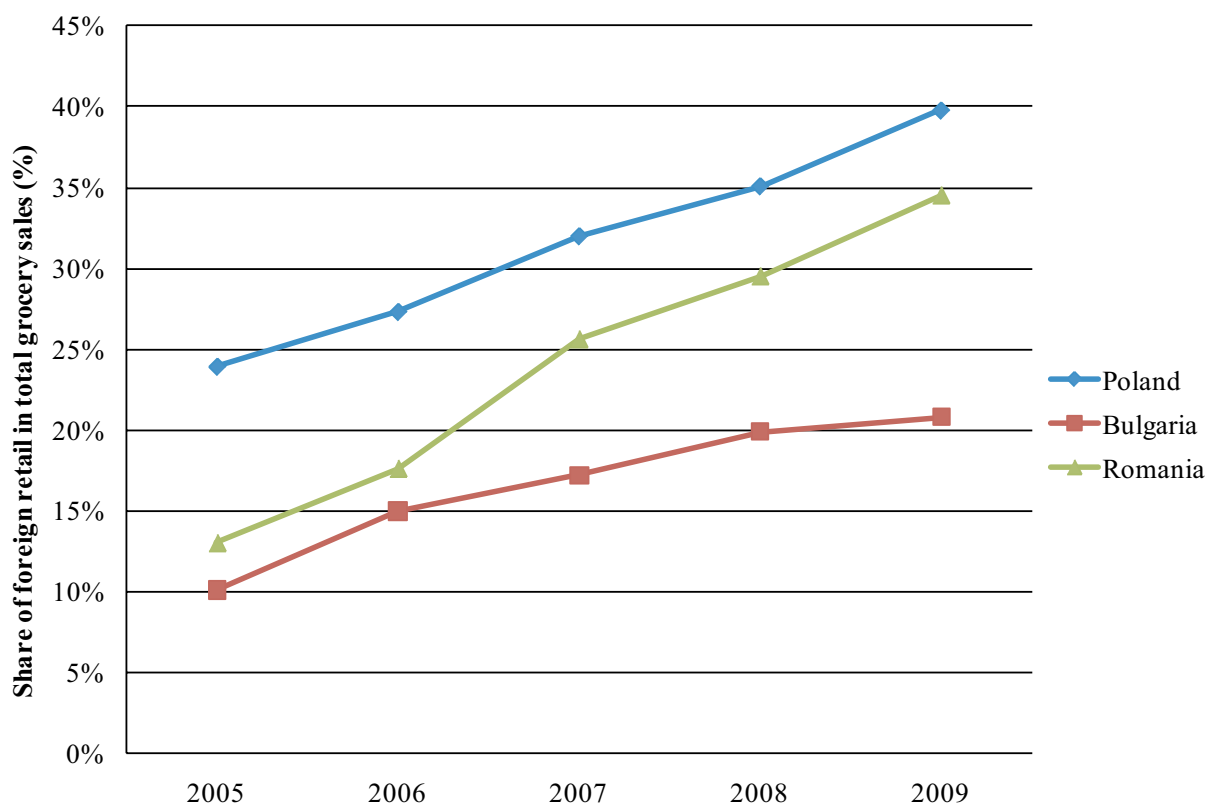
Foreign investors continue to increase their share in the retail sector. Currently, the share of foreign investment in total food sales grew very strongly in all three countries. It is about 35% in Romania, 40% in Poland and 20% in Bulgaria (Figure 8). Using 2009 data, we estimated that foreign supermarkets have combined more than \$3 billion of food sales per year in Poland, Bulgaria and Romania.

Table 15 lists the top companies in total supermarket sales¹⁰. Foreign companies dominate the list. Yet, there is a great diversity of multinational retailers that have invested in the region. In Poland, Bulgaria and Romania, the main foreign investors in supermarkets were Billa (Austria), Carrefour (France), Van Holding (Serbia), Tesco (UK) and Mega Image (Belgium). Only in Bulgaria, the national retail chain, Bolyari AD, manages to have dominant position in supermarket sales (third largest player in 2009).

4.1.5 Increasing Concentration

Over the three stages, we observe a “U” shaped pattern of concentration over time. Before transition, the retail sector was highly concentrated, while in the transition period privatization

10.- Foreign companies also dominate the total grocery sales in the three countries. In appendix 7.8, one can find the tables that illustrate this. Total grocery sales include besides grocery sales in supermarkets also sales in hypermarkets and discount stores.

Figure 8: Share of foreign retailers in total grocery sales in Poland, Bulgaria and Romania

Source: Euromonitor (2010)

caused that the sector became de-concentrated and usually very small, independent shops arose. In the “globalization” period, the multinationalization and inflow of FDI led to a re-concentration of the sector. However, this time it is in hands of the private sector and not state-owned like before transition.

Table 15 illustrates this growing consolidation in the supermarket sector. In 2005 and 2009, the top five supermarkets in Bulgaria represented respectively 42% and 59% of supermarket sales, while in Romania, this was respectively 53% and 61%. In Poland, this number was slightly lower, namely 41% in 2005 and 57% in 2009. These figures are in line with the EU15 average at the end of the 1990s when Clarke et al. (2002) reported that the five-firm concentration ratio in the grocery retailing sector was close to 50%.

However, recent figures by Einarsson (2007) show that the grocery market in the EU15 is now even more concentrated: the three-firm concentration ratio's for 2004 are Denmark (91,2%), Finland (79,6%), Iceland (81%), Norway (82%), Sweden (91,2%). These are huge numbers compared to the Eastern European countries, where in 2009 the three-firm ratio in the grocery market is 14% in Bulgaria, 19% in Romania and 21% in Poland. Therefore one should expect that in the future this sector will concentrate even more and will reach the same level as in the EU15.

Table 15: Share of the largest supermarkets in total supermarket sales (%)

BULGARIA	2005	2006	2007	2008	2009
Billa Bulgaria EOOD (FDI)	13,4	15,2	14,3	16	17,7
Van Holding AD (FDI)	18,8	17,4	16,8	17,4	16,8
Bolyari AD	3,4	6,3	7,3	8,1	10,1
VP Market Bulgaria EOOD (FDI)	1,4	6,7	10,4	10,7	9,9
CBA Bulgaria AD (FDI)	2,8	3,1	3,1	4,2	4
Wild GmbH & Co KG, Rudolf (FDI)	3,5	3,4	3,1	2,7	2,4
Magazini Evropa AD	–	–	1,5	1,6	1,6
Agro-Industrial EOOD	1	1,2	1,2	1,1	1,1
Others	55,7	46,7	42,3	38,1	36,4
POLAND	2005	2006	2007	2008	2009
Carrefour Polska Sp zoo (FDI)	7,9	7,6	13	12,2	13,9
Tesco Polska Sp zoo (FDI)	2,7	10,9	13,5	12,7	13,3
ITM Polska Sp zoo (FDI)	13,1	12,4	12,1	11,9	12
Polomarket Sp Zoo	8,5	9,1	10,8	11,1	10,3
Piotr i Pawel Sp zoo	5,4	4,9	5,6	6,3	7
Eko Holding Sp zoo	5,9	5,9	6,8	6,5	6,2
Grupa E Leclerc Sp zoo (FDI)	4,3	3,9	3,6	3,3	5,4
Emperia Holding SA	–	–	5,1	5,3	5,1
Others	52,2	45,3	29,5	30,7	26,8
ROMANIA	2005	2006	2007	2008	2009
Billa Romania SRL (FDI)	29,7	30,6	34,3	27,6	31
Mega Image SA (FDI)	7,8	7,7	10,6	10,6	14,3
Artima Retail Investment Co SA (FDI)	8,2	9,7	10,6	9	8,4
Gimrom Holding SDA	4,7	4,8	6,3	5,1	3,8
Ivet Comprod Srl	1,4	1,7	2,5	2,8	3,2
Spar Merchandising Romania SRL (FDI)	–	0,9	4,1	3,8	3,1
Angst RO SA (FDI)	2,8	3,1	3,6	3,2	3
Oncos Impex Srl	2,7	3,2	3,1	2,5	2,5
Others	42,7	38,3	24,9	35,4	30,7

Source: Euromonitor (2009)

4.1.6 Shift Towards Private Standards

Generally, growing demand for high standards is a natural consequence of income growth. In recent years it has been reinforced by several additional events. For example, international campaigns against child labour and genetically modified food, NGO activities expressing growing concerns on climate change and the loss of biodiversity and several food safety crises in the EU, such as the

food dioxin crisis and the appearance of BSE, have all contributed to a rising demand for high quality, safe, sustainable and traceable products in the production chains of many nations (Xiang et al. 2009). These developments started in the EU15, but are increasingly important in countries like Poland, Bulgaria and Romania.

First, with rising incomes, retailers are making new demands on local producers in order to serve the high-end income consumers (Reardon et al., 2003).

Second, the rapid growth of modern retail chains, where multinational companies are the top players in the market, increased the spread of high standards as the modern retailing companies have begun to set standards for food quality and safety in the sector wherever they are doing business (Dolan and Humphrey, 2000; Henson et al., 2000).

The demand for higher food standards changed the way of doing business along the food chain (Kinsey, 2003). Food standards are no longer only introduced and regulated by the government, but also by processing and retailing companies, who develop their own private corporate standards (Swinnen and Vandemoortele, 2008). Fulponi (2007) illustrates the importance of private corporate standards based on a survey of 16 leading food retailers. About 90% of retailers reported that the standards they required for doing business were higher than those set by the public authorities, and about one-half reported that they were even significantly higher (Figure 9).

Based on our interviews, we find that there have been important improvements in the quality of food products such as stricter legislation on chemical use and more stringent cooling and storage conditions. For example, in 2005, less than 50% of the raw milk delivered to milk processing establishments in Romania was compliant with the current quality requirements (e.g. bacterial count, presence of antibiotics, ..). Partly, these improvements are introduced under impulse of EU integration, but we have some indications that especially modern retailers are concerned about food safety and quality standards (see also section 5.1.3.).

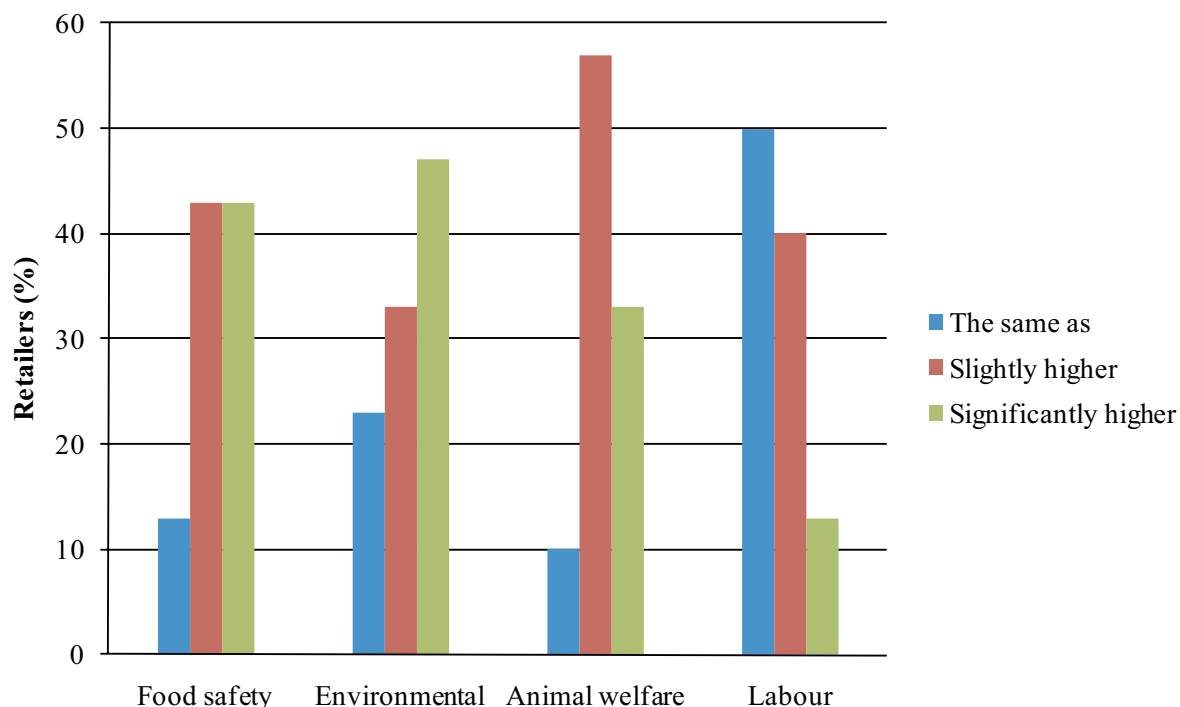
First, we find evidence that consumers prefer modern retailer over traditional channels, because the quality of some products is higher in the modern retailer than in the traditional shop or on the open market. One of the consumers summarized it like this:

“In the summer, some of the traditional shops do not have sufficient cooling facilities, while in the supermarket it is sometimes so cold that I need to put on extra clothes. This is the main reason why I buy meat and dairy products in the supermarket, especially in summer”.

Second, based on our interviews with producers and their representatives we find that modern retailers include specific quality and safety standards in their contracts with producers and request certification on chemical use, while this is less the case in contracts between producers and traditional wholesalers.

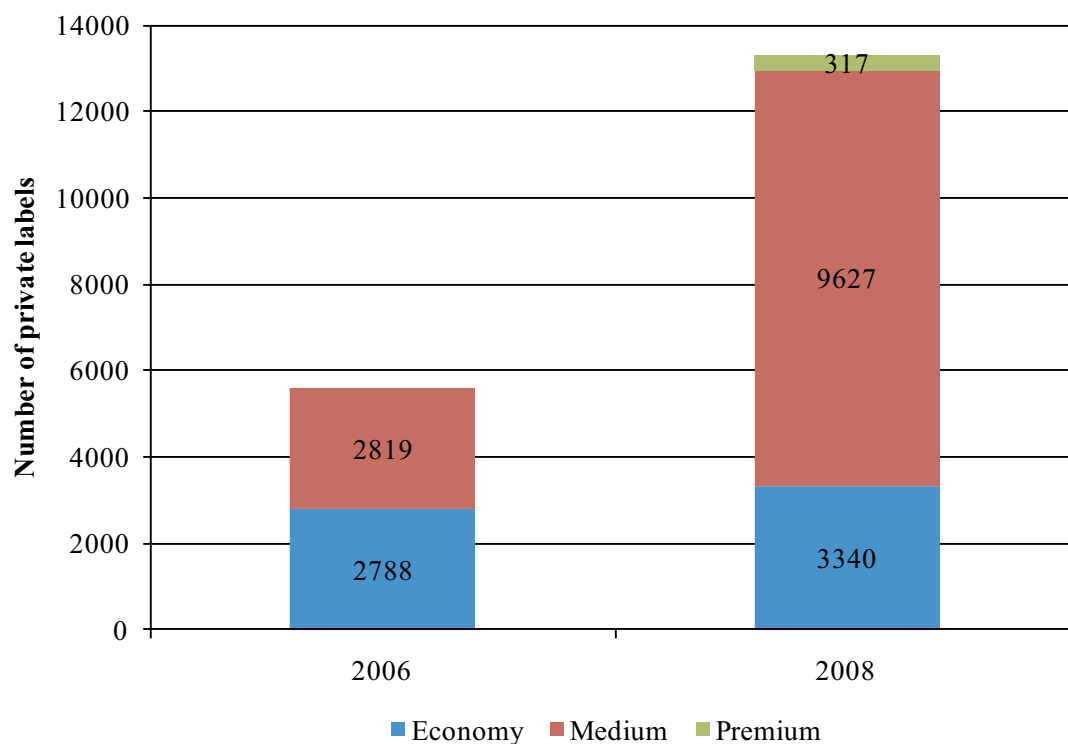
In this perspective, private labels are increasingly important in the region. For example, in Poland, Tesco, Carrefour and E. Leleerc had together 5607 private labels in 2006, while in 2008, this number increased to 13.284 labels (Figure 10). In total, private label goods accounted for 9% of total food sales in 2008. The private label market in Poland recorded growth not only in terms of number but also quality of the products. Today, besides low and medium price private labels, retailers in Poland offer also premium brands, where the quality and prices are comparable to or higher than those

Figure 9: Retailers' Self Assessed Standards compared to those of the Government



Source: Fulponi (2007)

Figure 10: Development of Private Labels in the Low, Medium and Premium Price Brackets at Tesco, Carrefour and E. Leclerc in Poland, March 2006 and March 2008



Source: PMR Publications ("Private Label in Poland 2008")

of leading manufacturers' brands, such as Carrefour's Bio organic label (PRM Publications, 2008). Currently, the leading private-label players include Tesco (with 700 names in food and chemical sectors), Carrefour (4,300 names, with plans to increase this by an additional 100 during 2009) and Real, which offers a number of items under its Real Quality label.

In Romania, Metro, which sold EUR160mn private label goods in 2009 (or some 10% of its total sales), reported that it would like to expand its portfolio. Metro expects that its private label portfolio — which includes brands such as Rioba, Fine Foods, H-Line, Sigma and Aro — will top EUR300mn by 2012. In total, the portfolio has over 1.800 products, with the aim of doubling this number by 2012. In contrast, the company has no plans to expand the number of its stores during the current year.

The information obtained from our interviews in the rural areas is consistent with these conclusions. In all interviewed modern retailers the number of private labelled products increased. For example, in the Polish supermarket the number of labelled products rapidly increased, from no products in the beginning of the 2000s to approximately 50 products in 2010. Also in the interviewed discount store in Romania, the number of private labelled products largely increased (by 20% in the past year, from 500 products in 2009 to 600 products in 2010). In Bulgaria, which is lagging behind to the other two countries, the number of private labelled products in one supermarket increased from 20 products in 2004 to 30 products in 2010.

5. Impacts on Consumers, Producers, Traditional Retail and Rural Society

The previous section already identified several effects of investments by modern retail companies and discounters. Here we analyze more specifically the effects on specific groups in society.

5.1 Impact on Consumers

In the literature different consumer effects are identified (Minten et al., 2010): the impact of modern retail on consumer choice of shops, on prices, on quality and variety of offered food products, on diet trends, and on the profile of consumers. We will consider each of these effects here.

5.1.1 Impact on Consumer Choice and Shopping Behavior

In the previous section we have provided extensive documentation of the growth of both the number of modern retail outlets as the diversity of formats in Bulgaria, Romania and Poland. We have documented how the growth has been stronger in Romania and Poland than in Bulgaria where there are less modern outlets and where discounters were absent until the beginning of 2010.

It is clear from the evidence presented there, in particular from the aggregate data on where consumers shop that the arrival of modern retailers and discounters has major effects on consumer behavior, in particular in that they are increasingly and significantly moving away from shopping in traditional retail outlets to shopping in supermarkets, hypermarkets and discounters — where they are available.

Our own information based on our interviews in remote and rural areas is largely consistent with the aggregate data from other sources which we presented before.

In Bulgaria, Poland and Romania, we find that the different stages of retail development are also reflected in consumer behavior. It is useful to compare the beginning of 2000s for Poland and the mid-2000s for Bulgaria and Romania with the current situation since in the beginning of the 2000s, Polish retailers started investing in retail outlets in rural regions. In the second wave countries, Bulgaria and Romania, this evolution took place in mid 2000s. By taking these time periods as a baseline, we can compare how consumer behaviour has changed since the first years that there was a modern retailer in the region.

Initially, market penetration of supermarket sales was relatively low for most of the products. However, the market share of modern retail rapidly increased and by 2010 the modern retailer was the main shopping place for almost all rural consumers that we interviewed. Interesting, we found that also consumers of the traditional shop far from the supermarket buy some products at the modern retailer. On average, consumers of traditional shops far from the modern retailer go two times per month to the modern retailer, while consumers of traditional shops close to the modern retailer and consumers of the modern retailer went respectively five and nine times per month to the modern retailer to buy groceries. Nevertheless, there were important differences between product categories (Table 15A).

Rapidly after the establishment of the modern retailer in the rural region, consumers started to buy staple food products (44% of the consumers indicates the modern retailer as the main shopping place for this product type), processed food (40%) and wine (46%) in the modern retailer. The importance of the modern retailer as the main shopping place for these products continued to increase and by 2010 almost all consumers buy these products in a modern retailer (staple food products: 78%; Processed food: 71%; Wine: 77%).

Initially the importance of the modern retailer as the main shopping place for semi-processed food products, such as dairy products and meat, was smaller than for staple and processed food products (38% for dairy products and 28% for meat products). However, also for these products, the importance of modern retailers as the main shopping place rapidly increased and by 2010 already 67% and 55% of the consumers buy respectively dairy and meat products in a modern retailer. The consumers that do not buy meat and dairy products in a modern retailer buy these in the general shop or at the market (dairy)/ in a specialized shop (meat) (Table 16).

For fruits and vegetables our findings are different. In the first years after the emergence of modern retailers only 19% of the consumers purchased fruits and vegetables in a modern retailer, but also in 2010 the importance of the modern retailer as the main shopping place for fruits and vegetables was relatively limited compared to staple, processed and semi-processed food products (fruits: 37% and vegetables: 35%). Most consumers indicate that they still buy fruits and vegetables at the market or in the traditional general shop (Table 16).

These results are also reflected in the monthly expenditures, which differ substantially between traditional shops and modern retailers depending on the product category. For fruits and vegetables, the average monthly expenditures per household member in a modern retailer are respectively €3,8 and €3,5 compared to €6,1 and €5,8 in the traditional shop. In contrast, the average monthly expenditures for staple and processed food products are higher in the modern retailer compared to the traditional shop (Table 17).

5.1.2 Impact on Consumer Prices

In order to find out if poor consumers could benefit from the emergence of modern retail channels, it will be crucial to determine whether modern retailers offer their products at higher or a lower prices than traditional retailers. Based on a review of the literature (see Box 2 for a list of studies), Minten and Reardon (2008) conclude that price differences between modern and traditional retailers largely depend on the product type and the level of modernization of the procurement system. One can distinguish three stages:

(1) At the very early stage of penetration of modern retail formats in transition and developing countries, prices offered in modern retail formats are equal or higher (compared to traditional retailers) for processed food products and higher for fresh food produce.

(2) In the a more intermediate (but still early) stage, when modern retail channels start their “take-off”, processed food is cheaper in supermarkets, but the results for fresh produce are mixed (for some mass produced products it is cheaper in modern retailers while as for other it is more expensive than in traditional retailers). This is because retailers first introduced changes in their procurement strategies for processed food products (and rapidly afterwards also semi-processed food products such as meat and dairy). The changes in procurement strategies substantially reduce

Table 15A: Modern retailer as their main shopping place (% of the interviewees)

	Beginning of the 2000s (Poland)/ Mid 2000s (Bulgaria & Romania)	2010
Fruits	19%	37%
Vegetables	19%	35%
Dairy	38%	67%
Meat	28%	55%
Staple food	44%	78%
Processed food	40%	71%
Wine	46%	77%
Other beverages	37%	64%

Source: Calculations based on own survey results

Table 16: Main shopping place in 2010 (% of the interviewees)

	Modern retailer	Market	Traditional general shop	Specialized shop
Fruits	37%	32%	29%	2%
Vegetables	35%	35%	28%	2%
Dairy	67%	5%	28%	0%
Meat	55%	2%	34%	9%
Staple food	78%	1%	21	0%
Processed food	71%	2%	27%	0%
Wine	77%	1%	20%	2%
Other beverages	64%	1%	35%	0%

Source: Calculations based on own survey results

Table 17: Monthly expenditures per household member (in euro)

	Traditional Shop*	Modern retailer
Fruits	6,1	3,8
Vegetables	5,8	3,5
Dairy	5,0	6,8
Meat	7,8	8,3
Staple food	3,3	4,9
Processed food	3,2	4,3
Wine	2,3	5,1
Other beverages	3,6	4,6

* Traditional shops include the general shop, market, specialized shop and neighbors.

Source: Calculations based on own survey results

the transaction costs and in case of high competition between retailers, the retailers will pass on the lower transaction costs to their customers, which will result in lower consumer prices (Reardon et al., 2010). This is illustrated by Farina et al. (2005), who observed the existence of “symbiotic” relationships between large processors and retailers. For example, in Brazil and Argentina, they observe retailers procuring large volumes of milk, which substantially reduces transaction costs with the processor and reduces milk prices for consumers. Similar relationships are observed by Dries and Reardon (2005) in Russia.

(3) In a more advanced stage, food prices in modern retail shops tend to be generally lower (compared to traditional retailers) for almost all food products, including fresh produce, because modern retailers also adopted the changes in procurement strategies for these products. One of the motives to offer also low prices for fresh products is to gain market share by providing consumers with one-stop shopping convenience and integrating the conventional supermarket and fresh food market into one store.

In our interviews with consumers in remote areas in the countries, when we asked for the reasons behind the change in consumer shopping choice, we find that “price” was the most important reason to change towards more purchases in the modern retailer and also the representatives of the consumer organizations mention “price” as the main reason to shop in modern retailers (Table 18).

Table 18: Main reason to increase the share of total purchase bought in the modern retailer in 2010 (% of the interviewees)

	Price	Variety	Quality and Safety	Convenience
Fruits	41%	13%	10%	36%
Vegetables	36%	9%	19%	36%
Dairy	42%	23%	18%	17%
Meat	39%	16%	22%	23%
Staple food	63%	13%	2%	21%
Processed food	61%	16%	4%	18%
Wine	39%	41%	2%	18%
Other beverages	63%	14%	3%	20%

Source: Calculations based on own survey results

While we do not have detailed representative data on this — because of the absence of sufficient outlets for comparison in the same rural towns or remote areas — one would expect that with regard to reducing prices the effect of discounters would be particularly important, since they put particular emphasis on this element in trying to attract customers. For this reason, their investments may be particularly beneficial for the poorest groups in those regions who would benefit most from such low priced food commodities, such as the elderly and unemployed — assuming that these groups can access the low prices by shopping in the discount stores, which is not always the case (see further in this section).

However, there is no guarantee that consumers of modern retailers will benefit from lower prices in the long run, when the sector becomes more concentrated. In general, economic theory suggests that high concentration will lead to higher market power and hence higher seller power vis-à-vis consumers, which is translated in higher consumer prices.

However, empirical evidence from the developed world is rather inconclusive. On the one hand, Hall et al. (1979), Lamm (1981), Marion et al. (1993), and various studies by Cotterill (Cotterill 1986; 1999; Cotterill and Harper, 1995) find that there is a positive correlation between retailer concentration and food prices. On the other hand, Kaufman and Handy (1989), Newmark (1990) and Binkley and Connor (1998) find a negative or insignificant correlation between concentration and food prices. Likewise, Binkley et al. (2002) find “*little compelling evidence that consolidated markets engage in non-competitive pricing behaviour*”. Cooper (2003) indicates that based on the findings from the Competition Commission’s report on the UK, prices in modern retailers did not vary with the number of local competitors, but were often lower in the proximity of certain lower priced large stores, as modern retailers often benchmarked the prices of certain key products with the prices of their main competitors. In addition, the presence of different formats can play a role. For example, Dobson et al. (2001) find that while retail concentration in Germany is quite high, there is strong competition on the selling side, with as main engine the “hard discounters” such as Aldi and Lidl. Finally, there is also evidence that modern retailers are “giving with one hand and taking with the other”, meaning that they charge higher prices for some products, while attracting clients with low prices for other products. For example, in the UK modern retailers Tesco and Asda dramatically increased the prices of some key items in the run-up to Christmas, such as toys, light bulbs and batteries. Both companies ran marketing campaigns before Christmas boasting price cuts but many consumers will have been unaware that they were also raising prices of other products in the same period.¹¹

Hence, in the short run, the emergence of modern retailers — and discounters in particular — is expected to lead to reduction in consumer prices, although the effect depends on the stage of modernization of the supply chain and the product type. In the long run, the effect of an increase in concentration and selling power vis-à-vis consumers on prices is uncertain as the existing empirical evidence in developed countries on the impact of increased concentration on price is inconclusive.

BOX 2: CASE STUDIES ON THE IMPACT OF THE RETAIL SECTOR ON CONSUMER PRICES

Ho (2005) finds that in **Hong Kong** (a first wave country) the first modern retailers set higher prices than traditional retailers in the beginning of the 1970s. However at that time, these retail outlets only served the needs of a selected segment of the local population who were familiar with the Western lifestyles and also demanded high quality products. When at the end of the 1970s, modern retailers became more important, they started decreasing the price of rice, the most important staple food in Hong Kong, such that their rice was cheaper than in traditional shops. In the 1980s and 1990s, they decreased the prices of processed commodities below prices asked by traditional retailers, whereas prices of fresh produce were still substantially higher in modern retail outlets compared to wet markets. In the 1990s-2000s, modern retailers started to decrease the prices of fresh produce in order to gain market share by providing their customers “one stop shopping”, which became more attractive with female participation in the labour force. This strategy seemed to be very successful and the market share of supermarkets in the sales of fresh produce increased from almost 0% in the 1980s to approximately 50% in 2005.

11.- Based on article in the Guardian, “‘Systematic, cynical, aggressive’: expert verdict on Tesco and Asda prices”, 12 February 2010.

In **South Africa** (a first wave country), D'Haese and Van Huylenbroeck (2005) surveyed poor rural consumers about their food purchases in rural areas and nearby cities. They show that most households buy most of their food (except meat) in supermarkets, where processed food and staple food, that account for the top ten of consumer items, are offered at lower prices than in traditional outlets. However also prices for some bulk fresh products, such as cabbage, and semi-processed items, such as dairy, are substantially lower in supermarkets compared to traditional outlets. For example, the main staple food product maize meal is 17% cheaper in supermarkets; rice 32%; milk 32%; beans 89% and cabbage 44%.

In **Equador** (a second wave country), Zamora (2005) finds that private label, high quality, washed potatoes in supermarkets are 10% cheaper than bulk, unwashed potatoes in traditional outlets.

In **Mexico** (a second wave country), Martinez (2006) examines retail data for 2003 and 2005. She compares the 2003 prices of 22 leading food (processed and fresh) products in supermarkets, traditional shops and wet markets. The results show that 3 products (out of 22; or 14%) are the cheapest in traditional shops and 7 products (or 32%) are the cheapest in wet markets, while 12 products (or 56%) are the cheapest in supermarkets. In the same study, she also compares the 2005 prices of 17 types of fruit and tomatoes and finds that supermarkets offer the lowest prices for 10 (out of 17) types of fruit. She notes that the 2003/2005 results differ sharply from data from the mid-1990s when supermarkets had higher prices than traditional retailers except for the main processed food products.

In **Thailand** (a second wave country), the Thailand Development Research Institute (2002) shows that on average hypermarkets sell their processed food products 12% cheaper than in traditional shops, while fresh food products are 10% more expensive in hypermarkets compared to traditional shops.

In **Kenya** (a third wave country), Neven et al. 2006 compare prices in supermarkets and traditional shops. They find that on average supermarkets are 3–4% cheaper than traditional shops for processed food items, which represents the majority of consumer food expenditures. After controlling for differences in quality, the price for fresh products are in general higher in supermarkets compared to traditional shops, except for some mass produce items, such as kale, that supermarkets use to attract consumers.

In **Botswana** and **Zambia** (both third wave countries), Emongor (2007) presents retail price survey data which indicate that supermarkets offer the lowest prices for processed food products. For example, for maize flour, the price in Botswana and Zambia was respectively 54% and 22% lower in supermarkets than in traditional shops. Fresh products were more expensive in supermarkets compared to traditional shops in Zambia, which is consistent with the stage of development of the retail sector.

In **Vietnam** (a third wave country), Moustier et al. (2006) shows that processed food products, such as pork, are in general cheaper in supermarkets compared to traditional shops, whereas fresh products are more expensive. For example, tomatoes are 10–20% more expensive in supermarkets and spinach is 30–50% more expensive in supermarkets.

In **Madagascar** (a third wave country), Minten and Reardon (2008) find based on survey evidence that, after controlling for quality differences, prices in supermarkets are significantly higher than traditional shops. In the case of rice, prices are 74% higher than on the wholesale markets and about 68% more expensive than other retail outlets. Tomatoes are 120% more expensive than on the wholesale markets and between 72% and 84% more expensive than in other retail outlets.

5.1.3 Impact on Product Quality

Besides differences in prices between modern retailers and traditional markets, there are also differences in the quality and variety offered in modern retailers compared to traditional markets. Similar as in case of prices, the quality and variety offered in modern retailers depends on the level of development of the retail sector.

Initially or in poorer countries, modern retailers tend to focus on a limited range of high quality packaged and processed food products. For example, in Hong Kong, Ho (2006) finds that modern retailers focused on a niche market of expats and upper income consumers that demand high quality products. However, over time they tend to shift towards a variety of products (also semi processed and fresh products) to add the mass-market to their marketing strategies.

Reardon et al. 2010 indicate that in general the quality of food products sold in modern retailers is higher than in traditional shops. In some cases this difference in quality is reflected in the price of the products and modern retailers focus on a niche market of upper and middle income consumers that are willing to pay for high quality products. For example, in Indonesia, Natawidjaja et al. (2007) show that tomatoes in supermarkets have a superior quality and price than those sold on traditional markets. However, in some cases modern retailers offer higher quality products for a lower price than traditional shops, e.g. Zamora (2005) in Equador.

Our own consumer surveys in the remote areas of Bulgaria, Romania and Poland confirm this. All interviewed stakeholders mention besides “price” also “quality” as an important reason to buy certain products in the modern retailer. Especially for meat and dairy products, quality and food safety concerns are an important reason for consumers to start purchasing these products in modern retail outlets (Table 18) (see also section 4.1.6).

Also the farmers, that we interviewed, confirm that quality requirements are more important in their contracts with modern retailers compared to traditional wholesalers or the processing industry (Table 19). While only in 49% of the cases the traditional wholesaler requires the farmer to keep a diary on chemical use, this is required in 62% of the cases when the farmer delivers to a modern retailer. Similar, we find that in 38% of the cases the modern retailer requires to provide information on the harvest date and specific parcel, while this only required in 11% of the contracts between farmers and traditional wholesalers.

However, several studies have already argument that the “superior” quality of products from modern retailers is debatable and that it is important to make a distinction between “true” quality

Table 19: Quality requirements requested by modern retailers

	Modern Retailer	Traditional Wholesaler
Requirement to keep a diary on chemical use	62%	49%
Restrictions in (legal) chemical use	64%	57%
Indication of the harvest date and parcel	38%	11%

Source: Calculations based on own survey results

(based on health and safety standards) and “esthetic” quality (based on standards for size, shape and colour). Modern retailers have been criticized to take mainly the latter in account to reject a large percentage of products that are produced according to the health and safety standards, but do not fulfill the modern retailers’ “esthetic” requirements. This is a practice which is questionable from sustainability/ food security point of view.

Based on our interviews, the evidence of such practices is mixed. In Bulgaria, for example, the representative of the producer organization indicated that important benefit contracting with a modern retailer, is that they buy the entire production, including the products which are classified as second class or non-standardized. The first class products are sold in the fruit and vegetable department of the modern retailer, while the second class and unstandardized products are used in the prepared dishes. Also the managers of the modern retail stores that we interviewed, indicate that they never reject deliveries because of “esthetic” quality standards.¹² However, 24% of the producers mention that the modern retailer to whom they delivered in 2010 rejected at least once a delivery because “esthetic” characteristics while their products were fresh and fulfilled all quality standards. This was never the case for deliveries to a traditional wholesaler.

5.1.4 Impact on Product Variety

In terms of variety of products several studies find that modern retailers offer more variety (e.g. Reardon et al. 2007a; Dries and Reardon, 2005). However, the literature mentions that there are large differences between the different product categories.

For example, for staple and processed commodities, modern retailers offer the same brands than the traditional outlets, but modern retailers offer more private brands (see rapid growth of private brands in the retail sector, which is discussed in section 4.1.6), more imported brands and more health-related brands, such as organic products. This is also confirmed by our interviews where modern retailers indicate that they offer such labeled products, while those are not offered in traditional shops. Moreover, the modern retailers indicated that private labeled products have largely increased in importance over the past years and they expect that this trend will continue in the future.

For dairy products, there is a large difference between the offerings of modern retailers compared to traditional retailers. Modern retailers have economies of scale, much more self-space and better refrigeration facilities than small shops, which allow them to offer more dairy product diversity. In addition, especially for their dairy activities, modern retailers benefit from their symbiotic

12.- Nevertheless, all managers, except two managers, indicate that they sometimes reject deliveries (from very rare to each week), but because the products were not fresh.

relationship with big dairy processors, such as Nestlé and Danone (For example, see Hu et al., 2004 for China,; Farina et al., 2005 for Latin America and Dries and Reardon, 2005 for Russia).

Our interviews confirm that this is also the case in remote areas of Bulgaria, Romania and Poland: in a modern retailer there were on average 120 different dairy products, while only on average 11 different dairy products in a traditional shop.

In terms of variety of fresh products, Reardon et al. (2010) observe that there is a more diverse offer of fruit and vegetables in modern retailers compared to fruit and vegetable shops, but a modern retailer would be similar in diversity (or less) compared to a large wet market. However it is important to note that there is a time dimension in the diversity of offerings of fruit and vegetables. In general, traditional markets offer a highly diversity of fresh produce, with sharp seasonality. When modern retailers are in their early development stage, they stock less local diversity than local markets, but on the other hand, they offer more imported fresh food products (see Reardon et al. 2007b for Mexico). When modern retailers develop further, the fresh products section becomes a 'battle arm' and consumers turn to modern retailers rather than local markets because of the large diversity of local and exotic products.

In Bulgaria, Romania and Poland, the interviewed stakeholders indicate that in all shops (modern retailers and traditional shops) the variety in products substantially increased and they relate this to a combination of

- *Increased purchasing power:* In the period 2000 — 2010 all three countries experienced a large increase in GDP per capita, which is reflected in increased consumer demands.
- *Privatization of the processing industry:* In the period after transition, the processing sector was privatized, which led to the emergence of several new companies and increased competition in one product category, whereas before there was only one processing company responsible for the production of one product category.
- *Competition:* Both traditional shopkeepers and supermarkets mention increased competition in the retail sector as an important reason to increase the variety offered in the shop in order to attract more clients and gain market share.

On average, the number of different products in the modern retailers increased by 53% compared to the beginning of 2000s in Poland and the mid-2000s in Bulgaria and Romania. (Table 20). Also the variety of products in traditional shops increased substantially. In the interviewed traditional shops close to the supermarket there were on average 368 products in the beginning/mid 2000s, while in 2010 this number increased to on average 415 products. Similar, we find that also the number of products in traditional shops far from the supermarket increased (from on average 223 products to 228 products in 2010). This indicates that there might be important spillover effects of the changes in the retail sector on the traditional shopkeepers. This is also reflected in the fact that the traditional shops close to the supermarket (and hence those most under influence of competition from the supermarket) experienced the largest increase in the assortment. However, the differences between traditional shops close and far from the supermarket are not statistically significant (but this could be related to the small sample size).

Table 20: Variety in supply in modern retailers and traditional shops (number of products)

	Beginning of 2000s (Poland)/ Mid 2000s (Bulgaria & Poland)	2010	Change (%)
Modern retailer	3.500	5.350	53%
Traditional shops close to the supermarket	368	415	13%
Traditional shops far from the supermarkets	223	228	2%

Source: Own calculations based on stakeholders interviews

5.1.5 Impact on Dietary Trends

One of the concerns related to the rapid emergence of modern retailers is that it worsens diet trends by stimulating overconsumption of processed food and abandonment of fresh food.

In early stages, modern retailers indeed focus on packaged and processed food products, such as flour, bread, rice, vegetable oil and condiments. However, when modern retailers and regions develop, there is growth in sales in semi-processed products, such as meat, dairy and fish (see also section 5.1.1). More recently, the market share of the fresh produce section rapidly increased. For example, in Hong Kong the market share of fruit and vegetables increased from approximately 0% in the 1980s to approximately 50% in 2005 (Ho, 2006). In Mexico, fresh products represented 1–2% of food sales in the beginning of the 2000s, while currently this is approximately 11% (Reardon et al. 2007b).

However, these global characteristics do not tell us much about individual consumption patterns of supermarket customers. There are a few studies that have analyzed the relationship between shopping in modern retailers and individual diet composition effects.

Asfaw (2008) finds for Guatemala that consumers that do their shopping at supermarkets tend to consume processed foods at the expense of staple foods. A 1% increase in the value of supermarket purchases increases the shares of pastries (including cookies and crackers) and other highly processed foods (sweets, chocolate, sausages, ice creams, etc.) in the total calorie availability by 14,4% and 6,0%, respectively.

The value of modern retail purchase does not have an impact on the share of vegetables and fruits. But it does have a negative impact on the share of staple foods such as corn and pulses. The results also reveal that the value of modern retail purchase is positively associated with the individual Body Mass Index (BMI), indicating that consumers that do their shopping at modern retailers tend to have a higher BMI and consequently are more likely to suffer from obesity and health concerns associated with it.

In Tunisia, Tessier et al. (2007) find that the emergence of modern retailers has a positive (but small) effect on diets. Modern retailers offer some new food products (such as avocados, asparagus, kiwis, mangoes, salmon, basmati rice, low-fat products, etc.) that cannot be found elsewhere and

consumers have shifted from a limited number of staple products to a more diverse diet. Hence, they find a slight improvement of diet quality among those people who regularly visit modern retailers.

In the past 20 years, we find significant changes in the dietary patterns of the inhabitants of the three case study countries. However, we should note upfront that it is unclear to what extent we can relate these changes to the emergence of modern retailers as this evolution coincides with the transition process and EU integration process.

There are substantial differences between countries. In Bulgaria, we find a continuous decrease in food consumption. In 1989, individuals consumed on average per day 3.622 kcal, while in 1995 this was on 2.899 kcal and in 2007, 2.766 kcal per day (Table 21). In terms of fat consumption, we find a decline in consumption in the years after transition and, more recently, an increase in fat consumption (Table 22). In Poland, we find a decrease in food and fat consumption in the years after transition, but more recently food and fat consumption is recovering and almost at the pre-transition level (Table 21 and 22). These evolutions are very different from the evolution of food and fat consumption in Romania, where food and fat consumption has continuously increased over time (Table 21 and 22).

There is also a shift in the types of fat that are consumed (Figures 11A, 11B and 11C). In all three countries, the intake of vegetables fat (unsaturated, “healthy” fat) increased at the expenses of animal fat (saturated, “unhealthy” fat).

However, on the other hand there is an increase in the consumption of processed food products, such as for example pre-cooked meals, sweets, confectionery, sauces, condiments, ... In Bulgaria, for example, sales of confectionery increased by 3% per year in the period 2004–2009, while in Poland and Romania, this was respectively 5% and 8% per year (Table 23–25). Also for other processed food products sales increased, although more recently sales of processed food seems to stabilize due to a decreasing purchasing power as a result of the global economic and financial crisis. This is especially the case in Bulgaria, the poorest country of the three. Most of the consumers who

Table 21: Average consumption in the case study countries (kcal/capita/day)

	1989	1995	2001	2007
Bulgaria	3622	2899	2773	2766
Poland	3490	3306	3410	3421
Romania	2938	3065	3276	3455

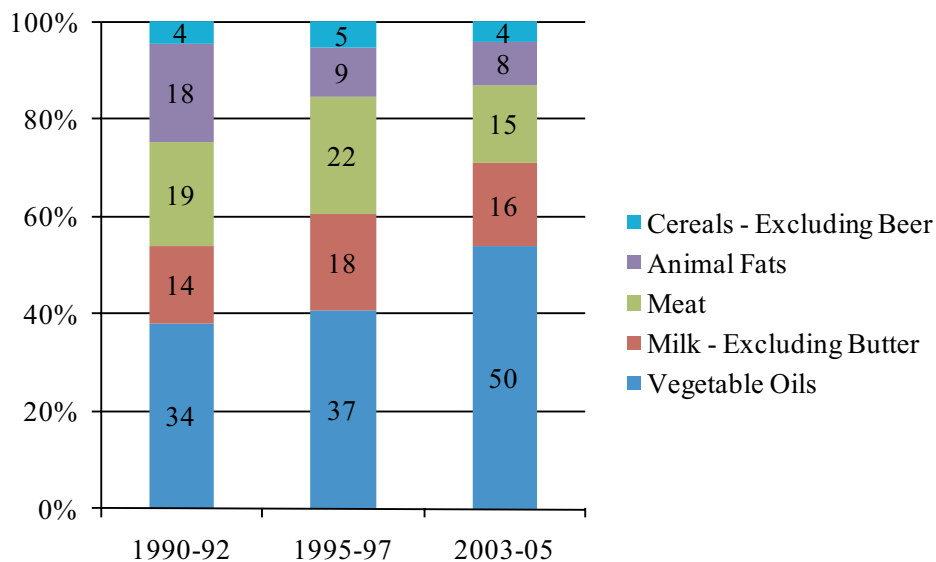
Source: FAOstat Online Database

Table 22: Average fat consumption in the case study countries (grams/capita/day)

	1989	1995	2001	2007
Bulgaria	122	92	93	96
Poland	119	110	113	114
Romania	84	87	100	108

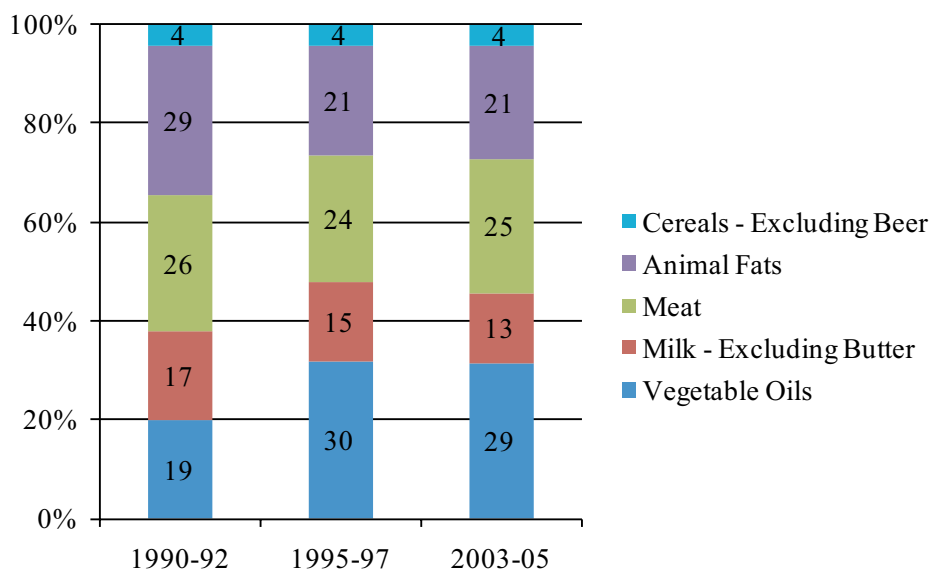
Source: FAOstat Online Database

Figure 11A: Share of different food categories in the total fat consumption in Bulgaria (%)

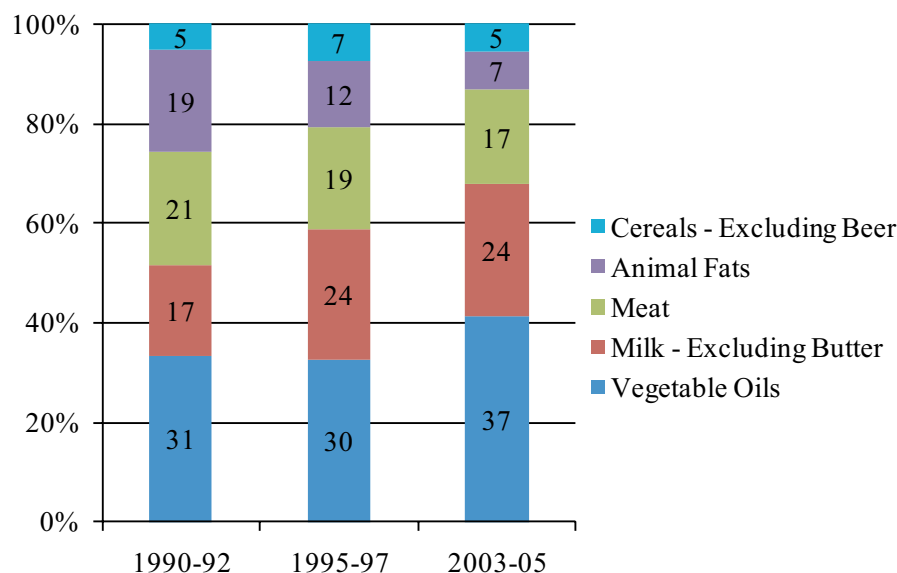


Source: FAO

Figure 11B: Share of different food categories in the total fat consumption in Poland (%)



Source: FAO

Figure 11C: Share of different food categories in the total fat consumption in Romania (%)

Source: FAO

stated that they reduced consumption of (processed) food products were either older people or those living in rural areas (Euromonitor, 2010).¹³

In general, processed food products contain large amounts of trans fat, which is the common name for unsaturated fat with trans-isomer fatty acid. The excessive consumption of trans fat can lead to serious health risks, such as for example obesity and coronary heart disease. A study by Stender et al. (2006) on the occurrence of trans fat in processed food products in several European countries showed that processed foods in all three countries contained high levels of trans fat compared to other European countries.

In order to encourage healthier eating habits, the Romanian minister of health proposed in the beginning of 2010 a “fat” tax on the consumption of unhealthy food products, such as sweets, soft drinks and fast food.¹⁴ However critics of the Romanian tax indicate that the tax will be ineffective as it only targets certain food products and for example kebabs — one of Romania’s favorite foods — and pizza will be exempt from the levy.

Nevertheless, we need to emphasize that we have no evidence that any of these evolutions in food consumption patterns are related to the emergence of modern retailers and more profound research is needed to separate out this effect from the changes that the transition process and, more recently, economic development as result of EU integration, caused.

13.- The decrease in sales of (processed) food products can be explained by a decrease in purchasing power, including due to a decline in income from remittances of rural migrants working abroad.

14.- Also other European countries have introduced measures to encourage consumption of healthy products: Denmark and Austria introduced a ban on the use of trans fat in food products; Norway has a tax on sugar and chocolate; Norway, Sweden and the UK have a ban on commercials for fast food at certain times of the day (Holt, 2010).

Table 23: Sales of processed food products in Bulgaria ('000 tonnes; 2004–2009)

	2004	2005	2006	2007	2008	2009
Confectionery	25,1	25,5	26,4	27,2	28,0	28,6
Sweet and savoury snacks	5,3	5,4	5,5	5,7	5,5	5,5
Ready meals	2,0	2,2	2,3	2,5	2,6	2,7
Sauces and condiments	18,3	18,9	19,5	19,0	18,8	18,6
Processed food (frozen, dried and chilled)	169,4	170,9	176,6	170,6	165,7	163,3

Source: Euromonitor (2010)

Table 24: Sales of processed food products in Poland (tonnes; 2004–2009)

	2004	2005	2006	2007	2008	2009
Confectionery	160,1	168,1	175,2	184,3	196,7	203,4
Sweet and savoury snacks	97,7	101,7	105,8	107,8	110,3	113,0
Ready meals	49,4	53,8	58,1	61,3	64,9	68,9
Sauces and condiments	232,5	244,2	255,8	262,2	269,4	276,4
Processed food (frozen, dried and chilled)	390,1	407,6	424,5	437,5	451,1	467,1

Source: Euromonitor (2010)

Table 25: Sales of processed food products in Romania (tonnes; 2004–2009)

	2004	2005	2006	2007	2008	2009
Confectionery	35,2	38,7	41,2	45,2	48,0	49,2
Sweet and savoury snacks	16,3	17,7	21,5	25,1	28,1	30,6
Ready meals	2,1	2,2	2,2	2,3	2,3	2,3
Sauces and condiments	11,0	11,6	12,1	12,8	13,4	13,9
Processed food (frozen, dried and chilled)	269,3	288,9	302,9	322,6	338,6	353,4

Source: Euromonitor (2010)

5.1.6 Type of Consumers

An important issue is the profile of the consumers shopping at modern retail chains. Different studies have analyzed the socio-economic characteristics of consumers shopping in modern retailers compared to traditional shops (e.g. Pingali, 2007; Gorton et al. 2009; Rodriguez et al., 2002). In general, they find that consumers of modern retailers are living in urban areas, are younger and better educated.

The 'classic' hypotheses of Goldman (1974) is that in developing countries mainly the rich urban consumers, who are able to drive to the store, buy big units and store the products, will benefit from the emergence of modern retail chains.

However, Goldman's statement was based on anecdotal evidence. Currently, there is more empirical evidence and the retail sector itself has changed. Recent evidence shows that in the early stages of supermarket penetration, it is mainly the upper and middle class that tends to shop in supermarkets. For example, in Vietnam, a country in the early stage of supermarket penetration, Figuié and Moustier (2009) find that poor consumers purchase very little from supermarkets due to material constraints (price, transport, etc.). In contrast, in Kenya, Neven et al. (2006) show that the poorest households are not excluded from the potential benefits that supermarkets may offer as the majority of Nairobi's poorest households (60%) visit supermarkets (compared to more than 99% for the richest households). However, their data show that the results depend on the product category. For example, only less than 1% of the households with the lowest incomes buy fresh produce from supermarkets, while 40% of the richest households buy fruits and vegetables in the supermarket.

In Bulgaria, Romania and Poland, we did not have reliable information on the income of consumers, but nevertheless we found some evidence of differences between consumers going to modern retailers and consumers visiting traditional shops close to the supermarket. However, we note upfront that these results should be interpreted with caution as we did not find the differences to be statistically significant, which could be related to the small sample size.

In general, we find no significant difference in age, gender, education or household size between consumers visiting modern retailers and those visiting the traditional shop close to modern retailer (Table 26). The only factor that significantly differed between consumers of modern retailers and consumers of traditional shops close to the modern retailer is the distance between their home and the shop (see also section 5.1.7)

Table 26: Differences between consumers of modern retailers and traditional shops close to the modern retailers

	Consumers modern retailers	Consumers traditional shop close to modern retailer	T-test (P-value)
Age (years)	45,95	49,74	0,19
Education level (1= Primary; 2=Secondary; 3= Tertiary)	2,59	2,54	0,73
Gender (0= Female; 1= Male)	0,52	0,40	0,17
Household size	3,10	3,12	0,95
Distance to house	1,72	0,75	0,00

Source: Own calculations based on stakeholders interviews

5.1.7 The impact of Rural Infrastructure

The most important factor that significantly differs between consumers of modern retailers and traditional shops is the distance to the shop. In general, consumers of modern retailers live on average 1,74 km from the shop, while consumers of traditional shops live on average on a distance of 0,54 km from the shop (Table 26). “Proximity of the shop” is also one of the most mentioned reasons to buy in the traditional shop, especially for older individuals.

Interestingly, consumers interviewed in a traditional shops located far from the modern retailer (between 15-30 km) also indicate that they buy at least some of their groceries (mainly processed, staple food and beverages) in a modern retailer. On average they go 2 times per month to a modern retailer compared to 4 times per month for consumers interviewed in a traditional shop close to a modern retailer and 8 times per month for consumers interviewed in a modern retailer.

Approximately one third of the consumers in traditional shops far from the modern retailer indicate that they would like to change their consumer behaviour and buy more in modern retailers. The most important constraint for changing their behaviour is that they do not have a car and that public transport is insufficient.¹⁵ Also the consumer organization representatives mentioned limited car ownership and poor public transport as important constraints for rural consumers. Moreover, in Romania the representative indicates that even if rural consumers have a car, it is difficult to go to town, where the modern retailer is located, as the condition of the roads is in general very poor.

The results of our analysis in section two indicate that especially the poorer regions with a larger share of older inhabitants have, on average, fewer cars per hundred inhabitants. In Poland, these are the regions close to Belarus and Ukraine; in Romania, the regions close to Moldova and in Bulgaria, the regions close to Romania. These results are an indication that especially older and poorer households are likely to be excluded from the benefits (lower prices, more variety ...) that modern retailers offer.

5.1.8 Impact on Rural Services

Traditional retail shops offer some services which modern retailers and discounters typically do not offer. One important service for poor people in remote areas is that traditional shopkeepers often provide consumer credit. Several consumers mentioned that

“What I like about the traditional shop is that they know me and when I don’t have sufficient money, they allow me to pay after I received my salary”.

Traditional shops sometimes also provide other services such as delivering the products at home, which appears to be especially important for the older people which are less mobile. Given the mobility constraints and the demographic characteristics (ageing) of the rural population this may be an important constraint in the most remote areas.

15.- In case they buy some of their groceries at the modern retailer, 86% of the consumers of the traditional shop far from the modern retailer use their own car to the modern retailer, while 14% use public transport. Note that for all consumers, we find that 62% of the consumers use their car to go to the modern retailer, while 20% go on foot and the remaining 18% of the consumers use public transport. 30% of those that use their own car or go on foot indicate that they would like to use public transport if there was a more frequent connection between their house and the modern retailer.

Modern retailers, on the other hand, offer their consumers in most cases a loyalty card. When a consumer visits the store, he/she receives a number of points, depending on the amount of money that he/she spends during the visit. After accumulating a specific amount of points, the consumer can exchange these points for gifts or discounts. However, from our interviews we learnt that usually consumers only receive a very limited number of points per leva, lei or zloty, that they spend in the store. Another aspect that consumers appreciate about modern retailers, is that they receive brochures, which allow them to compare prices and anticipate when there are special discounts (e.g. buy seven units and get one for free).

Box 3: IMPACT ON CONSUMERS¹⁶

Opportunities

- The emergence of modern retail in rural regions has major effects on **consumer behavior** as consumers moved increasingly and significantly away from traditional shops and open markets to supermarkets, hypermarkets and discounters. However, there are substantial differences between product categories: consumers buy especially processed and semi processed products in modern retailers, while they still purchase fruits and vegetables through the traditional channels. Interestingly, we found that also consumers living relatively far from the modern retailer go on average two times per month to do their grocery shopping in the modern retailer, indicating that they are not ex ante excluded from the potential benefits the modern retailer can offer. However, there are also consumers living far from the modern retailer that would like to buy more in the modern retailer (see also threats).
- **Prices** are lower in the modern retailer although this depends on the product type and the level of modernization of the procurement system. In Bulgaria, Romania and in Poland, prices appear to be an important factor in consumer behavior for all product types, indicating that prices are lower in modern retailers compared to traditional outlets. A price reduction will benefit all types of consumers, but lower income consumers will proportionally benefit more as they usually spend a large proportion of their income on food consumption.
- All interviewed stakeholders mention “**quality**” as an important reason to buy certain products in the modern retailer. Especially for meat and dairy products, quality and food safety concerns are important reasons for consumers to start purchasing these products in modern retail outlets, but also for fruits and vegetables, producers indicate that the quality requirements that modern retailers impose are more stringent than those of other trading partners (e.g. traditional wholesalers).
- Modern retailers offer a larger **variety** of products, but all stakeholders mention that also traditional shops increased their product offer. This can partly explained by increased competition with modern retailers, but also because increased purchasing power and more choice offered by processing companies.

16.- We opted not to distinguish between the effects on middle and low class consumers as most opportunities and threats are similar for both groups. However, when one of the issues disproportionately affects one the groups we will clearly indicate this.

- Over the past years, **consumption** patterns changed and in all countries, the intake of vegetables fat (unsaturated, “healthy” fat) increased at the expenses of animal fat (saturated, “unhealthy” fat). However, we want emphasize that we do not have any evidence to what extent we can relate this change to the emergence of modern retailers as this evolution coincides with the transition process and EU integration process.
- Consumers indicate that modern retailers offer less **services** than traditional shops (see threats), but nevertheless they indicate that they use the services that the modern retailer offers. For example, they use the loyalty card although they mention that the discounts are very small. In addition, they also mention the importance of (free) brochures, which allows them to compare prices and be aware of special discounts. This service may benefit especially lower income consumers.
- Modern retailers are typically more costly in terms of transport to visit than small traditional shops in the consumer’s neighborhood (more far away from the consumers’ home), but modern retail stores also tend to have a far wider assortment of products than a small shop, and thus one trip to a large store would be equivalent to many trips to a variety of small shops. This is also reflected in the importance of **convenience** as a reason to buy specific products in the modern retailer.

Threats

- In the short run, **prices** in modern retailers appear to be lower compared to traditional shops, but this is no guarantee that also in the long run, consumers will benefit from lower prices, when the sector becomes concentrated and modern retailers can exercise more seller power vis-à-vis their consumers. Nevertheless, it is important to mention that the existing empirical evidence from developed countries on the impact of increased competition on prices is inconclusive.
- Several respondents indicate that they would like to change their **consumer behavior** and go more to the modern retailer, but that they are constrained in doing so as they do not have a car and public transport facilities are insufficient. In addition, they mention the poor state of the roads as an important constraint for going to the modern retailer. As a result, especially old and poor (without car) rural households are excluded from the potential benefits (e.g. lower price, more variety, convenience, ...) that modern retailers offer.
- Several consumers indicate that the **services** that traditional shopkeepers offer (e.g. credit provision, home delivery of groceries...) are important to them and they fear that when modern retailers will become more important that these services will disappear. Currently, especially old (home delivery) and poor (credit) households benefit from these services.
- In the past years, the **consumption of processed food products** strongly increased. In general, these products contain a high proportion of trans fat, which has a disproportionately large negative impact on health. However, we want emphasize that we do not have any evidence to what extent we can relate this change to the emergence of modern retailers as this evolution coincides with the transition process and EU integration process.

Recommendations to maximize positive and mitigate adverse social impacts on consumers

- **Improvement of rural infrastructure and public transport facilities** will be crucial to make sure that all rural inhabitants can benefit from the changes in the retail sector. In addition, investment in the rural infrastructure will make rural regions more attractive for modern retail investment. This investment should come from the government, but in the meanwhile, modern retailers and local governments could engage in private-public partnerships to provide some services and initiatives that increases access to modern retailers for the rural consumers that are currently excluded from the potential benefits that modern retailers may offer. For example, they can provide a bus service connecting the village to the shop.
- Food consumption is an individual choice and hence modern retailers are not responsible for their customers. However, the modern retailer **may promote the consumption of healthy products**, for example by increasing the visibility of healthy products or by introducing certain food and safety standards in the production of their private-label products. In addition, they could also provide more information on healthy food products and potential risks of an unhealthy diet to increase consumer awareness. However, not only the modern retailer can provide information, also the government can play an important role in increasing consumer awareness on the risks of an unhealthy diet, for example, by financing TV spots that promote the consumption of fruits and vegetables.
- Currently, producers indicate that modern retailers sometimes reject their deliveries which are produced according to the health and safety standards, but do not fulfill the modern retailers' "esthetic" requirements. Modern retailers should be stimulated to find a **good balance between "true" quality and "esthetic" quality requirements**. They could engage to buy a part of the production that does not fit their "esthetic requirements" (but for example at a lower price). These products could be sold with a discount or could be used in the preparation of pre-cooked dishes.

5.2 Impact on Producers

The introduction of modern retail chains induced major changes in the product procurement systems and "modernized procurement systems", emerged. This emergence is crucial to study the implications of modern supply chains for local producers. If procurement systems change, the restructuring of the retail sector "translates" into a transformation of the market that farmers face.

Procurement system modernization typically includes important elements: the introduction of private standards for quality and safety; concentration of the buyers and associated changes in bargaining power; the use of distribution centers for supply sourcing; and a shift from spot markets relations in traditional wholesale markets to some form of vertical coordination mechanisms in the relationship with suppliers.

These changes may have a variety of effects on producers: how many producers can supply, under which conditions, what type of producers can supply, etc. all of which ultimately affects employment

and incomes of farmers in the region. An important issue, besides the overall employment and income effects is the impact of the growth of modern retailers on small producers. Many reports have emphasized that especially small and low skilled producers will not be able to address the quality standards imposed by modern food chains, and will be disproportionately negatively affected. We will discuss this below.

5.2.1 Changes in the Supply Chain

Until twenty years ago, vertical coordination of the supply chains was widespread in transition countries as all stages in the food production and distribution were coordinated and determined by the central command system (Rozelle and Swinnen, 2004).

In the 1990s, privatization and market liberalization led to the emergence of private wholesalers that replaced the government-controlled retailers. For example, by 1999, there were in Poland five nationwide wholesale networks (exclusively owned either by foreign capital or by partnerships of foreign and domestic companies), five purchasing groups, 60 regional wholesale networks (holding a 30% share of the wholesale market), and 14.000 local wholesale company warehouses (mainly family businesses). These new private wholesalers collected their products from farms and processing companies and they delivered the products to the remaining state-owned chains, the new private chains, and even to the green markets and small shops.

However, the growth of modern retail formats, facilitated by substantial FDI, and increased competition in the sector created the need to reduce costs, to deliver consistent volumes of standardized products and to increase product quality and variety. This led to large changes for the wholesale sector and the farmers delivering to the wholesales sector.

Changes in the relationship wholesaler — retailer

There were substantial changes for the wholesales sector as retailers started to work with centralized procurement systems that were delivered by specialized wholesalers. In order to reduce the transaction costs, generate economies of scale, work with fewer wholesalers and have a tight control on quality of the product, modern retailers prefer to work with a system where there is one centralized buying office for one product category (e.g. meat) and one or several distribution centers over the country to supply the local stores¹⁷.

The distribution centers are delivered by a wholesaler, which is specialized in one product category and dedicated to supplying modern retailers. That means that the wholesaler is more responsive to quality, safety, and consistency requirements of modern retailers than are traditional wholesalers who aggregate products over many producers and qualities and usually have a range of products that they deliver¹⁸.

Typically a chain moves from a distribution center for a zone to a distribution center or set of linked distribution centers for a country in order to source over the country and get the cheapest and best quality products by having a larger supplier pool from which to choose. This evolution towards

17.- There is also coordination of the distribution centers across borders. For example, in 2003, Ahold created Ahold Central Europe (ACE) to coordinate its operations in Poland, Czech Republic, and Slovakia. ACE is based in the Czech Republic, and merges “backroom functions” such as product procurement and administration for the Ahold retail chains in Central Europe (www.ahold.com).

18.- In many cases the retail company retail chain acquires or enters in a joint venture with the wholesale firm. Acquisition has the advantage of control, exclusivity so that it also “captures” a supplier base, and making the wholesaler a profit center (Dries et al. 2004).

centralized distribution centers started in the first wave countries and is currently also happening in the second and third wave countries.

Several cases illustrate these developments. For example, in 2009, Tesco has 319 stores in Poland which are supplied by three distribution centers and recently, Tesco has signed a deal to construct the largest distribution centre in Poland. This 57.000m² distribution centre will serve Tesco stores in southern Poland and will potentially employ 1.000 people. (www.polishmarket.com April 24, 2010). Also in Romania and Bulgaria, distribution centers start emerging. For example, in Romania, the German retailer Lidl is planning to open a new logistic centre, which will eventually serve over 100 stores in Romania in 2010. In Bulgaria, Lidl is planning to open a distribution centre in Sofia. Penny Market, another discounter which is active in Romania and Bulgaria, has also a distribution center in each country.

Based on our interviews with retailers in Bulgaria, Romania and Poland, we find that the above described evolution also depends on the product type. For processed and semi-processed products, we find that currently the supply of the individual stores is centralized through distribution centers. In contrast to processed and semi-processed food products, we find that the procurement of fresh products, such as fruits and vegetables, is often still organized at the level of the store and that the store is responsible for the purchases of fruits and vegetables through contracts with local suppliers (mainly large legal entities or cooperatives). However in some cases also the purchases of fruits and vegetables are centralized through a distribution center as this was for example the case for a major retailer in Romania.

Changes in the relationship farmer — wholesaler/retailer

In the beginning of the 1990s, the traditional wholesales channels were not able to deliver the quantity and quality of supplies that modern retailers requested. There are several reasons for this. First, farms were not willing to supply their output to the processor or wholesalers because they feared not being paid once they delivered the product (Gow and Swinnen, 1998; Van Herck et al. 2010). Second, if farms wanted to supply, they were sometimes not able to because they could not access basic production factors (feed, fertilizer, seeds, capital, etc.). Third, if farms wanted to supply, they were often only able to supply poor quality supplies because (a) they lacked the necessary inputs to improve the quality and (b) they lacked expertise and know-how for producing high quality.

Retailers and wholesalers typically addressed these problems by introducing a “preferred supplier system” (Dries et al., 2004; Dries and Reardon, 2005; by Farina et al., 2005).¹⁹ By working with contracts (explicit or implicit contracts), wholesalers (and retailers) were able to select the suppliers that were able to reach a certain level of quality. This lowers their transaction costs because it lowers the search costs and the number of suppliers per unit sold.

In their contracts with suppliers, wholesalers give incentives (positive and negative) to meet the demanded requirements and typically these include vertical coordination mechanisms, such as prompt payments and farm assistance programs. Farm assistance has taken many forms including input supply programs, investment assistance programs, trade credit, bank loan guarantee programs, extension and management advisory services, etc. (Dries et al. 2009; Gorton and White, 2007; Swinnen, 2007).

19.- See more on the purchasing practices of modern retailers in section 5.2.3.

Over the past ten years, the importance of vertical coordination of the supply chain has been rapidly increasing in the transition and developing countries. In the Czech Republic, Slovakia and Hungary, 80% of the corporate farms, who dominated farm production in these countries, sold crops on contract, and 60–85% sold animal products on contract (World Bank, 2005). The main reason for contracting was in all three countries, the guaranteed sales. However, besides offering a guaranteed supply to farmers, these contracts often also include farm assistance programs, which are also a fairly important reason for farmers to contract. The growing importance of farm assistance programs and its positive impact on agricultural yield and product quality is also indicated by other studies, including in Dries et al. (2009) who interviewed dairy processors in several Eastern European countries and in Gorton and White (2007) who interviewed agro-food processors in five CIS countries.

In Bulgaria, Romania and Poland, we only find limited evidence of the existence of farm assistance programs offered by supermarkets. The programs that are offered to the producers are transport, assistance in sorting and packaging and advance payments (offered by some retailers). In Bulgaria, the producer organization representative mentioned that specialized wholesalers sometimes provide bank loan guarantees to a minority of their suppliers.

Interestingly, all producer organization representatives indicate that the most important benefit of contracting with modern retailers or specialized wholesalers is that these partners offer written contracts, while the traditional wholesalers still work with oral contracts. Usually a written contract includes conditions on price, frequency and quantity of delivery and food safety and quality standards that need to be respected and they are more elaborated than contracts between farmers and traditional wholesalers. For example, while only 45% of the contracts between farmers and traditional wholesalers include conditions on the frequency of deliveries, this is included in 94% of the contracts between farmers and modern retailers (Table 27). For producers, the most important benefits of these written contracts that they are a way to reduce market risk and have guaranteed sales. The Polish producer organization formulated it as follows:

“Cooperation with supermarkets made the trade more civilized”.

Table 27: Contract terms (% of the contracts that includes this)

	Modern retailer	Traditional wholesaler
Quantity	94%	71%
Frequency of delivery	94%	45%
Minimum quality requirements	91%	50%
Food safety requirement	79%	45%
Requirements related to size, shape or colour	70%	27%
Price	45%	27%
Mode and speed of payment	91%	50%
Premiums for quality and/or large quantities	15%	9%
Penalties for not fulfilling the terms of the contract	42%	23%

Source: Own calculations based on stakeholders interviews

5.2.2 Impact on Processing Companies

In the past years, there was a rapid increase in product variety for all food products, including processed food, such as milk, bread and sugar, which modern retailers and discounters purchase from food processing companies (see section 4.1.4). However, this is no guarantee that local food processors benefited from these changes as it is possible that modern retailers only increased the sales from large, multinational food processing companies.

The number of food processing companies has decreased over time, except for Romania where the number was relatively stable. In Bulgaria, the number of food processing enterprises decreased by 2,2% per year and in Poland by 3,4% (Table 28). Much of this was due to rationalization and scale increases. Firm size and the total number of employees employed in the food processing sector increased. In Bulgaria, the number of employees in food processing companies increased per year with 2,4%, while in Poland, the increase was more limited, only 0,4% per year. In Romania, the number of employees was relatively stable in 2007 compared to 2003. The impact on firm size in terms of turnover is larger than on employment. Turnover increased by approximately 15% per year in each of the three case study countries.

It is unclear to what extent changes in modern retail sector had an impact as these changes coincide with the recovery from transition, strong economic growth and EU integration. Most likely the impact is rather limited.

Table 28: Number of employees in food processing companies, number of companies and annual turnover (in Mio Euro)

		2001	2003	2005	2007
Bulgaria	Number of persons employed	93509	102444	106962	110208
	Number of enterprises	6265	6375	5937	5300
	Turnover (Mio Euro)	1858,2	2122,9	2811,9	3910,8
Poland	Number of persons employed	na	439050	438833	447061
	Number of enterprises	na	17975	16998	15498
	Turnover (Mio Euro)	na	27308,8	34501,9	43639,6
Romania	Number of persons employed	208924	200476	203840	207638
	Number of enterprises	9929	10688	10820	9993
	Turnover (Mio Euro)	4913,0	5233,1	7171,3	10065,9

Source: Eurostat Online Database

5.2.3 Impact on Small Producers

A key concern in the debate on the welfare implications of these changes is that the emergence and rapid spread of modern supply chains in countries will push a large share of farmers and in particular the poor, small farmers, out of the market as retailers prefer to contract with larger and wealthier farmers. This can potentially affect the way income is distributed within the rural economy and can exacerbate existing patterns of economic stratification. The reason that in particularly small farmers are said to lose out is because of two reasons. First, there is an important fixed transaction

cost component in costs of exchanges between farms and retailers, making it more costly for retailers to deal with many small farmers than with a few larger suppliers. Second, when some amount of investment is needed in order to contract with or supply to the company, small farms are often more constrained in their financial means for making the necessary investments, either because they do not have sufficient own resources or because they have problems accessing external funds in imperfect rural financial markets.

However, one can also identify several reasons why retailers could want to work with small, poor farmers such that the impact of the emergence and rapid growth of modern supply chain on farmers, including small and poor farmers, may be less dramatic than predicted and that there may even have been positive effects on farmers' welfare. First, the most straightforward reason is that companies have no choice with whom to contract and with whom not. In some countries, farm output is dominated by larger farming companies, while in other countries small farms dominate. In the case that small farmers dominate and represent the majority of the potential supply base, retailers need to integrate these small farmers in the supply chain in order to have sufficient supplies. This is, for example, the case in the dairy sector in Poland and Romania, and in many other sectors in Eastern European countries (World Bank, 2005). Second, case studies from transition countries suggest that company preferences for contracting with large farms are not as obvious as one may think. While retailers may prefer to deal with large farms because of lower transaction costs, contract enforcement may be more problematic, and hence costly, with larger farms. Third, in some cases small farms may have substantial cost advantages. This is particularly the case in labour intensive, high maintenance, production activities with relatively small economies of scale. Fourth, retailers may prefer a mix of suppliers in order not to become too dependent on a few large suppliers.

BOX 4: STUDIES ON THE IMPACT OF MODERN RETAIL AND STANDARDS ON SMALL PRODUCERS

The empirical evidence on exclusion of poor, small farmers and the welfare effects is mixed (Swinnen, 2010). In the early literature, there were several studies that confirmed the prediction that small and poor farmers are systematically excluded from the supply chain, which negatively affected their incomes (Farina and Reardon, 2000). For example, several studies in Latin America and Africa argued that small farmers were being left behind in the supermarket-driven horticultural marketing and trade (Key and Runsten, 1999; Dolan and Humphrey, 2000; Weatherspoon et al., 2001; Reardon et al., 2003; Weatherspoon and Reardon, 2003; Boselie et al., 2003; Humphrey et al., 2004;).

In contrast, recent research suggests a more nuanced picture of the effect of vertical coordination on small farmers' exclusion. In fact, surveys in Eastern Europe and the CIS find no evidence that small farmers have been systematically excluded from supply chains (Dries and Swinnen, 2004; Dries et al., 2009; World Bank, 2005; Maertens and Swinnen, 2009a, Bellemare and Stifel, 2009; Wang et al., 2009; Miryata et al., 2009) or find that inclusion is confined to those that are relatively well capitalized with non-land assets such as irrigation (Hernandez et al., 2007; Neven et al., 2009) or those with access through established producer organizations (Balsevich et al., 2005). Moreover, evidence suggests that farmers who deliver to modern supply chains experience higher, more stable incomes. Minten

et al. (2009) and Maertens and Swinnen (2009a) find that poor rural households experienced measurable gains from supplying high standards horticulture commodities to global retail chains in Madagascar and Senegal. In China, Miryata et al. (2009) find significant effects on income for supplier farmers and besides an effect in income, Bellemare and Stifel (2009) also find a significant reduction in income volatility for supplier farmers in Madagascar. In Senegal, where most of the small farmers are not integrated in modern supply chains, the poor (including small farming households) benefit from increased participation through labor markets (Maertens et al. 2010).

Recent studies from Eastern Europe and elsewhere (see Box 4) conclude that the impact of modern retail investments and the associated standards on small producers is very mixed and the situation is quite heterogeneous across countries and sectors. Moreover, even in those regions where small farmers are excluded from the growth of modern food supply chains, they may benefit from increased employment that is created on larger and more productive farms.

Information obtained from our interviews in Bulgaria, Romania and Poland confirms that there is a lot of heterogeneity and that the effects are mixed. In general, retailers indicate that they prefer to purchase fresh products, such as fruits and vegetables, from large legal entities. However, when this is not possible, they supply from small farmers through a specialized wholesaler.

The representatives of the producer organizations indicated several constraints for small farmers delivering to modern retailers.

First, procurement mechanisms vary between retailers. Some modern retailers are found to usually pay three weeks or one month after the delivery of the products²⁰, which can be problematic for small farmers that do not have a financial buffer to overcome this period. Others pay more promptly, such as for example Billa Romania and Penny Market. In fact, our producer survey indicates that in 17% of the sales to a modern retailer, the modern retailer pays a part of the price in advance and the remaining part at the time of delivery, while the traditional wholesalers never paid in advance.

Second, in order to be allowed to deliver to some large retailers farmers have to pay an entrance fee, so called “access charges”, which are often too high for small farmers (in Bulgaria and Romania). For example, in Romania, the representative of the producer organization, indicated that the “access charges” can be up to 10% of the price that the farmer will receive from the modern retailer for his products. Already in 2008, the employer organizations and trade unions in Romania, indicated that it is very difficult for small farmers to deliver to modern retailers because they cannot supply sufficient quantities. They also indicate that the “access charges” that modern retailers charge are substantially higher for local producers that are only able to offer small quantities to the modern retailer compared to those delivering large quantities which makes it virtually impossible for small producers to deliver to a modern retailer. As a result, the Romanian government imposed a ban on such practices. However, our interviews with producers and their representatives, indicate that practices such as asking local producers for “access charges” are still in place and are still used by at least some retailers to exclude small producers from getting a contract with a modern retailer.

20.- This is the case for 78% of the sales to a modern retailer.

Finally, the producers and their representatives also mention that increasing quality standards (requirement of several certificates on chemical use) and the poor packaging and sorting infrastructure are important constraints for small farmers to deliver to supermarkets (see also section 5.1.3 on the product quality for differences in quality requirements between modern retailers and traditional wholesalers). However, based on (mostly anecdotic) evidence we observe with respect to this aspect variation between modern retailers. For example, in Bulgaria, a producer, who delivered in 2009 to Carrefour and Kaufland (most related to the discount format at that time), indicated that Carrefour was demanding higher quality products than Kaufland although both retailers paid the same unit price. Important to note with respect to quality requirements, is that we do not find a significant difference in the quality that supermarkets requested compared to the quality that discounters requested (both demand extra or/and first class products).

Nevertheless they indicate that it is not impossible for small farmers to contract with modern retailers, but they emphasize the importance of cooperation between small farmers such that they are able to deliver sufficient quantities to the modern retailers. There can be an important role in this cooperation for the producer organizations as they already help farmers to connect to the market by providing assistance programs, such extension services and storage facilities, and establishing contacts between farmers and modern retailers.

Finally, when discussing the impact of retail investments on small and large farmers it is important to keep in mind that for most of the products which are sold in supermarkets and discount stores that the relationship with farms is indirect, at best. It is primarily in the area of fresh fruits and vegetables that there is a potential direct relationship between the “supermarket” and the “farm”.

For all other products, such as milk, bread, processed fruits and vegetables, wine, sugar, etc the impact of the retail investments on the farms is indirect at most. In these cases, supermarkets and discounters purchase their supplies from food processing companies, such as dairy companies, sugar processors, etc. Most, if not all of these companies, are already operating according to standards imposed by retailers in the major (urban or foreign) consumer areas and following EU rules. Hence for most of these sectors the impact of retailer and discounter investments on local agricultural producers may be quite limited.

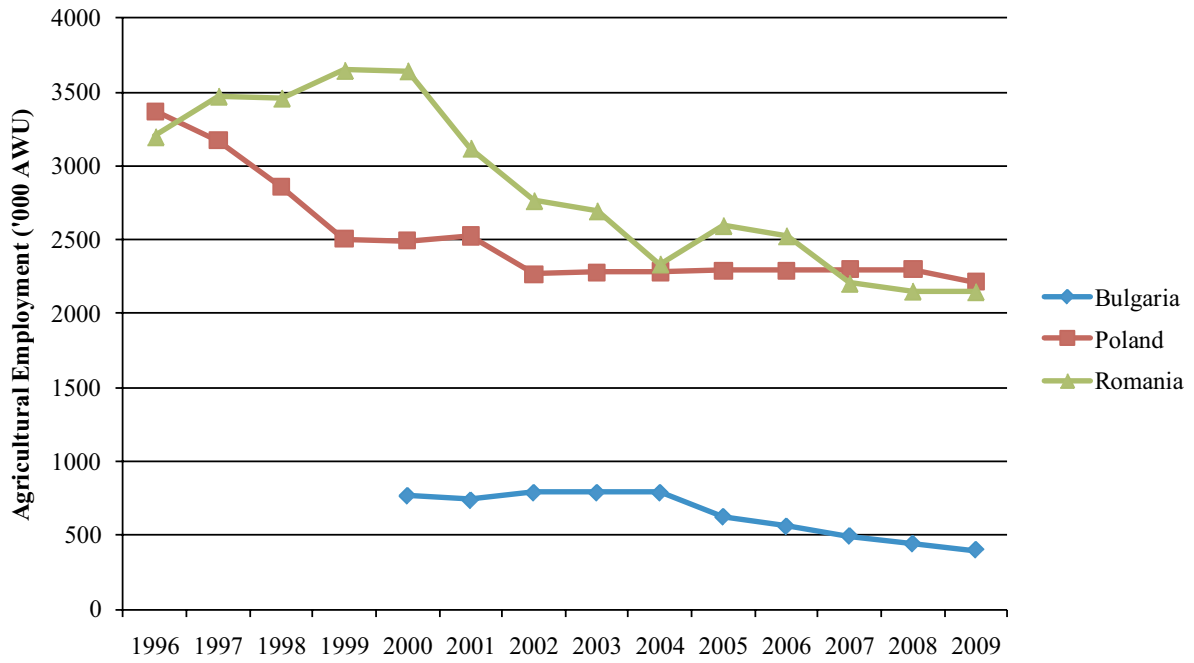
5.2.4 Impact on Agricultural Employment and Incomes

Agricultural employment has declined strongly over the past 15 years in all three countries. In Poland the decline in agricultural employment started already in the mid-1990s, in Bulgaria and Romania the decline was strongest in the past decade (Figure 12).

The cause of this strong average fall in employment is due to a combination of factors, most of which have no direct relationship with the growth of modern retailing. The overall growth of the economy has both attracted much surplus labor from agriculture — which was typically characterized by low productivity and low wages in the 1990s. In addition, the improvements of the countries’ overall budgetary situation and an associated increase in unemployment benefits and pensions over the past decade has induced many older and low productive people employed in agriculture to stop farming.

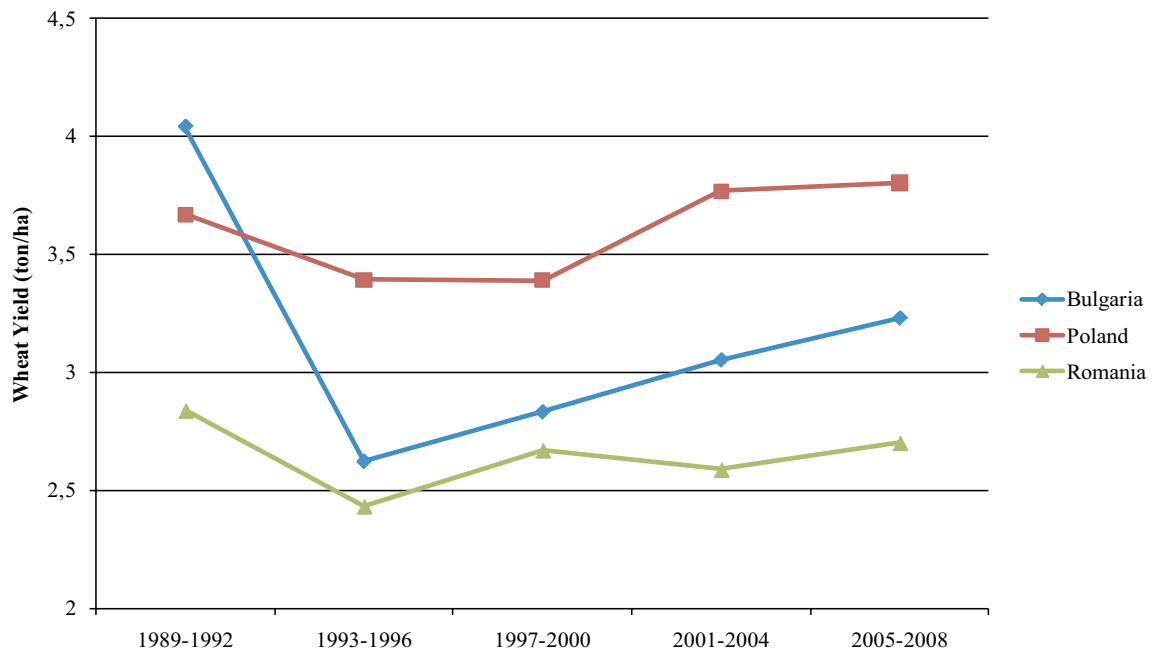
At the same time the effects of European integration have been very positive in stimulating higher productivity and higher incomes in these countries for those remaining in farming (Figure 13 and Figure 14).

Figure 12: Agricultural Employment (in AWU — Annual Working Units)

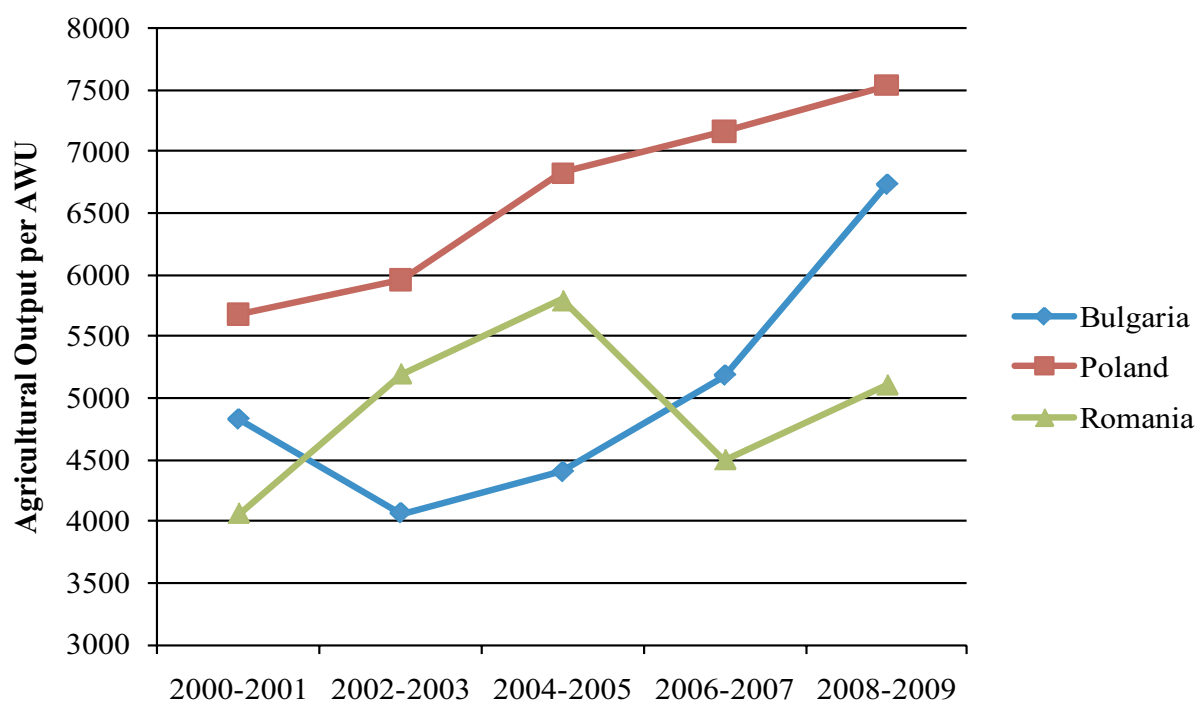


Source: Eurostat Online Database

Figure 13: Agricultural Productivity: Wheat Yields



Source: FAOstat

Figure 14: Agricultural Labour Productivity (ALP)

Source: Eurostat Online Database

The strong impact of European integration relates, first, to the EU accession for Poland in 2004 and of Romania and Bulgaria in 2007 — which (a) increased subsidies for farms in these countries, (b) improved the institutional and macro-economic framework in which they operated, and (c) imposed a series of stringent public standards on farmers and food production. Second, European integration also induced massive foreign investments and trade integration prior to accession which made technology, capital, etc. available to the food chains in these countries. At the same time, at least part of the type of product requirements which are now imposed by the retail chains were already introduced with the global integration of these countries over the past years.

In this sense the imposition of the product requirements by modern retailers is more an evolution of a process that has started over the past 15 years rather than a sudden dramatic change with the arrival of new investments. It is not possible with the available data to measure the impact of the growth of modern retail and of discounters effect in a rigorous econometric way. It is likely to have had two opposing effects. On the one hand, by enhancing the requirements for producers it is likely to have enhanced production constraints and therefore reinforced incentives for the less skilled and low productive farmers to either stop farming or (continue to) produce for subsistence purposes or for local informal markets. On the other hand, it will have reinforced incentives for others to upgrade the quality of their produces and in this way continue to or enter producing for the formal higher quality, and higher value, markets.

One argument that is often used is that modern retailer exercise buyer power and pay farmers prices that are very low and in some cases not even cover the costs. However, in the existing literature on this matter there is remarkably little compelling evidence about abuse of buying power on the upstream side. On the one hand, Lloyd et al. (2009) test buyer power and show that the hypothesis of perfect competition can be rejected in 7 of the 9 food products investigated. On the other hand,

Sexton et al. (2005) mention that it is practically impossible to measure the retailers' buying power, as prices paid by retailers to their suppliers are "typically not revealed". Apart from some weak anecdotal evidence, also Dobson et al. (2001) fail to find clear evidence of abuse of market power vis-à-vis farmers. They review a case where a farmers' organization in the UK alleged "*that supermarket chains pay very low prices for farm products, but fail to pass low prices on to consumers*". After an investigation, however, the Competition Commission (2000) argued that the low producer prices were mainly a result of excess supply, and had been passed on to consumers, or were compensated by other cost increases.

Based on our interviews, we did not find inclusive evidence on this. The representative of the producer organization in Romania accused modern retailers of exploiting their market power and paying very low prices to the producers (often even lower than production costs). However, when we compare prices received by farmers for deliveries of the same quality to modern retailers and traditional wholesalers, prices offered by modern retailers were even higher than those paid by the traditional wholesalers, but the price difference is not significant.²¹ In Bulgaria, the representative of the producer organization indicates that every week the price is renegotiated and that in some weeks prices cover production costs, while in some weeks they do not, but this is the same with prices offered by traditional wholesalers. However, we want to emphasize that we have only anecdotal evidence and that detailed data on prices at all stages of the supply chain (information which is currently not available yet) is absolutely necessary to provide insights in this matter.

BOX 5: IMPACT ON PRODUCERS

Opportunities

- In their contracts with suppliers, specialized wholesalers (and modern retailers) give incentives to meet the demanded requirements and typically these include vertical coordination mechanisms, such as **farm assistance programs**. In the case study countries, the programs that are offered to the producers are transport, assistance in sorting and packaging, advance payments and bank loan guarantees (to a minority of the suppliers in Bulgaria).
- Typically contracts with specialized wholesalers (and modern retailers) are **written contracts**, while the traditional wholesalers still work with oral contracts. A written contract includes price arrangements, frequency and quantity of delivery and food safety and quality standards that need to be respected. For producers, written contracts are important as it is a way to reduce market risk and have guaranteed sales.

Threats

- By charging a "**access charges**", which are disproportionately higher for producers delivering only small quantities, modern retailers exclude small producers from having individual contracts with modern retailers. Such practices are commonly observed in Bulgaria and Romania, although they are prohibited by law (in Romania).

21.- We did not find a significant difference between prices paid by supermarkets and discounters. Only the prices received on the local market are significantly higher which is the reason why most producers sell a part of their production on the local market.

- The representatives of producer organization in Romania accused modern retailers of exploiting their **market power** and paying low prices (lower than the production costs) to producers. However, these findings are not confirmed by the price data that we have collected in the producer survey. Hence, more information on price formation through the supply chain is needed to provide insights on this matter.
- Modern retailers are found to usually pay only one month after the delivery of the products and providing **trade credit** (even when agreed beforehand) can be problematic for small farmers that do not have a financial buffer to overcome this period. Nevertheless, there is large variation between retailers and in fact, in 17% of the contracts between modern retailers and farmers we find that the retailer even pays a part of the payment in advance.
- Quality standards of modern retailers should be based on “**true**” **quality** (freshness and safety and health standards) and not “esthetic” quality (standards related to size, shape and color). Currently, 24% of the producers report that it occurred to them that their delivery was rejected based on such “esthetic” quality concerns despite the fact that they fulfilled all quality requirements stated in the contract (see also section 5.1).

Recommendations to maximize positive and mitigate adverse social impacts on producers

- From our interviews it appeared that asymmetry in bargaining power between modern retailers and their producers may lead to unfair trading practices, such as the existence of a “access charge” in Romania and Bulgaria. In order to reduce these activities, there should be a **commission that is occupied with analyzing potential unfair trading practices and increasing producers’ awareness on their legal rights**. This commission should analyze the existence and use of classic cartels, joint purchasing agreements (buying alliances) and private labels. For such practices a careful balancing of efficiency enhancing and potentially anti-competitive effects is needed and a case-by-case analysis based on the specificities of local market conditions is necessary in order to establish the existence of a possible competitive harm. Competition Commissions are introduced in several developing countries (e.g. Brazil, Indonesia and Mexico).
- In order to resolve the tension between modern retailers and their suppliers, they could engage in a “**code of best practice**”. The terms of such a code could include as main elements: (1) compliance with contracts by retailers and suppliers; (2) equal treatment of suppliers; (3) prompt payments; (4) banning unfair trading practices. There are already some countries that introduced such a code. In 2002, a private sector code was encouraged by the competition commission in the UK (and later it was made mandatory). Also in Argentina there exists a “code of best practice”.
- Modern retailers demand a constant delivery of products and because sometimes small producers cannot provide the demanded quantity, modern retailers may prefer to work with one large producer instead of several small ones. In order to overcome this problem farmers must form groups (or **producer organizations**) to help their members to connect to the market by offering them assistance programs, such as extension services and storage facilities, and

by establishing contacts between farmers and modern retailers. However, the willingness to cooperate is still weak in most Eastern European countries. First, it will be important that the government creates a clear legal framework in which such activities are possible. For example, in Bulgaria, the person in charge of the producer organization indicated that the producer organization as a legal entity is not allowed to bulk the production of different suppliers, but only to establish contacts between individual producers and modern retailers. Second, there should be a commission that analyzes the existence of joint commercialization agreements and analyzes on a case-by-case analysis whether there exists a potential competitive harm.

- An essential problem for (small) farmers is that they do not have access to capital to make investments, which are needed to fulfill the quality requirements that modern retailers impose on their suppliers. In some cases, modern retailers are intermediating between commercial banks and farmers (e.g. offering bank loan guarantees in Bulgaria). However, there is a scope for innovative private-public actions which increase **farmers' access to capital**. For example, in Mexico there is the “financier rural” program (Reardon and Berdegúe, 2006). This program allows the supplier to get immediate cash instead of having a “waiting period” for payment and the bank then invoices the payment from the modern retailers.
- In addition, it will be crucial to **increase the price transparency** at each stage of the supply chain. This will allow us a better comparison of prices paid by different stakeholders and provide more information on the price margin that each stakeholder takes. Second, also for farmers such a tool is informative as currently they have only limited information on prices.

5.3 Impact on Traditional Retailers

Besides affecting consumers and producers, the increase in modern retail is also affecting traditional retailers. On the one hand, one might expect that increased competition from modern retailers decreases revenues of traditional shopkeepers and may even force traditional shopkeepers out of business. On the other hand, modern retailers create new employment opportunities and there might be positive spillover effects (e.g. increased variety and increased labeling to mimic the supply offered by the modern retailer).

There are a number of studies that indicate a negative correlation between the establishment of a modern retailer and the number of small retail shops in the developed world. However, much of this literature is uninformative as it does not say anything on the causal impact of the emergence of modern retailers on retail employment and earnings (and therefore it is not discussed here).

There are a few academic studies that deal with the causality and most of these studies focused on impact of the emergence of large (Wal-Mart) retail stores on regional retail employment. Contrary to popular belief, Hicks and Wilburn (2001) find that the opening of Wal-Mart stores in West-Virginia has a positive impact on retail employment and the number of retail companies in the period 1989–1996. Using nation-wide data and controlling for the endogeneity of the timing of Wal-Mart's entry in a particular market, Basker (2005) estimates that in the year of Wal-Mart

entry, retail employment in a county increases by 100 jobs. Half of this gain disappears over the next five years as other retail establishments exit and contract, leaving a long-run statistically significant net gain of 50 jobs. In a more recent study, Sobel and Dean (2008) not only focus on employment in small businesses in the retail sector, but also on overall self-employment and their results suggest that the rapid spread of Wal-Mart stores has had no statistically significant long-run impact on the overall size and profitability of the small business sector in the United States. They use Schumpeters' theory on "creative destruction" to explain that there are inventions, such as for example the emergence of a Wal-Mart store, that result in business failures in certain sectors, but despite these failures yield net gains because of the positive impacts on economic activity in other sectors. For example, a small traditional shop is converted into an art gallery or the office of a travel agent.

Most studies in developing countries focus on the correlation between the emergence of modern retailers and the number of traditional retailers and mainly find a negative correlation (Gutman, 1997; Faigenbaum et al., 2002; Rodriguez et al. 2002). In general, they find that small shops are hit the hardest, while specialized shops and street fairs tend to hold out much longer. When differentiated by products sold, those selling dairy products or processed food tend to go out of business the earliest, with fresh produce shops and wet markets following afterwards (Faigenbaum et al., 2002; Rodriguez et al. 2002). Box 6 presents conclusions from these studies.

BOX 6: STUDIES ON THE IMPACT ON THE NUMBER OF TRADITIONAL SHOPS

In Argentina, Gutman (1997) finds that the number of shops declined from 209.000 in 1984 to 145.000 in 1993. Also in Argentina, Rodriguez et al. (2002) note that while the number general small shops rapidly decreased, those in a specialized niche, in particular bakeries, fresh fish and meat, and fruit and vegetable shops, disappeared less quickly. After several years of competition, the traditional retailers that are usually still in business are those selling niche products.

In Chile between 1991 and 1995 15.777 small shops disappeared, of which 21–22% of general shops, 25% in the number of shops with dairy and meat products and a decline of only 17% in the number of shops that sell fruit and vegetables (Faigenbaum et al. 2002).

An exception to the evolutions is Brazil, where it appears that traditional traders are able to coexist with modern retailers by depending on traditional food preparation habits and ensuring fresher products (Zinkhan et al., 1999; Farina et al., 2005).

However, like already indicated for studies in developed countries, these studies do not allow saying anything on the causality. The only study that conducts an impact evaluation of the effect of supermarkets on traditional markets in a transition or developing country is by Suryadarma et al. (2010) and is based on survey evidence from Indonesia. They selected traditional markets close to the modern retailer as the treatment group and traditional markets far from the modern retailer as the control group for a difference-in-difference analysis. They find that on average, traders in both treatment and control markets have experienced a decline in their business over the past 3 years and hence that there is no statistically significant impact of competition from modern retailers on the profit and revenue of traditional traders.

Qualitative evidence confirms these results as traders relate the decline profits to a decline of purchasing power of the local population and the competition with street vendors (competition with supermarkets was only the third most important reason). The traders, market managers, and traders' representatives all state that the main steps which should be undertaken to ensure their survival are the improvement of traditional market infrastructure, organization of the street vendors, and the implementation of better market management practices. If these conditions are met the traders explicitly state their confidence that supermarkets would not drive them out of business.

In order to deal with the possible endogeneity bias due the timing and the location of the establishment of a modern retailer in a particular market, a good approach to analyze the effect of the emergence of a modern retailer on employment of traditional retailers would be using a difference-in-difference-in-difference estimator that compares changes in the number of traditional shops and their earnings over time in regions in which there emerged a modern retailer and regions where there did not emerge a modern retailer, compared to changes for manufacturing and services employment and earnings. However, such an econometrical approach requires a detailed panel survey in the three countries for which, within the current study, the time nor the money was available. Nevertheless, we want to emphasize the need for such research, which is especially interesting, given the fact that modern retailers are only recently emerging in the rural areas of the countries under consideration.

Given the constraints of the study, we opted to use a similar approach as Suryadarma et al. (2010), who interviewed traditional shopkeepers close to the modern retailer ("treatment group") and traditional shopkeepers far from the modern retailer ("control group"). Hence, by applying this strategy, we assume that traditional shops close to the modern retailer are in direct competition with the modern retailer, while traditional shops far away (20-30 km) from the modern retailer are assumed to experience no direct competition from the modern retailer. Given the poor rural infrastructure (poor roads and public transport facilities), this assumption seems reasonable.

In Bulgaria, Romania and Poland, we asked traditional shopkeepers far and close to the supermarket on the evolution of their gross receipts and the reason behind this evolution²². The results are mixed: out of the 6 interviewed traditional shopkeepers close to the modern retailer, 3 mention that there was a decline in the gross receipts, 2 indicate that gross receipts did not change over time and 1 shopkeeper mentions a slight increase in receipts. Out of the five shopkeepers far from the supermarket that were willing to talk to us on their gross receipts: 3 mention a decline in receipts and 2 indicate that receipts slightly increased²³.

22.- Besides traditional small shops also open markets play a key role in the food supply chain. Based on our consumer surveys we find that a large proportion of the rural population buys fruits and vegetables on the open market and hence open market are still important for rural consumers. However, also for producers, open markets are important and most of the producers that we interviewed sell a part of their production (5% to 10%) on the open market because in general prices on the local market are higher than those offered by modern retailers or traditional wholesalers. However, 70% of the farmers expect direct sales to decrease over time, while 17% expect direct sales to continue and 13% expects an increase in direct sales. These expectations are confirmed by the representatives of consumer and producer organizations. In fact, one of representatives formulates it as follows: "the farmers selling on open markets will slowly disappear, it are farmers of the past generation". However, it is uncertain whether it is the competition with the modern retailer that drives them out of the market. In fact, several farmers that diminished direct sales, indicate that the main reason is that they can only sell small quantities on the local market and that therefore the unit cost of transporting their products to the open market is too high. None of them indicated that it was due to increased competition with the modern retailer.

23.- Some shopkeepers indicated the monetary value of the increase/decrease in their gross receipts, however others refused to tell this and only indicated whether their gross receipts went up or down. We opted to only present this information as this seemed to us the most reliable information.

The fact that both traditional shopkeepers that are situated far away and close to a modern retailer experienced a decline in gross receipts could suggest that there might be another factor than the emergence of a modern retailer (for example the recent economic and financial crisis) affecting gross receipts of traditional shopkeepers both far and close to the modern retailer. However, it is also possible that our assumption that traditional shopkeepers far from the modern retailer are not experiencing direct competition from the modern retailer is false. This seems to be case as from interviews with consumers of traditional shops far from the modern retailer we learnt that those consumers visit the modern retailer on average two times per month (see section 5.1.7.), such that at least for some products also traditional shopkeepers far from the modern retailer experience direct competition from the modern retailer. In addition, we find that the most cited reasons for a decline in gross receipts of traditional shopkeepers, both for those close and far from the modern retailer, are increased competition with modern retailers and decreasing purchasing power due to the recent financial crisis. These findings seem to indicate that the presence of a modern retailer has a negative impact on gross receipts of both traditional shopkeepers close and far from the modern retailer, although we cannot econometrical disentangle the impact of the emergence of a modern retailer and the impact of the recent crisis on farm receipts.

However, when we analyze other indicators, we also find evidence of positive effects of changes in the retail sector on traditional shopkeepers. For example, in section 4.1.2 we show that since the emergence of modern retailers the variety offered in traditional shops has increased, indicating that there may be positive spillover effects of modern retailers on traditional shops.

BOX 7: IMPACT ON TRADITIONAL RETAILERS

Opportunities

- There is evidence of **positive spillover effects** of the emergence of modern retailers on the variety offered by traditional retailers.

Threats

- The emergence of modern retailers have a **negative effect on the gross receipts** (and hence business survival) of traditional shopkeepers (both those located far and close to the modern retailer). This is also reflected in the overall decline in self-employment in the retail sector.

Recommendations to maximize positive and mitigate adverse social impacts on traditional retailers

- Increased competition from the modern retailers may negatively affect gross receipts (and hence business survival) of traditional shops. In order to mitigate these effects traditional shopkeepers can focus on providing **certain services that modern retailers do not provide**, such as home delivery, credit provision, ... (see section 2.2.2). Another option is to specialize in certain **high quality niche products or offering prepared dishes** that are not (or less) available in the modern retailer. Modern retailers can mitigate the impact they have on traditional

shops by providing advice to traditional shops on offering new services. For example, Metro Group is planning to offer such advisory services to traditional shops when they are setting up cash and carry shops in Kazakhstan (Grytsenko, 2011).

- Nevertheless, there will be shopkeepers who are not able to face the competition with the modern retailer. However, this should not necessary be a negative evolution as the emergence of a modern retailer, like Sobel and Dean (2008) indicate, can unleash a process of “creative destruction”. This theory, which was first described by Schumpeter, indicates that there are inventions (e.g. the emergence of a modern retailer) that result in business failures in certain sectors (e.g. traditional shopkeepers), but despite these failures lead to net gains because of the positive impacts on economic activity in other sectors. In order to facilitate this transition, it will be important to **upgrade human capital in rural regions as this can be one of the driving factors behind the emergence of new business activities**. The government could provide support measures for job reconversion, but also modern retailers can provide training programs to train local people for a job in the retailer.

5.4 Impact on Employment

The emergence of modern retailers affects employment in several ways: first, one needs to distinguish between the effect on employment in the retail sector and in the agricultural sector.²⁴ Second, within the retail sector the emergence of modern retail channels changed the balance between self (traditional shops) and wage employment (modern retailers). Finally, it also has an impact on the working conditions.

5.4.1 Impact on the Type of Retail Employment

In terms of total retail employment we find that there has been a substitution of self-employed to wage employment. In general, traditional shops only employ 1 to 3 persons, which usually include the owner of the shop, his wife/ her husband and other family members (children, parents,...). In the beginning of the 2000s for Poland and the mid-2000s for Bulgaria and Romania, there were on average 3,5 full time workers employed in a traditional shop close to the supermarket and in 2010 still on average 2,5 workers were employed by these shops (Table 29). Similar findings hold for the traditional shops far from the supermarket, where the number of employees decreased from 1,75 to 1,5 in 2010. On other the hand, in the modern retail outlets the number of employees increased from on average 41 to approximately 59 full time employees in 2010. These findings indicate that modern retailers can play an important role in job creation in the rural regions of Bulgaria, Romania and Poland.

24.- As already discussed in section 5.2 agricultural employment has declined strongly over the past 15 years in all three countries. However, the main causes for this strong decline have no direct relationship with the growth of modern retailing. The overall growth of the economy has both attracted much surplus labor from agriculture and increased social payments enabled many older and low productive people employed in agriculture to stop farming.

Table 29: Employment in modern retailers and traditional shops (number employees)

	Beginning of 2000s (Poland)/ Mid 2000s (Bulgaria & Romania)	2010
Modern retailer	41	59
Traditional shops close to the modern retailer	3,5	2,5
Traditional shops far from the modern retailer	1,75	1,5

Source: Own calculations based on stakeholders interviews

Moreover general employment statistics indicate that the emergence of modern retailers and the shift from self-employed labour to wage employment, has had a positive impact on total retail and wholesale employment.

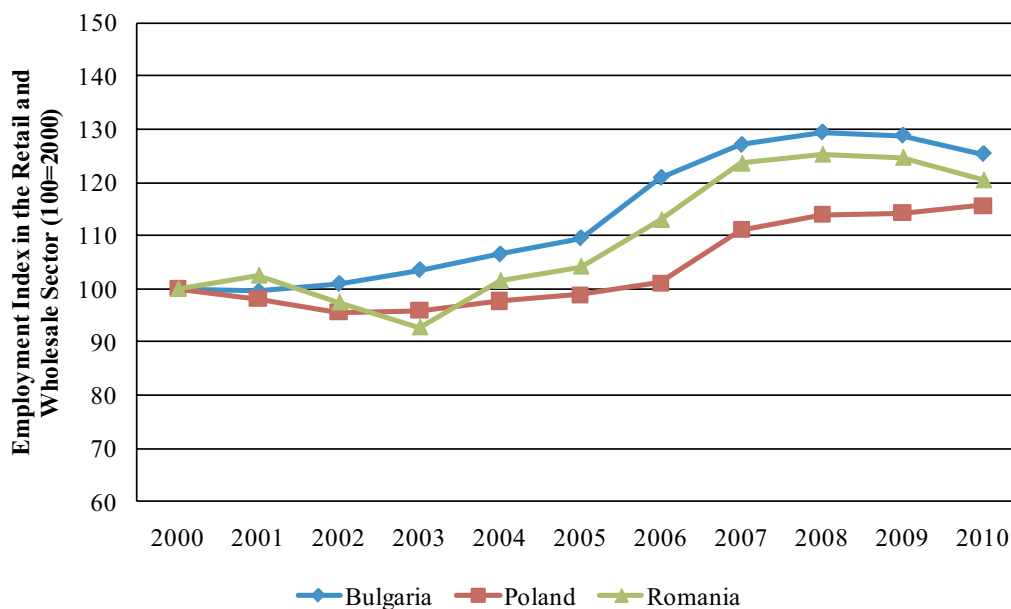
In Figure 15, we present the evolution of employment in the retail and wholesale sector in Bulgaria, Romania and Poland (employees and self-employed individuals). In Bulgaria and Romania, employment in the retail sector increased by respectively 25% and 20% compared to 2000. In Poland, employment increase was more moderated and employment in the retail sector increased by 15% compared to 2000. In all three countries, there is a stabilization or even a slight decline in employment in the past three years, an evolution which we can probably relate to the financial crisis.

However, there are substantial differences between self-employment and wage employment. While self-employment in all three countries decreased (or remained stable) compared to 2000, wage employment increased in all three countries (Figure 16 on self-employment and Figure 17 on wage employment). These changes are also reflected in the share of self-employment. In 2000 23% of individuals employed in the retail and wholesale sector in Bulgaria were self-employed, while in 2010 only 18% was self-employed. Similar findings hold for Poland and Romania where self-employment shifted from respectively 28% and 17% to 21% and 11% (Figure 18) (Eurostat Online Database).

5.4.2 Impact on the Quality of Retail Employment

When considering the quality of work, we find that both modern retailers and traditional shops have long opening hours (usually from 7-8 am until 9-10 pm) and are open on Saturdays and Sundays. These long opening hours are also reflected in long working hours, especially for self-employed traditional shopkeepers. On average employees in the retail sector work 43 hours in Bulgaria and 42 hours in Poland and Romania, while self-employed shopkeepers work 47 hours in Bulgaria, 48 hours in Poland and 44 hours in Romania (Eurostat Online Database).

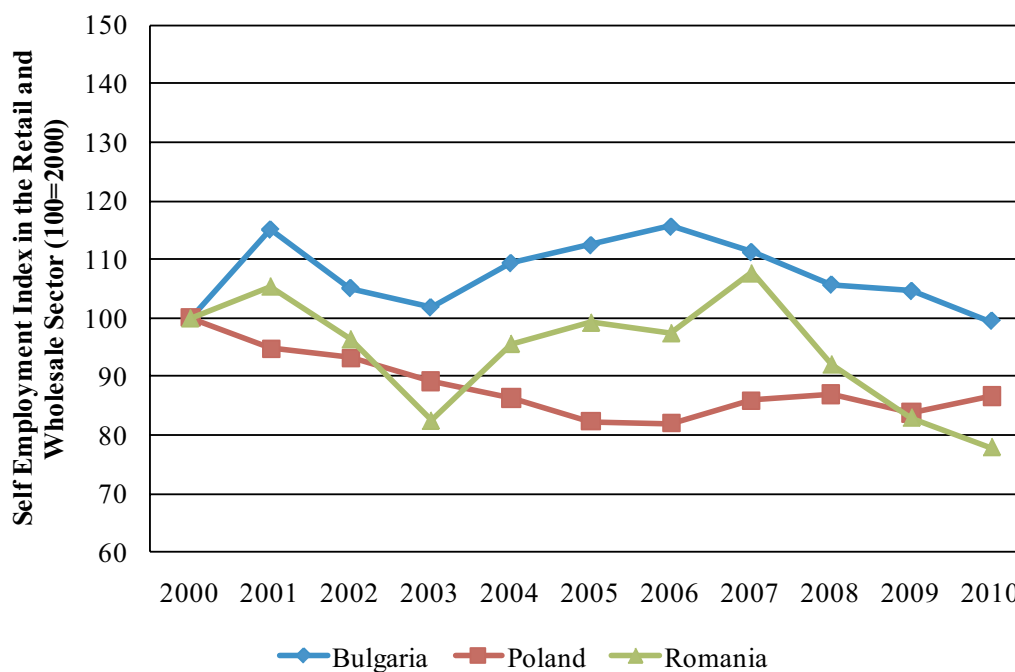
The maximum number of hours that employees are allowed to work each week is defined by the country's employment legislation. However, in practice, employees often work longer than officially allowed. For example, in Poland, in a 2008 case study on the working conditions in the retail sector employees of different retail chains (including discounters) reported violations of working time as the most important concern. These violations include imposing long sequences of working days (e.g. seven to nine days of continuous work although an employee is entitled to at least

Figure 15: Evolution of employment in the retail and wholesale sector in Bulgaria, Romania and Poland*

* The level of employment in 2010 only relates to the first quarter of 2010.

Data also include repair of motor vehicles, motorcycles and personal and household goods.

Source: Eurostat Online Database

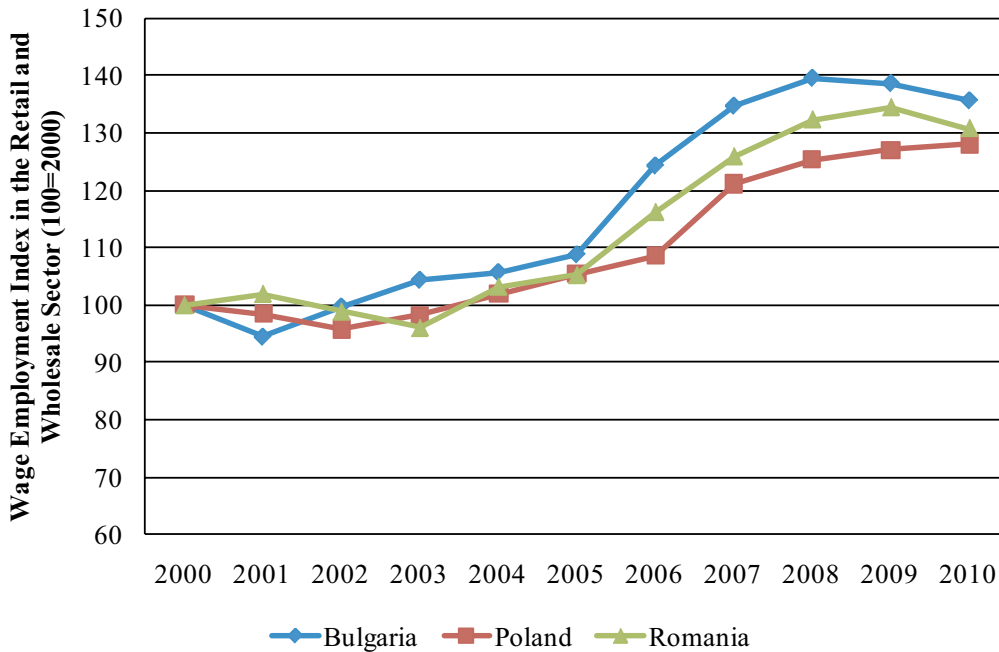
Figure 16: Evolution of self-employment in the retail and wholesale sector in Bulgaria, Romania and Poland*

* The level of employment in 2010 only relates to the first quarter of 2010.

Data also include repair of motor vehicles, motorcycles and personal and household goods.

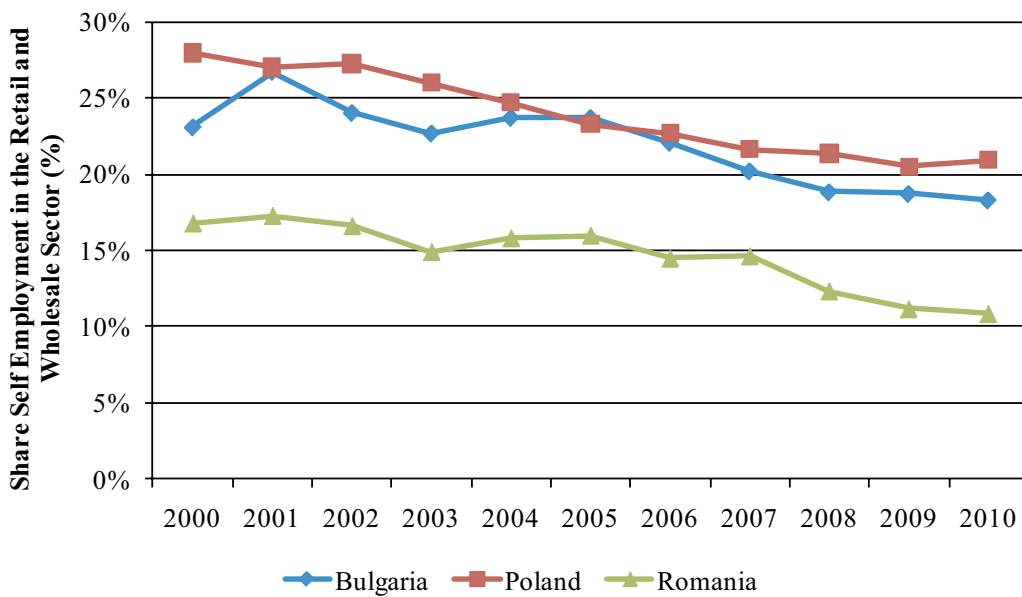
Source: Eurostat Online Database

Figure 17: Evolution of wage employment in the retail and wholesale sector in Bulgaria, Romania and Poland*



* The level of employment in 2010 only relates to the first quarter of 2010.
 Data also include repair of motor vehicles, motorcycles and personal and household goods.
 Source: Eurostat Online Database

Figure 18: Share of self-employment in the retail and wholesale sector in Bulgaria, Romania and Poland*



* The level of employment in 2010 only relates to the first quarter of 2010.
 Data also include repair of motor vehicles, motorcycles and personal and household goods.
 Source: Eurostat Online Database

35 consecutive hours of rest in a week), working longer shifts than official shifts of eight hours (weekday) or twelve hours (weekend/holiday) and difficulties in taking breaks during the day. These findings are confirmed by the State Labour Inspection who revealed the existence of several violations related to working time in different super- and hypermarkets. In 2007, they found in 31% of the inspected stores errors in time-taking records (faulty calculations of overtime and night shifts) and 24% of the inspected stores ignored the norm of a 5-day work week (Oponowicz and Chmielecka, 2008).

Nevertheless these violations of working time by modern retailers, it is difficult to compare the working conditions to self-employed traditional shopkeepers as often they also report long working hours (sometimes up to more than 15 hours per day, but of course with more freedom to take breaks compared to employees). Moreover, nine out of the twelve shopkeepers we interviewed reported that they did not have a closure day and the other three only closed their shop one day (on Sunday).

There are also important differences in the work done by employees in modern retailers and self-employed traditional shopkeepers. Traditional shopkeepers usually combine a series of tasks, from filling the shelves to bookkeeping, for which they need a large variety of skills, while employees in the modern retailers have more specific tasks (e.g. cashiers, filling the shelves, keeping the inventories, ...)²⁵.

Currently, most retailers in Poland, Bulgaria and Romania report that they find it increasingly difficult to find the suitably qualified workers for positions at all levels — from low-skilled to semi-skilled warehouse workers to managers. Most of them try to improve the human capital of their work force by offering attractive remuneration and organizing training. However, this is the situation in the capital and the large cities, whereas in small towns and rural areas, the minimum wage²⁶ is the standard, especially as far as low skilled sales agents concerned. Moreover, in rural Romania, Euromonitor (2010) signals practices where modern retailers employ workers who are not legally employed and receive a remuneration below the minimum wage (Euromonitor, 2010). In Poland, a study by Oponowicz and Chmielecka (2008) mentions practices where modern retailers pay the minimum wages and the rest of the wage is paid “under the counter”. This practice has negative consequences for the employees who not only lose money when they go on sick leave (they receive 80% of the lowest remuneration) but also, in the long run, when they retire (as their pension will be based on their official wage). However, we are not able to compare earnings in a modern retailer with earnings of traditional shopkeepers as these were reluctant to tell us about their earnings. Moreover, it would be incorrect to compare earnings of a self-employed shopkeeper and earnings of, for example, a cashier, as they may have different responsibilities and skills.

It is important to note that the majority of the workforce in modern retailers are women, which implies that many of the employment effects disproportionately affect either women or men,

25.- Besides differences in the type of tasks that traditional (self-employed) shopkeepers and cashiers need to fulfil there are also differences how individuals can perceive these tasks. One can argue that being a cashier is stressful and repetitive. On the other hand, being self-employed can also be stressful as one carries all responsibilities on success or failure of the business. In this study, we provide no evidence on stress because of two reasons. First, stress is a highly personal matter. Second, in order to be able to make some intrapersonal comparisons we should have interviewed individuals that switched between being a self-employed shopkeeper to being an employee and the other way around. However, given the time and budget constraints and the refusal of most modern retailers to interview their staff it was impossible to identify a sufficiently large sample of such individuals.

26.- There is no officially established minimum wage in retailing in Poland, but according Euromonitor, the average gross wage in retailing reached PLN 2.750 (€ 675) per month in 2007. In 2009, the minimum wage in Bulgaria is BGN 240 (€120) per month and in Romania it is RON 600 (€ 141) per month.

depending on whether they are self-employed or being hired as an employee in the modern retail sector. Therefore there is a strong overlap between this section and section 5.5, which deals with gender effects.

BOX 8: IMPACT ON EMPLOYMENT

Opportunities

- Since the emergence of modern retailers there has been a shift from self-employment to wage employment in the retail sector and there is a net gain in employment, indicating that modern retailers can play an important role **job creation** in rural regions.
- Usually, the employees of modern retailers have **shorter working hours** than traditional, self-employed shopkeepers, although there are indications that modern retailers violate the regulations concerning working time (see threats).

Threats

- In Poland and Romania, there is some evidence of **violations of the employment legislation** in modern retailers. In Poland, these are mainly violations related to working time, while in Romania there are incidences where “black” workers were hired that were paid a wage lower than the minimum wage.

Recommendations to maximize positive and mitigate adverse social impacts on employment

- Modern retailers should comply to the local employment legislation (working time, minimum wage, ...). Currently, there are studies that signal violations of this legislation in Romania and Poland. The government plays an important role in detecting these practices. However, also the modern retailer should take his responsibility. It is for example possible that the general management is not aware of malpractices in individual stores of the chain (e.g. in case franchising). In that case the modern retailer can set up an **internal audit to detect malpractices in the individual stores and take appropriate measures to avoid future violations of the employment legislation**.
- Besides setting up an internal audit system, modern retailers should encourage (or at least not obstruct) actions that **increase awareness** among the employees with respect to **labour legislation**.
- In order to help employees, which are mainly women, **combine work and family life**, modern retailers could offer their staff the possibility to work **part-time**, but in addition they could introduce **shift patterns**, which are communicated a long time upfront in order to allow employees to arrange possible family obligations. In addition, modern retailers could **offer child care facilities** (at cost price). The latter will only be profitable in larger plants.

5.5 Gender Effects

There are only few studies who have analyzed the gender effects of investments in the modern food sector and the associated increase in food standards and restructuring of the food chains. Most of these studies have not focused on the retail chain per se, and most are case studies from Africa and Latin America. In those cases, they have mostly focused on the fact that contracted family farms are usually managed by men while employment on larger farms and employment in the processing of high quality products at the food processing company is largely for women. Hence some of the restructuring of the chains may have important gender effects in this way, in e.g. rural Africa (see e.g. Maertens and Swinnen 2009b).

This type of gender effects seem to be less relevant for investments of discounters in Eastern Europe. Overall, gender effects are less important in Eastern Europe compared to developing countries (Lopez-Claros and Zahidi, 2005). Nevertheless, we feel that that is important to discuss the gender effects related to the development of modern retail formats which are more subtle than in the developing world.

Based on our small consumer survey we identified some gender effects in terms of shopping behavior. It appeared that men are more likely to shop in modern retailers, but this effect was not statistically significant. In addition, we analyzed whether there were differences in the per capita monthly food expenditures of men and women shopping in the modern retailer, but also in this case we did not find statistically significant results. Moreover, we want to emphasize that in order to study gender effects on consumption in a more accurate way, one needs to have information from (panel) household surveys that collect more detailed information on household consumption and the intrahousehold decision-making process. However, within the current study, time and money constraints did not allow us to collect such data.

In addition, we find that buying several products in one retail outlet substantially reduced the time that female consumers of modern retailers spend on shopping, leaving more time available for other activities. In 2010, they spend on average 3,0 hours per week on buying groceries, while before this was 2,7 hours per week. Male consumers of modern retailers spend in 2010 on average 2,1 hours on buying groceries, while before this was 2,3 hours. Moreover, we find that female consumers more often indicate convenience as the most important reason to change their shopping behavior and buy at least one of the product categories in the modern retailer. Based on our consumer survey, we find that 17% of the female consumers indicated convenience as the most important reason to buy at least one of the eight product categories in the modern retailer, while only 12% of the male consumers indicated convenience as a reason to change their behaviour. However, none of these differences between male and female consumers is statistically significantly.

The main gender effect from discounter and modern retail investments appears to be the shift from employment from small shops to larger retail outlets, and the associated working conditions. Interestingly, we find that mainly women benefit from this shift from self-employment to wage employment as mainly women are employed as employees in the retail sector. Based on our company interviews, we find that 65% to 70% of the staff in a modern retail store is female. Table 30 shows that there is a large difference between the share of women in self-employment compared to wage employment in the retail sector.

For example in Romania, in the first quarter of 2010, approximately 56% of the employees in the retail sector were women, while only 28% of the self-employed shopkeepers were women. Similar results hold for Bulgaria and Poland, where respectively 57% and 58% of the employees in the retail sector were women and only 37% and 40% of the self-employed shopkeepers were women.

Table 30: Percentage of females employed in the retail sector in self-employment and as employee in the first quarter of 2010 (%)

	Self Employed	Employees
Bulgaria	37%	57%
Poland	40%	58%
Romania	28%	56%

Source: Eurostat Online Database

This implies that many of the effects which we described in the previous section may disproportionately affect women as they are more likely to be employed as an employee by a modern retailer. The net welfare effect might be positive or negative depending on what the women were doing before. In general, most of the women employed as lower staff (e.g. cashiers) are young and low skilled and before sending their application to the modern retail store they were unemployed or still at school. For these women employment in a modern retailer might have a positive welfare effect in spite of the long working hours and low wages.

For those previously employed as self-employed shopkeepers, the welfare effects are less obvious and wage employment may imply a step down, unless there are substantial benefits in working conditions or higher wages associated with wage employment. However, like already indicated in section 5.3, it is difficult to compare working conditions and wages in self-employment and wage employment. In our interviews, we asked modern retailers which measures they take to help their employees to combine their work and family life, for example, providing their employees the possibility to work part time or offering child care facilities. Our interviews show that some of the modern retailers offer the possibility to work part time although they all indicate that they prefer full time employees.

Another concern related to gender inequality in modern retailer is that women get no (or less) opportunities than men to progress into store supervision or management. As the management of the modern retailers that we interviewed was reluctant to answer this question and refused us to interview their staff, we have only some ad hoc evidence on this matter. This indicates that the problem is rather limited. First, several managers of modern retail stores that we interviewed were women, which is a first indication that gender discrimination is rather limited. Second, in a Polish case study on the working conditions of female workers in supermarkets/ hypermarkets, Oponowicz and Chmielecka (2008) also find no evidence of gender discrimination for jobs in store supervision or management. Nevertheless, the women in the study mention that it is not uncommon that during the recruitment process questions about marital status, number and age of children and planned pregnancy are asked, but the authors have no information to what extent employers use this information when selecting a candidate.

The shift from self-employment to wage employment also implies that men are disproportionately negatively affected as they are more involved in self-employment and less in wage employment. However, like already indicated in section 5.4, a decline in the number of traditional shopkeepers does not necessarily have a negative impact on welfare as depends on whether and in which type of employment, traditional shopkeepers that stopped their activities, end up. However, within the scope of this study (time and money constraints), it was impossible to trace back shopkeepers that stopped their activities and survey them on the reason why they stopped their activities and the work that they are currently doing. Moreover, in order to assess how their welfare changed due to the emergence of modern retailers, we need detailed data from the period that they were still active as a traditional shopkeeper (before the emergence of the modern retailer).

BOX 9: GENDER EFFECTS

Opportunities

- Women (but also men) that do buy their groceries in modern retailers indicate **convenience** as an important reason to do so. This is also reflected in a reduction of the number of hours that they spend on doing groceries.
- There are **disproportionally more women employed as an employee** in a modern retailer, indicating that mainly women benefit from the shift from self-employment to wage employment. However, the welfare effect depends on what these women were doing before being employed in the modern retailer. In general, most of the women that are employed as lower staff (e.g. cashiers) are young and low skilled and they were unemployed or still at school when sending their application to the modern retailer. For these women employment in a modern retailer might have a positive welfare effect in spite of the long working hours and low wages.

Threats

- The modern retailers that we interviewed were reluctant to answer any questions related to **gender discrimination**. Nevertheless, a case study in Poland indicated that it is not uncommon that during the recruitment process questions about marital status, number and age of children and planned pregnancy are asked, but the authors have no information to what extent employers use this information when selecting a candidate.

Recommendations to maximize positive and mitigate adverse gender impacts

- Although we have no evidence on gender discrimination by modern retailers, it is important that there is an employee (for example a member of the **labour union**) which women can approach with complaints and questions about their legal rights.

5.6 Impact on Social Cohesion

Some studies have pointed at the negative impact of modern retail investment and the associated decline in the number of small local shops on the social infrastructure in the area (Goetz and Rupasingha (2006). They argue that small, local shops and their owners play an important role in social relationships, norms and trust in a community. Moreover, those small shopkeepers are found to be part of the local leadership class. They also understand the interpersonal dynamics of the community members and their various networks. In addition to the impact on the survival of the traditional shops, modern retailers affect the supporting industry within communities that serves these shops. This industry includes firms in the legal, accounting, transportation, logistics, financial, publishing and advertising sectors that work closely with the retailers. The arrival of a modern retailer, who pursues all these activities at a centralized level, makes that the employees in these sectors leave the community to pursue opportunities elsewhere. In the process, the social capital they embody is destroyed, and their entrepreneurial skills and other forms of location-specific human capital are forever lost to the community.

However, other studies (Carden et al., 2009) have pointed out that there is also a positive effect of modern retail investments on social capital as usually a modern retailer is located in new commercial center, where there are social interactions on a larger scale possible. Moreover, in general prices in modern retailers are lower and these stores offer a larger variety of products, hereby effectively reducing the time and money that has to be devoted to basic consumption. This may have a positive impact on social capital in a community. For example, assume you like fishing with friends, an activity which increases social capital. On the other hand, you also have to buy groceries and cook, activities which have no impact on social capital. The emergence of a modern retailer may increase social capital in two ways. First, in case that the modern retailer sells fishing material and the price of fishing material decreases, there is a direct impact on social capital as you are now able to buy more fishing equipment. Second, even when the modern retailer does not sell fishing equipment, but only food, you will spend less money on basic food consumption (because of lower food prices in the modern retailer), such that you have more money available to spend on fishing equipment. Third, shopping in the modern retailer reduces the time that you spend on buying food, which means that it increases the time that you can potentially spend on fishing.

In summary, in the literature both empirically and theoretically the impact of modern retail investments on social capital is still unclear. Goetz and Rupasingha (2006) find a negative impact of modern retailers on social capital as they find that social capital stocks were lower both in communities in which new Wal-Mart stores were built and in communities that already had a Wal-Mart store at the beginning of the 1990s decade. However, using the same econometrical model with only slightly different specifications and data, Carden et al. (2009) indicate that they were unable to find a systematic positive relationship between the presence of a Wal-Mart and social capital.

We have no evidence on the net effect of investments on social capital in the countries under consideration in general and no clear evidence either way came out from our interviews.

BOX 10: IMPACT ON SOCIAL COHESION

Opportunities

- Lower prices in modern retailers and more convenient shopping (only one shop) could lead to an increase in the money and time available for social capital producing products/activities.

Threats

- There could be a decline in social cohesion due to the disappearance of traditional shops as small, local shops and their owners play an important role in social relationships, norms and trust that were build up in a community

Recommendations to maximize positive and mitigate adverse impact on social cohesion

- Modern retail investments and the associated decline in small local shops may have a negative impact on social interactions within a region. However, modern retailers are usually located in a new commercial center which in most cases accommodates **facilities where individuals can gather to have a drink or a meal**. If these facilities are not provided by third parties, modern retailers can themselves set up a bar or a restaurant. In addition, modern retailers can provide for example **benches** in the entrance hall and outside the store, where older (and younger) individuals can sit down without being obliged to buy a coffee or a meal.

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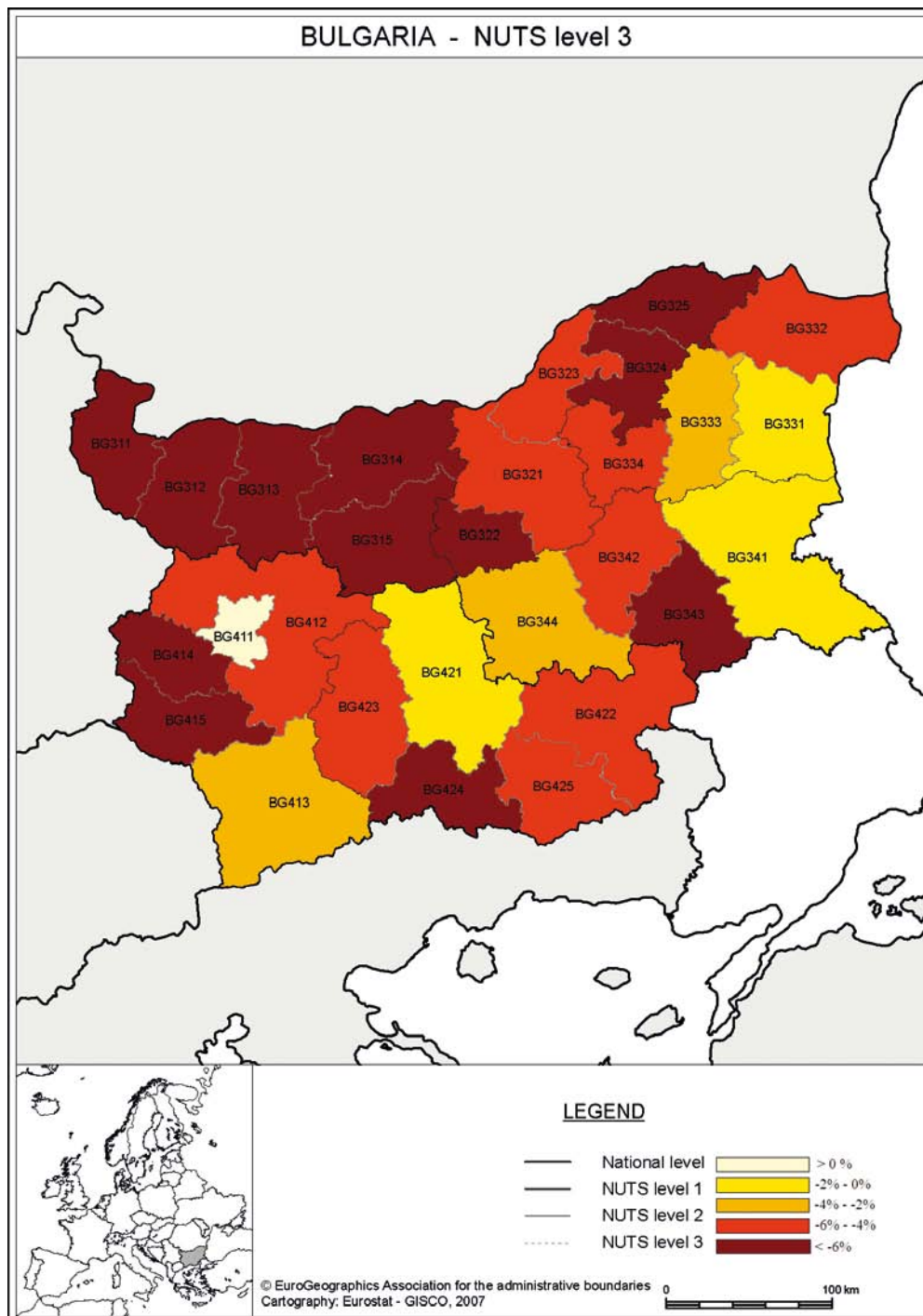
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7. Appendix

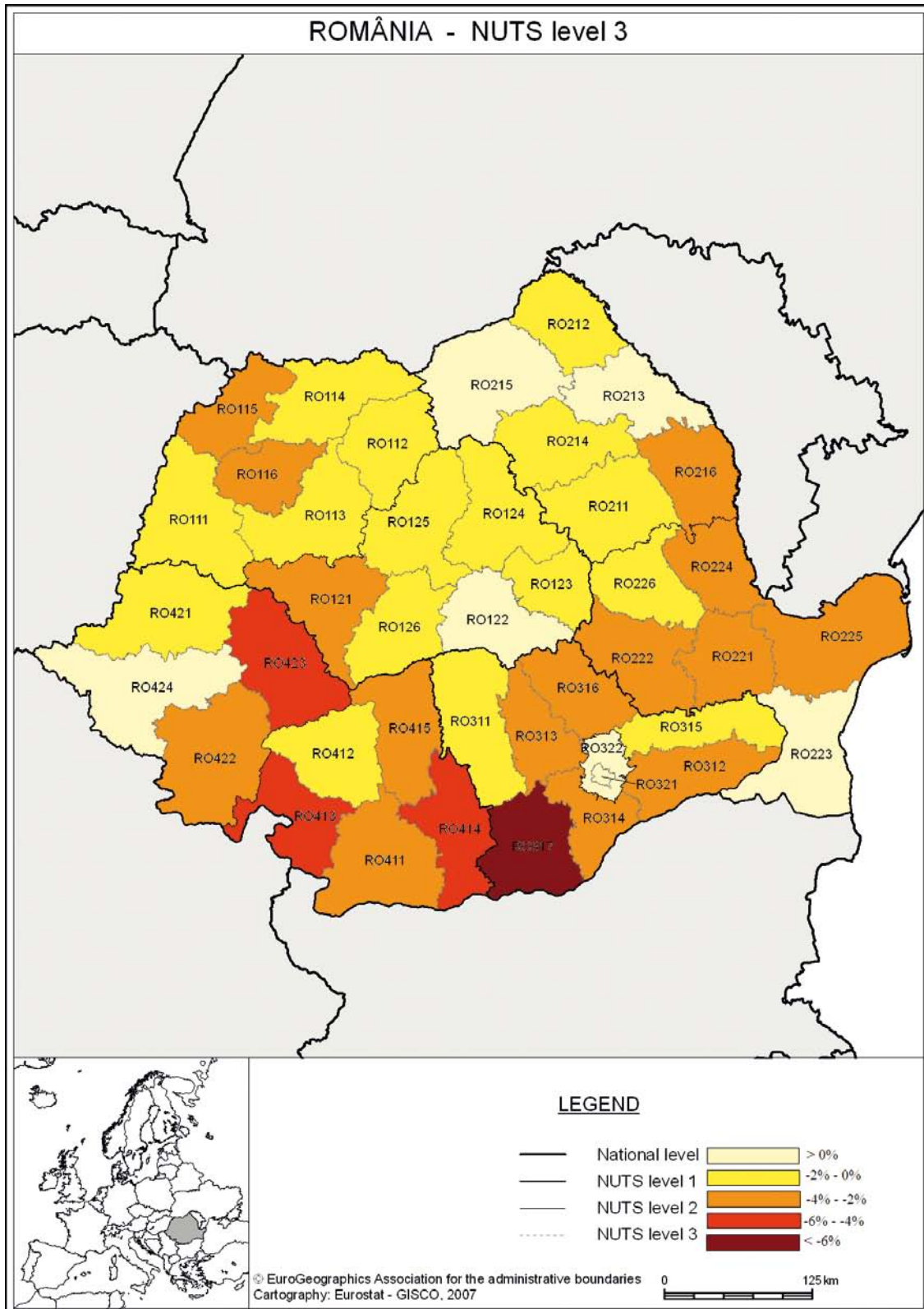
7.1 Regional Change in Population

Figure: Population Change in Bulgaria (%; 2002–2008)



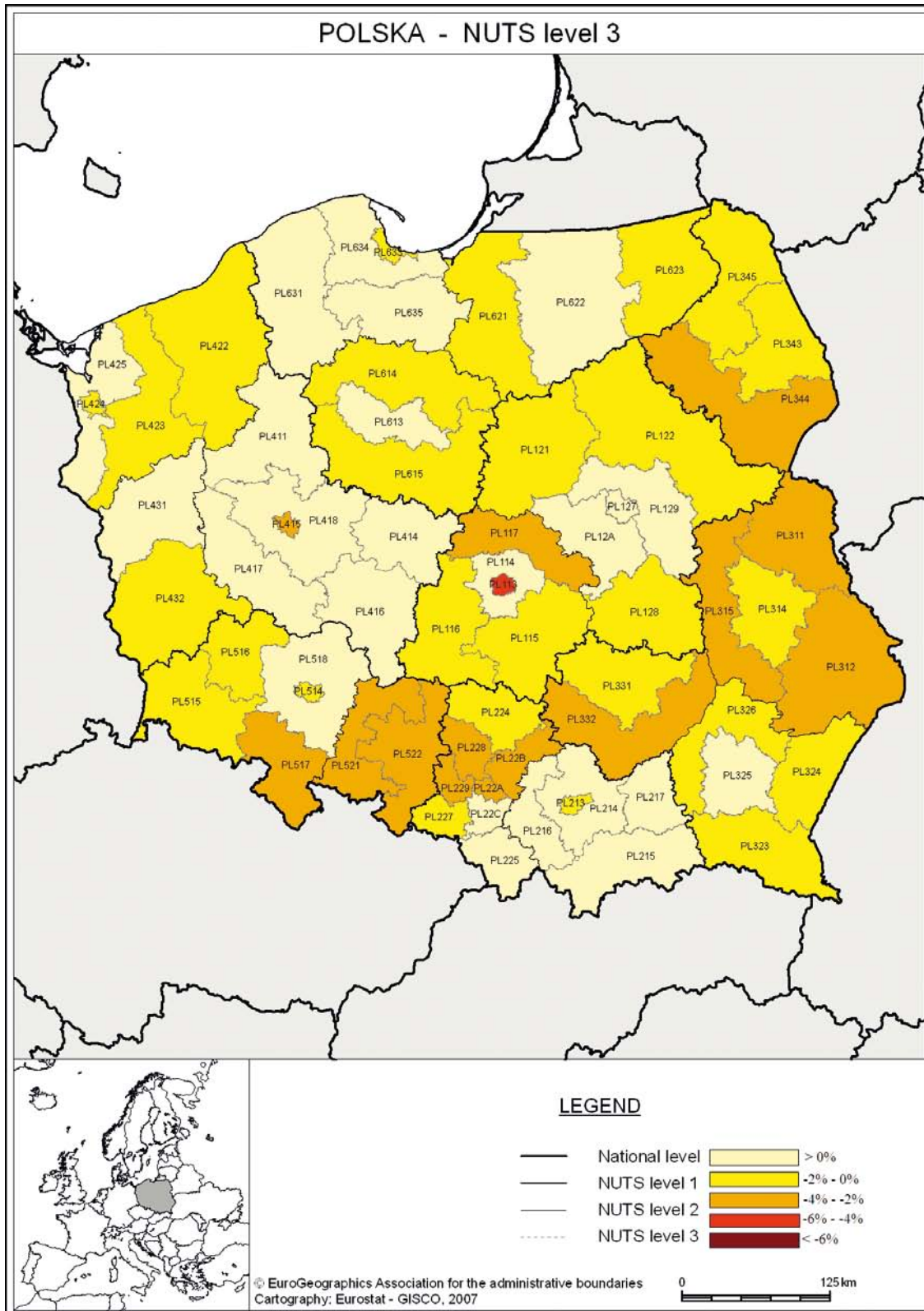
Source: Eurostat Online Database

Figure: Population Change in Romania (%; 2002–2008)



Source: Eurostat Online Database

Figure: Population Change in Poland (%; 2002–2008)



Source: Eurostat Online Database

Table: Regional change in population in Bulgaria (2002–2008; %)

NUTS code	Region	Change in population	NUTS code	Region	Change in population
	Bulgaria	-3,18	BG34	Yugoiztochen	-3,16
BG31	Severozapaden	-9,25	BG341	Burgas	-0,56
BG311	Vidin	-12,06	BG342	Sliven	-4,35
BG312	Montana	-10,34	BG343	Yambol	-7,61
BG313	Vratsa	-9,24	BG344	Stara Zagora	-3,56
BG314	Pleven	-8,48	BG41	Yugozapaden	0,80
BG315	Lovech	-7,42	BG411	Sofia (stolitsa)	5,28
BG32	Severen tsentralen	-5,53	BG412	Sofia	-5,16
BG321	Veliko Tarnovo	-4,24	BG413	Blagoevgrad	-3,08
BG322	Gabrovo	-6,74	BG414	Pernik	-6,39
BG323	Ruse	-5,20	BG415	Kyustendil	-7,17
BG324	Razgrad	-6,05	BG42	Yuzhen tsentralen	-3,44
BG325	Silistra	-7,02	BG421	Plovdiv	-1,35
BG33	Severoiztochen	-2,62	BG422	Haskovo	-4,89
BG331	Varna	-0,34	BG423	Pazardzhik	-4,74
BG332	Dobrich	-4,78	BG424	Smolyan	-7,64
BG333	Shumen	-3,36	BG425	Kardzhali	-4,10
BG334	Targovishte	-5,74			

Source: Eurostat Online Database

Table: Regional change in population in Poland (2002–2008; %)

NUTS code	Region	Change in Population	NUTS code	Region	Change in population
	Poland	-0,33	PL31	Lubelskie	-1,61
PL11	Lódzkie	-2,35	PL311	Bialski	-2,06
PL113	Miasto Łódź	-4,87	PL312	Chelmsko-zamojski	-2,65
PL114	Lódzki	0,70	PL314	Lubelski	-0,06
PL115	Piotrkowski	-1,17	PL315	Pulawski	-2,16
PL116	Sieradzki	-1,70	PL32	Podkarpackie	-0,32
PL117	Skiernewicki	-2,75	PL323	Krosnienski	-1,78
PL12	Mazowieckie	1,30	PL324	Przemyski	-0,66
PL121	Ciechanowsko-plocki	-0,93	PL325	Rzeszowski	1,11
PL122	Ostrolecko-siedlecki	-1,02	PL326	Tarnobrzesci	-0,34
PL127	Miasto Warszawa	1,05	PL33	Swietokrzyskie	-1,83
PL128	Radomski	-1,36	PL331	Kielecki	-1,37
PL129	Warszawski-wschodni	4,38	PL332	Sandomiersko-jedrzejowski	-2,56
PL12A	Warszawski-zachodni	5,74	PL34	Podlaskie	-1,39
PL21	Malopolskie	1,53	PL343	Bialostocki	-0,22
PL213	Miasto Kraków	-0,18	PL344	Lomzynski	-2,79
PL214	Krakowski	3,43	PL345	Suwalski	-1,36
PL215	Nowosadecki	2,25	PL41	Wielkopolskie	1,09
PL216	Oswiecimski	0,22	PL411	Pilski	0,63
PL217	Tarnowski	2,33	PL414	Koninski	0,30
PL22	Slaskie	-1,99	PL415	Miasto Poznan	-3,18
PL224	Czestochowski	-1,93	PL416	Kaliski	0,15
PL225	Bielski	1,09	PL417	Leszczynski	1,32
PL227	Rybnicki	-1,43	PL418	Poznanski	8,18
PL228	Bytomski	-3,01	PL42	Zachodniopomorskie	-0,36
PL229	Gliwicki	-3,21	PL422	Koszalinski	-0,42
PL22A	Katowicki	-3,98	PL423	Stargardzki	-0,89
PL22B	Sosnowiecki	-2,68	PL424	Miasto Szczecin	-1,91
PL22C	Tyski	0,28	PL425	Szczecinski	2,47

To be continued

Table: Regional change in population in Poland (2002–2008; %) continuation

NUTS code	Region	Change in Population	NUTS code	Region	Change in population
PL43	Lubuskie	–0,05	PL61	Kujawsko-Pomorskie	–0,17
PL431	Gorzowski	0,45	PL613	Bydgosko-Torunski	0,44
PL432	Zielonogórski	–0,35	PL614	Grudziadzki	–0,05
PL51	Dolnoslaskie	–1,07	PL615	Wlclawski	–0,85
PL514	Miasto Wroclaw	–1,23	PL62	Warminsko-Mazurskie	–0,16
PL515	Jeleniogórski	–1,96	PL621	Elblaski	–0,61
PL516	Legnicko-Glogowski	–0,94	PL622	Olsztynski	0,22
PL517	Walbrzyski	–3,08	PL623	Elcki	–0,15
PL518	Wroclawski	2,70	PL63	Pomorskie	1,50
PL52	Opolskie	–2,75	PL631	Slupski	0,32
PL521	Nyski	–2,27	PL633	Trojmiejski	–1,61
PL522	Opolski	–3,06	PL634	Gdanski	7,84
			PL635	Starogardzki	1,45

Source: Eurostat Online Database

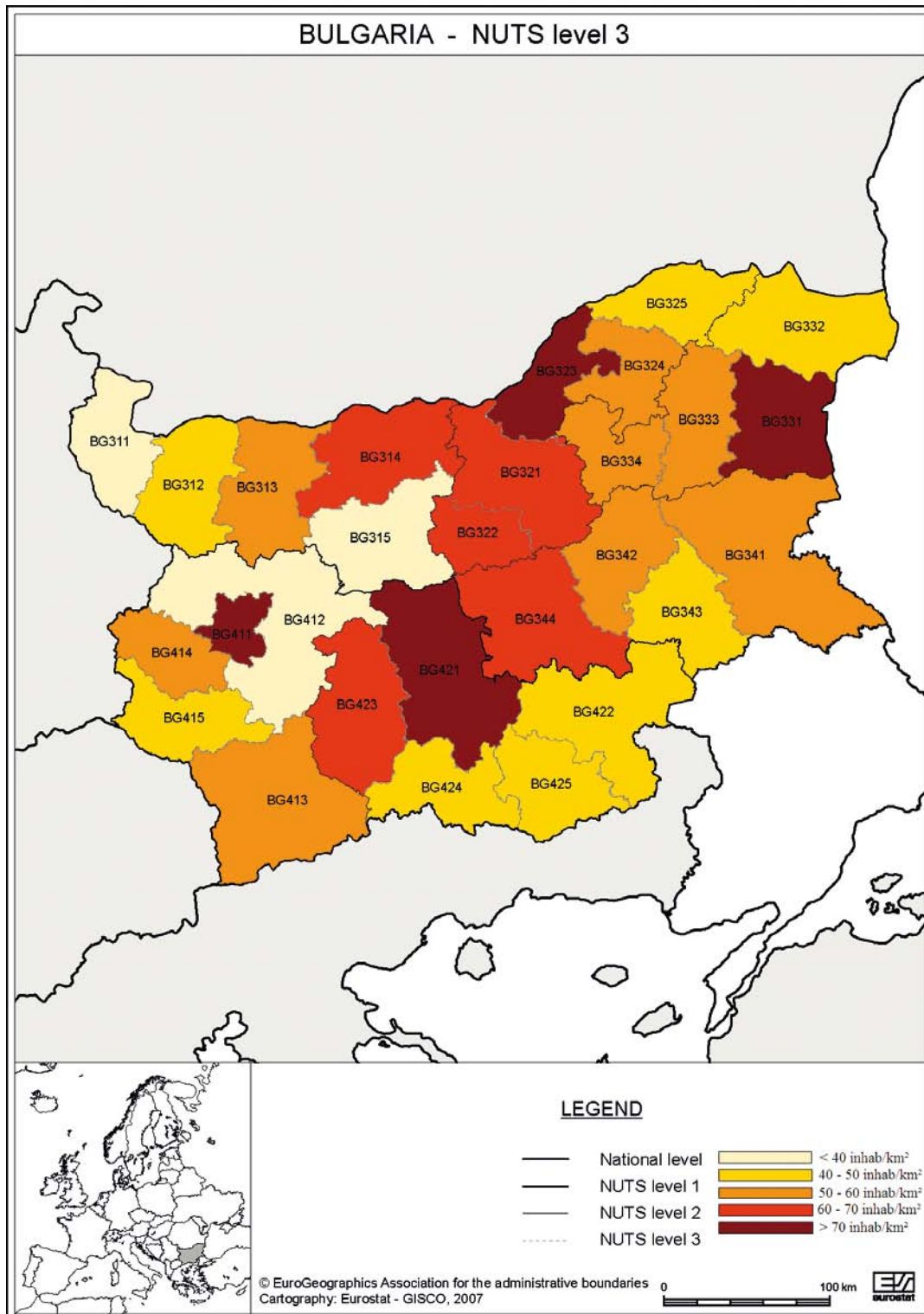
Table: Regional change in Romania (2007; inhabitants per km²)

NUTS code	Region	Population density	NUTS code	Region	Population density
	Romania	-1,40	RO31	Sud — Muntenia	-2,71
RO11	Nord-Vest	-1,39	RO311	Arges	-1,45
RO111	Bihor	-1,63	RO312	Calarasi	-2,12
RO112	Bistrita-Nasaud	-0,49	RO313	Dâmbovita	-2,02
RO113	Cluj	-0,19	RO314	Giurgiu	-3,40
RO114	Maramures	-1,71	RO315	Ialomita	-1,87
RO115	Satu Mare	-2,43	RO316	Prahova	-2,20
RO116	Salaj	-3,06	RO317	Teleorman	-6,89
RO12	Centru	-1,04	RO32	Bucuresti — Ilfov	1,27
RO121	Alba	-3,09	RO321	Bucuresti	0,37
RO122	Brasov	0,12	RO322	Ilfov	7,57
RO123	Covasna	-1,20	RO41	Sud-Vest Oltenia	-3,30
RO124	Harghita	-1,58	RO411	Dolj	-2,98
RO125	Mures	-1,16	RO412	Gorj	-1,96
RO126	Sibiu	-0,14	RO413	Mehedinti	-4,46
RO21	Nord-Est	-0,57	RO414	Olt	-4,74
RO211	Bacau	-1,06	RO415	Vâlcea	-2,54
RO212	Botosani	-1,94	RO42	Vest	-1,60
RO213	Iasi	1,75	RO421	Arad	-1,32
RO214	Neamt	-1,64	RO422	Caras-Severin	-3,10
RO215	Suceava	0,01	RO423	Hunedoara	-5,24
RO216	Vaslui	-2,04	RO424	Timis	1,70
RO22	Sud-Est	-1,61			
RO221	Braila	-3,45			
RO222	Buzau	-2,87			
RO223	Constanta	0,82			
RO224	Galati	-2,19			
RO225	Tulcea	-2,68			
RO226	Vrancea	-1,04			

Source: Eurostat Online Database

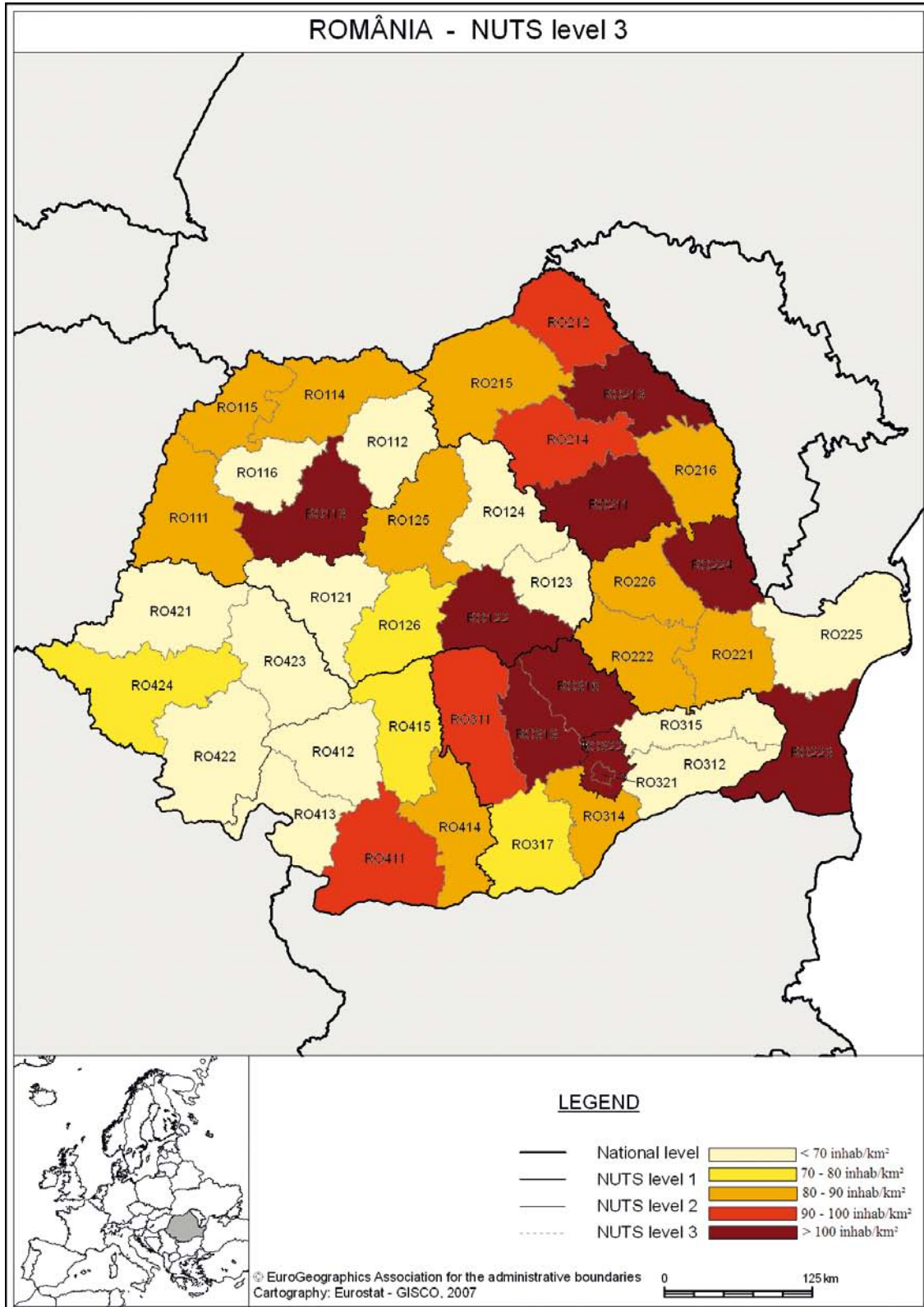
7.2 Regional Population Density

Figure: Population density in Bulgaria (in 2007; number of inhabitants per km²)



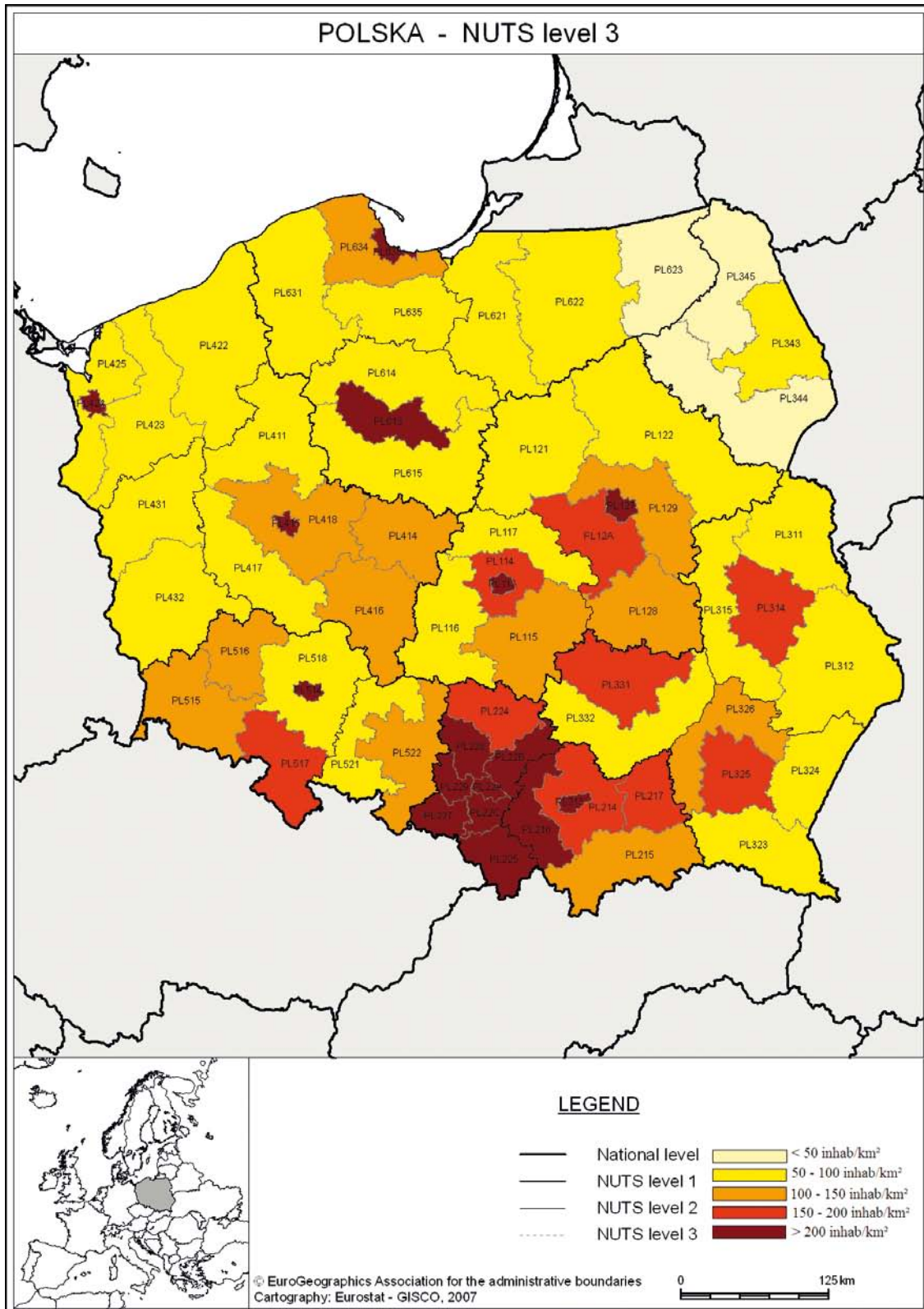
Source: Eurostat Online Database

Figure: Population density in Romania (in 2007; number of inhabitants per km²)



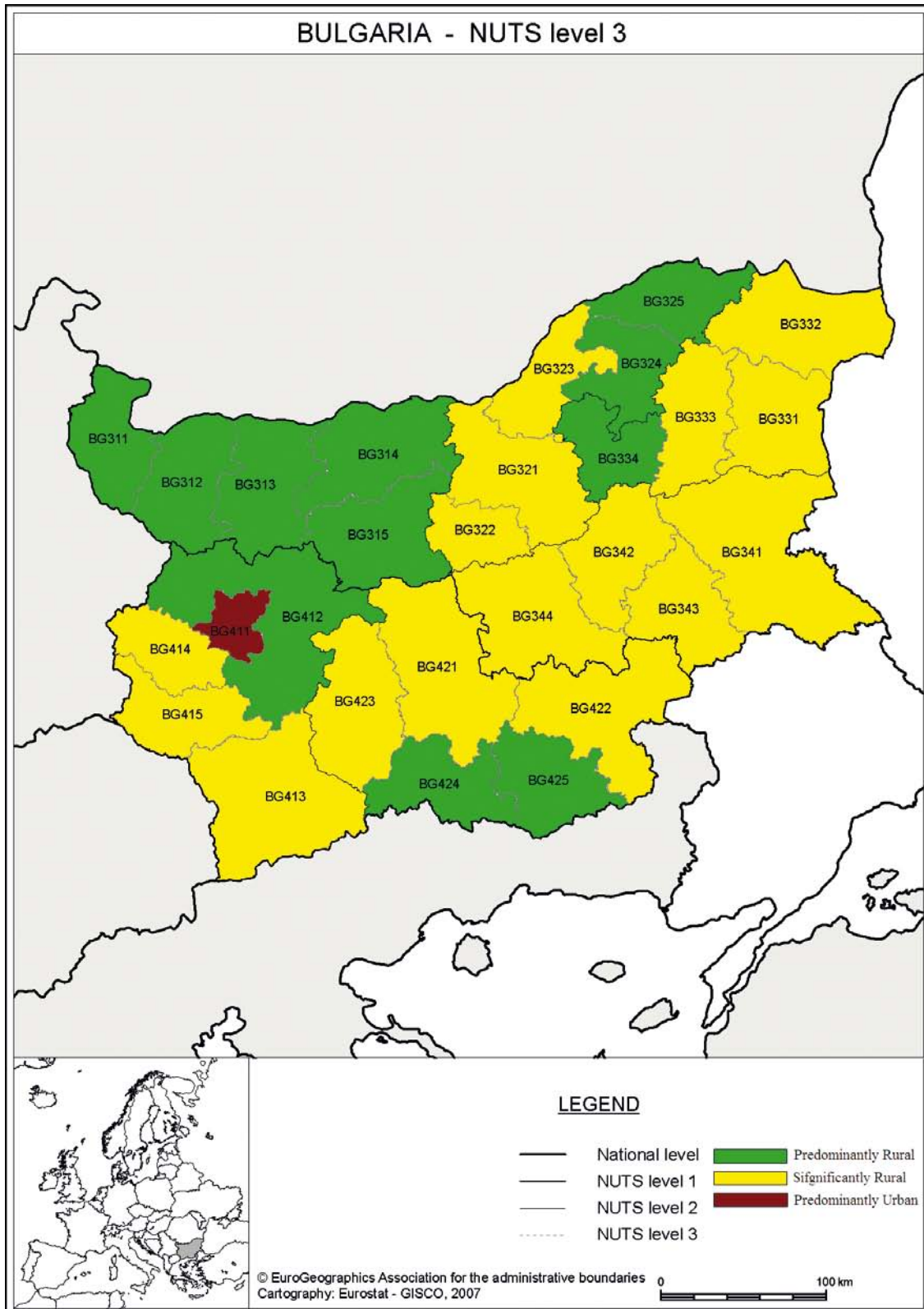
Source: Eurostat Online Database

Figure: Population density in Poland (in 2007; number of inhabitants per km²)



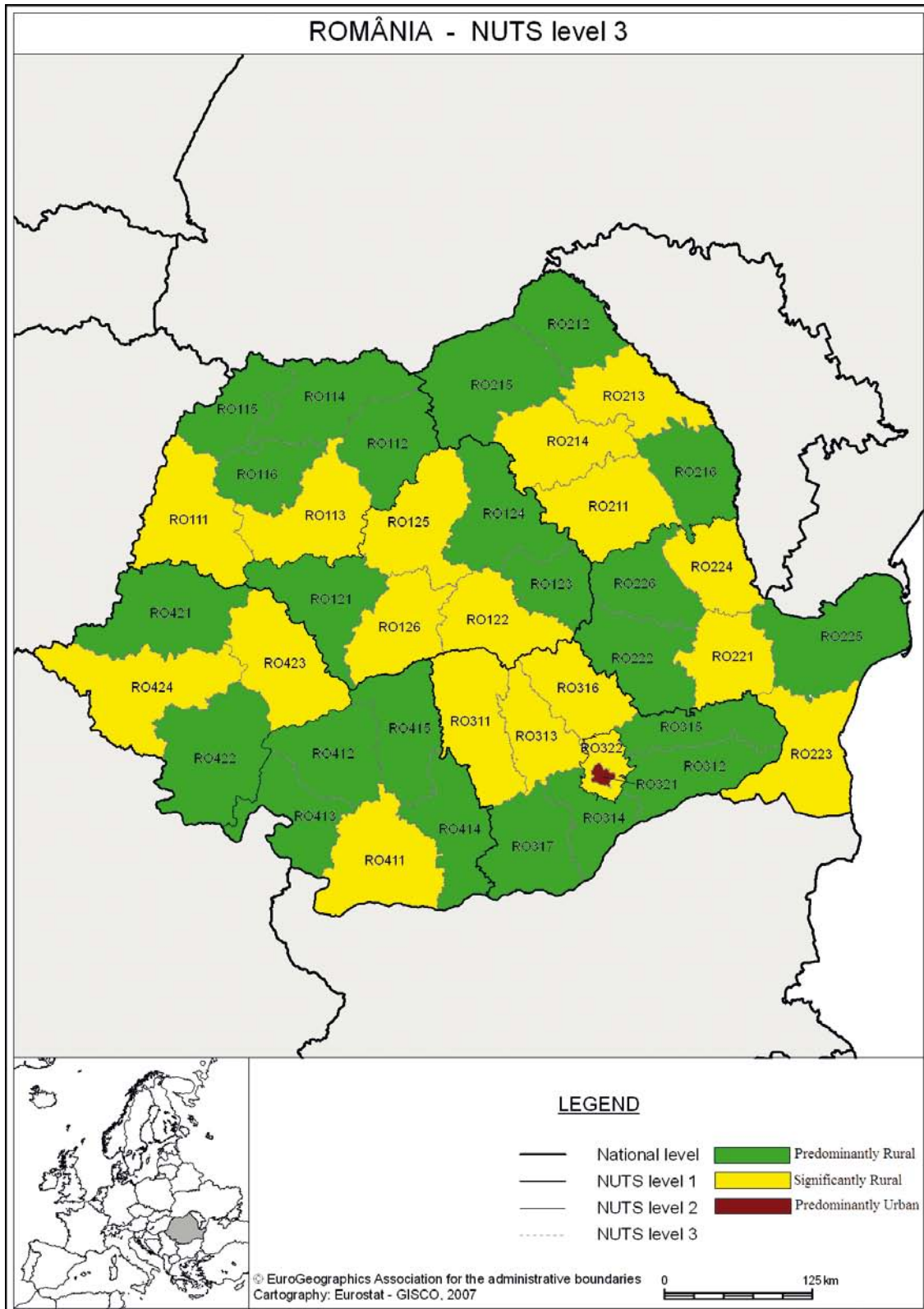
Source: Eurostat Online Database

Figure: Urban-Rural Classification in Bulgaria



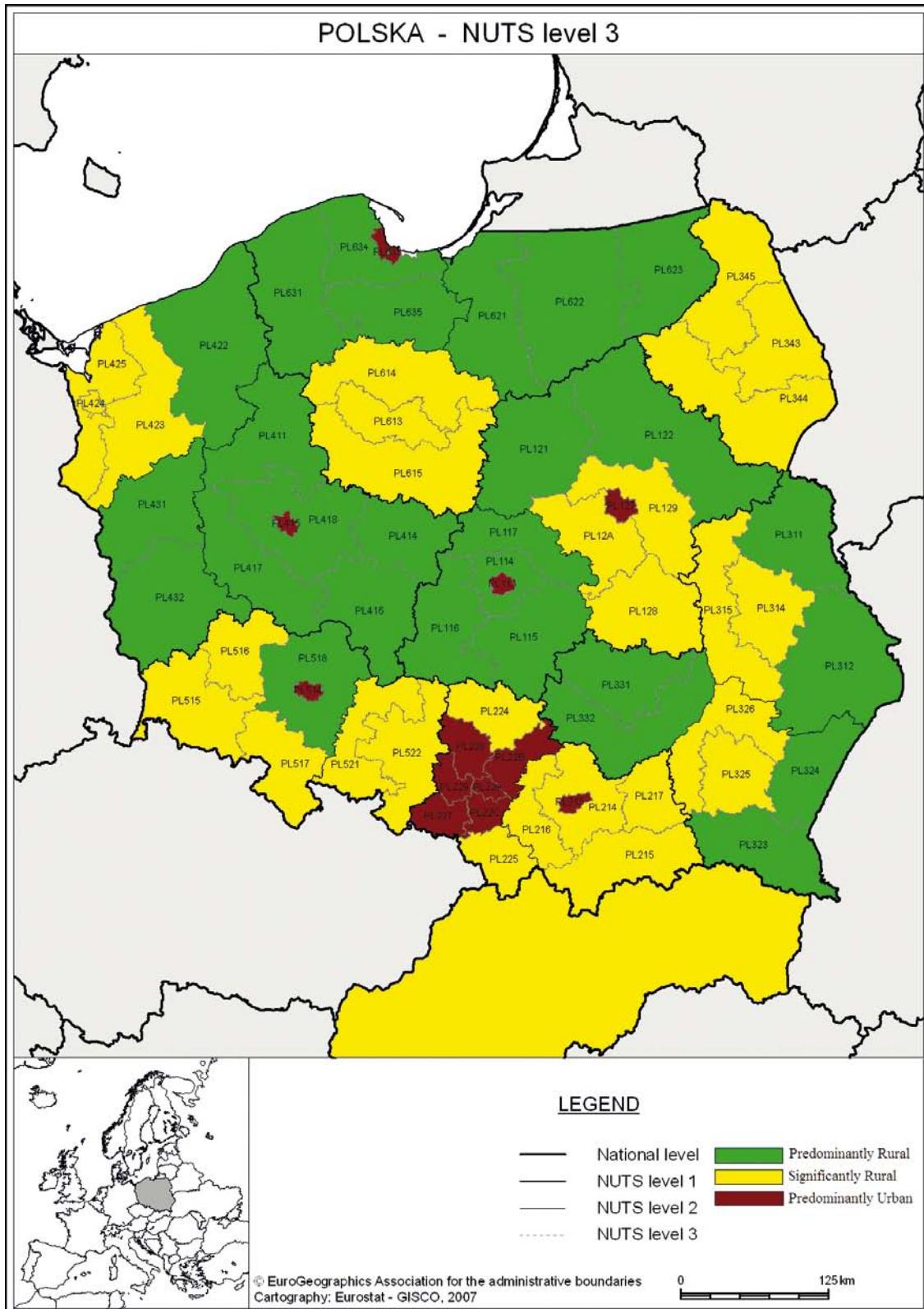
Source: Eurostat Online Database

Figure: Urban-Rural Classification in Romania



Source: Eurostat Online Database

Figure: Urban-Rural Classification in Poland



Source: Eurostat Online Database

Table: Regional population density in Bulgaria (2007; inhabitants per km²)

NUTS code	Region	Population density	NUTS code	Region	Population density
	Bulgaria	69,0	BG34	Yugoiztochen	57,0
BG31	Severozapaden	49,1	BG341	Burgas	54,1
BG311	Vidin	37,5	BG342	Sliven	58,8
BG312	Montana	44,7	BG343	Yambol	42,8
BG313	Vratsa	56,4	BG344	Stara Zagora	69,3
BG314	Pleven	64,4	BG41	Yugozapaden	104,2
BG315	Lovech	37,9	BG411	Sofia (stolitsa)	918,8
BG32	Severen tsentralen	62,5	BG412	Sofia	36,5
BG321	Veliko Tarnovo	60,0	BG413	Blagoevgrad	51,1
BG322	Gabrovo	66,2	BG414	Pernik	58,2
BG323	Ruse	90,7	BG415	Kyustendil	49,2
BG324	Razgrad	51,9	BG42	Yuzhen tsentralen	69,3
BG325	Silistra	46,3	BG421	Plovdiv	118,2
BG33	Severoiztochen	68,5	BG422	Haskovo	47,5
BG331	Varna	120,0	BG423	Pazardzhik	66,2
BG332	Dobrich	43,2	BG424	Smolyan	40,4
BG333	Shumen	58,1	BG425	Kardzhali	48,9
BG334	Targovishte	52,2			

Source: Eurostat Online Database

Table: Regional population density in Poland (2007; inhabitants per km²)

NUTS code	Region	Population density	NUTS code	Region	Population density
	Poland	121,9	PL31	Lubelskie	86,5
PL11	Lódzkie	140,9	PL311	Bialski	51,8
PL113	Miasto Łódź	2594,7	PL312	Chelmsko-zamojski	70,4
PL114	Lódzki	170,1	PL314	Lubelski	169,3
PL115	Piotrkowski	100,5	PL315	Pulawski	87,8
PL116	Sieradzki	80,4	PL32	Podkarpackie	117,5
PL117	Skierniewicki	91,9	PL323	Krosnienski	86,9
PL12	Mazowieckie	145,4	PL324	Przemyski	92,3
PL121	Ciechanowsko-plocki	80,5	PL325	Rzeszowski	170,6
PL122	Ostrolecko-siedlecki	62,0	PL326	Tarnobrzeski	137,6
PL127	Miasto Warszawa	3292,3	PL33	Swietokrzyskie	109,3
PL128	Radomski	108,3	PL331	Kielecki	155,1
PL129	Warszawski-wschodni	145,2	PL332	Sandomiersko-jedrzejowski	74,8
PL12A	Warszawski-zachodni	169,2	PL34	Podlaskie	59,3
PL21	Malopolskie	215,5	PL343	Bialostocki	98,2
PL213	Miasto Kraków	2312,7	PL344	Lomzynski	47,0
PL214	Krakowski	163,8	PL345	Suwalski	44,5
PL215	Nowosadecki	138,8	PL41	Wielkopolskie	113,3
PL216	Oswiecimski	231,8	PL411	Pilski	62,9
PL217	Tarnowski	176,4	PL414	Koninski	101,6
PL22	Slaskie	378,6	PL415	Miasto Poznan	2156,3
PL224	Czestochowski	175,4	PL416	Kaliski	115,3
PL225	Bielski	275,5	PL417	Leszczynski	90,0
PL227	Rybnicki	472,0	PL418	Poznanski	111,7
PL228	Bytomski	292,2	PL42	Zachodniopomorskie	73,9
PL229	Gliwicki	573,4	PL422	Koszalinski	57,0
PL22A	Katowicki	2042,6	PL423	Stargardzki	55,0
PL22B	Sosnowiecki	402,6	PL424	Miasto Szczecin	1359,0
PL22C	Tyski	405,1	PL425	Szczecinski	58,9

To be continued

Table: Regional population density in Poland (2007; inhabitants per km²) continuation

NUTS code	Region	Population density	NUTS code	Region	Population density
PL43	Lubuskie	72,1	PL61	Kujawsko-Pomorskie	115,0
PL431	Gorzowski	62,4	PL613	Bydgosko-Torunski	259,9
PL432	Zielonogórski	79,6	PL614	Grudziadzki	77,8
PL51	Dolnoslaskie	144,5	PL615	Wlodelawski	94,4
PL514	Miasto Wroclaw	2166,0	PL62	Warminsko-Mazurskie	59,0
PL515	Jeleniogórski	104,4	PL621	Elblaski	70,8
PL516	Legnicko-Glogowski	129,3	PL622	Olsztynski	59,3
PL517	Walbrzyski	163,6	PL623	Elcki	44,7
PL518	Wroclawski	82,9	PL63	Pomorskie	120,3
PL52	Opolskie	110,7	PL631	Slupski	58,5
PL521	Nyski	96,3	PL633	Trojmiejski	1807,1
PL522	Opolski	122,7	PL634	Gdanski	110,2
			PL635	Starogardzki	92,5

Source: Eurostat Online Database

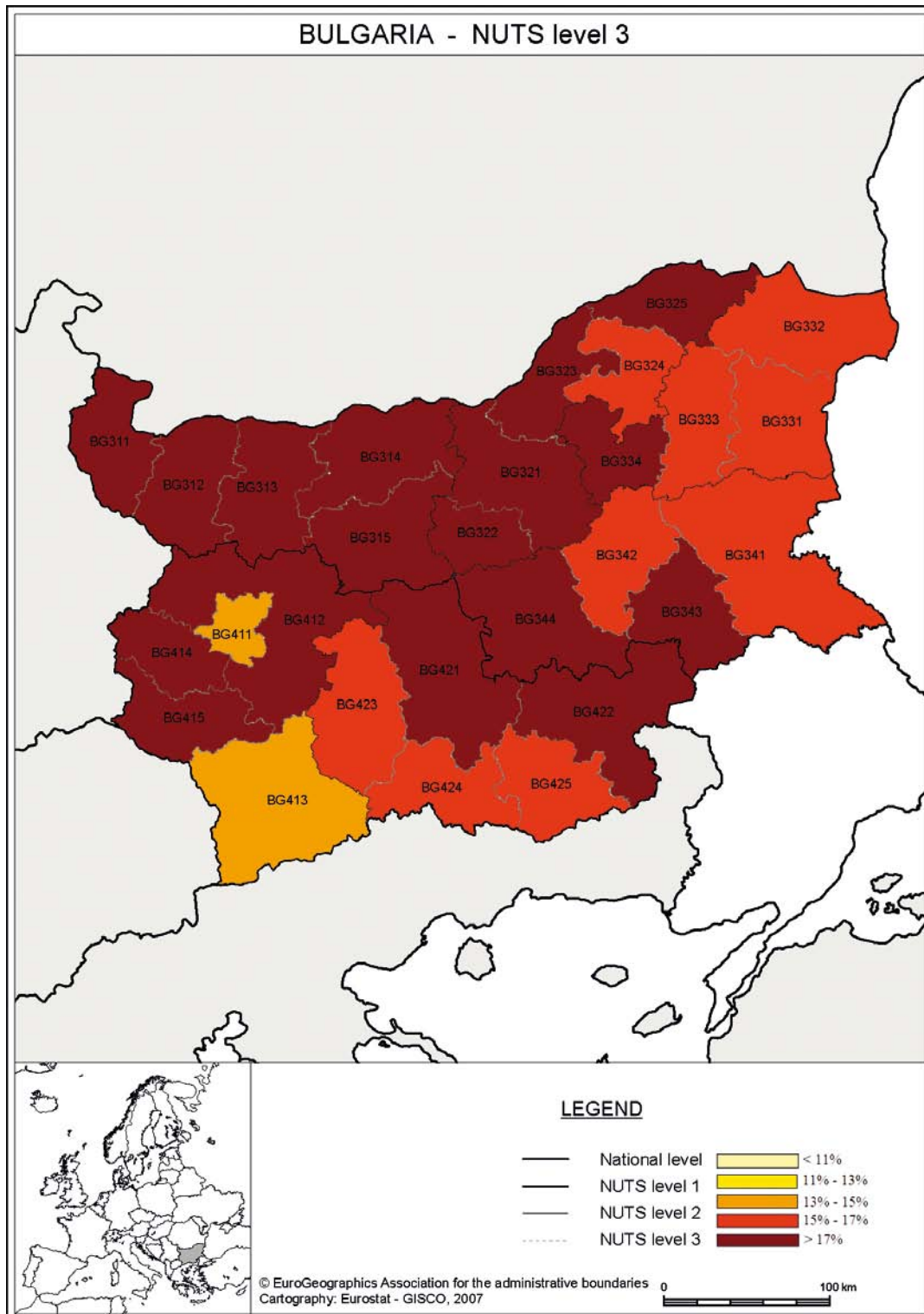
Table: Regional population density in Romania (2007; inhabitants per km²)

NUTS code	Region	Population density	NUTS code	Region	Population density
	Romania	93,70	RO31	Sud — Muntenia	98,7
RO11	Nord-Vest	81,0	RO311	Arges	95,7
RO111	Bihor	80,2	RO312	Calarasi	65,7
RO112	Bistrita-Nasaud	60,0	RO313	Dâmbovita	135,1
RO113	Cluj	105,2	RO314	Giurgiu	83,7
RO114	Maramures	82,1	RO315	Ialomita	67,1
RO115	Satu Mare	84,7	RO316	Prahova	177,5
RO116	Salaj	63,9	RO317	Teleorman	73,2
RO12	Centru	74,7	RO32	Bucuresti — Ilfov	1271,9
RO121	Alba	60,8	RO321	Bucuresti	10504,8
RO122	Brasov	112,0	RO322	Ilfov	187,3
RO123	Covasna	60,7	RO41	Sud-Vest Oltenia	80,0
RO124	Harghita	49,4	RO411	Dolj	98,8
RO125	Mures	87,5	RO412	Gorj	68,6
RO126	Sibiu	78,8	RO413	Mehedinti	62,6
RO21	Nord-Est	103,1	RO414	Olt	89,4
RO211	Bacau	111,3	RO415	Vâlcea	72,9
RO212	Botosani	94,0	RO42	Vest	61,0
RO213	Iasi	153,0	RO421	Arad	60,1
RO214	Neamt	98,0	RO422	Caras-Severin	38,9
RO215	Suceava	83,9	RO423	Hunedoara	67,4
RO216	Vaslui	87,4	RO424	Timis	78,4
RO22	Sud-Est	90,8			
RO221	Braila	82,3			
RO222	Buzau	81,5			
RO223	Constanta	108,6			
RO224	Galati	141,9			
RO225	Tulcea	49,4			
RO226	Vrancea	83,2			

Source: Eurostat Online Database

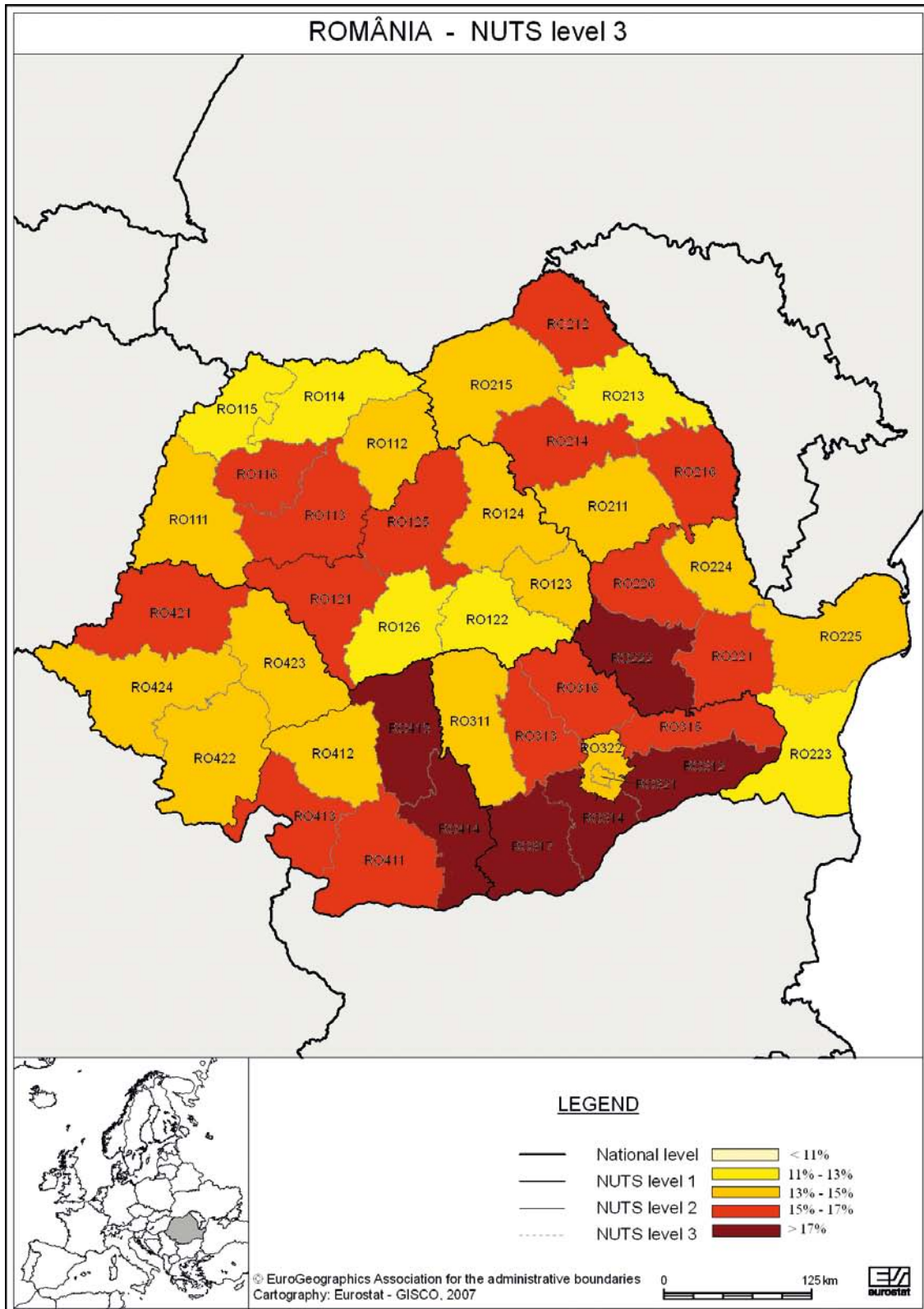
7.3. Regional Age Structure

Figure: Share of the population older than 65 years in Bulgaria (% , 2009)



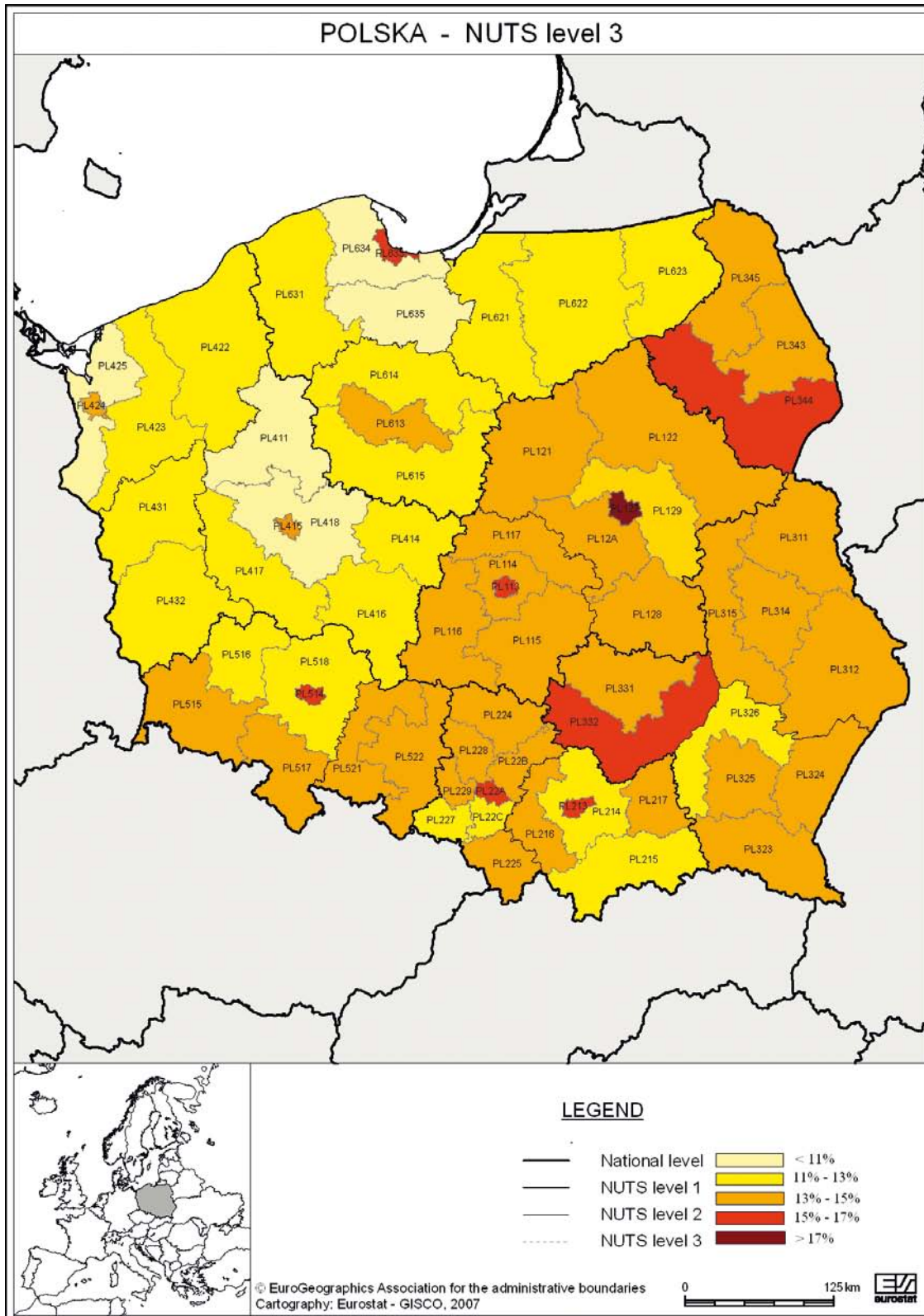
Source: Eurostat Online Database

Figure: Share of the population older than 65 years in Romania (% , 2009)



Source: Eurostat Online Database

Figure: Share of the population older than 65 years in Poland (% , 2009)



Source: Eurostat Online Database

Table: Share of the population older than 65 years in Bulgaria (2007; %)

NUTS code	Region	Share of the population	NUTS code	Region	Share of the population
	Bulgaria	17,4	BG34	Yugoiztochen	17,0
BG31	Severozapaden	21,2	BG341	Burgas	15,5
BG311	Vidin	23,9	BG342	Sliven	15,8
BG312	Montana	22,7	BG343	Yambol	20,0
BG313	Vratsa	19,6	BG344	Stara Zagora	18,3
BG314	Pleven	20,5	BG41	Yugozapaden	16,3
BG315	Lovech	21,3	BG411	Sofia (stolitsa)	14,8
BG32	Severen tsentralen	18,4	BG412	Sofia	20,1
BG321	Veliko Tarnovo	18,7	BG413	Blagoevgrad	15,0
BG322	Gabrovo	21,6	BG414	Pernik	21,5
BG323	Ruse	18,2	BG415	Kyustendil	21,1
BG324	Razgrad	15,8	BG42	Yuzhen tsentralen	17,3
BG325	Silistra	17,7	BG421	Plovdiv	17,5
BG33	Severoiztochen	15,9	BG422	Haskovo	19,3
BG331	Varna	15,2	BG423	Pazardzhik	16,3
BG332	Dobrich	16,5	BG424	Smolyan	16,2
BG333	Shumen	15,9	BG425	Kardzhali	15,6
BG334	Targovishte	17,3			

Source: Eurostat Online Database

Table: Share of the population older than 65 years in Poland (2007; %)

NUTS code	Region	Share of the population	NUTS code	Region	Share of the population
	Poland	13,5	PL31	Lubelskie	14,3
PL11	Lódzkie	15,0	PL311	Bialski	14,0
PL113	Miasto Łódź	17,0	PL312	Chelmsko-zamojski	14,9
PL114	Lódzki	14,5	PL314	Lubelski	13,6
PL115	Piotrkowski	13,5	PL315	Pulawski	14,9
PL116	Sieradzki	14,3	PL32	Podkarpackie	13,0
PL117	Skierniewicki	14,7	PL323	Krosnienski	13,1
PL12	Mazowieckie	14,5	PL324	Przemyski	13,4
PL121	Ciechanowsko-plocki	13,3	PL325	Rzeszowski	13,1
PL122	Ostrolecko-siedlecki	13,8	PL326	Tarnobrzesci	12,6
PL127	Miasto Warszawa	17,2	PL33	Swietokrzyskie	14,8
PL128	Radomski	13,5	PL331	Kielecki	14,3
PL129	Warszawski-wschodni	12,4	PL332	Sandomiersko-jedrzejowski	15,7
PL12A	Warszawski-zachodni	13,1	PL34	Podlaskie	14,8
PL21	Malopolskie	13,5	PL343	Bialostocki	14,1
PL213	Miasto Kraków	15,2	PL344	Lomzynski	16,3
PL214	Krakowski	12,9	PL345	Suwalski	13,7
PL215	Nowosadecki	12,1	PL41	Wielkopolskie	11,9
PL216	Oswiecimski	13,8	PL411	Pilski	10,9
PL217	Tarnowski	13,3	PL414	Koninski	11,9
PL22	Slaskie	14,0	PL415	Miasto Poznan	14,7
PL224	Czestochowski	14,8	PL416	Kaliski	12,4
PL225	Bielski	13,7	PL417	Leszczynski	11,1
PL227	Rybnicki	12,7	PL418	Poznanski	10,0
PL228	Bytomski	14,8	PL42	Zachodniopomorskie	12,3
PL229	Gliwicki	14,4	PL422	Koszalinski	12,0
PL22A	Katowicki	15,1	PL423	Stargardzki	11,6
PL22B	Sosnowiecki	14,3	PL424	Miasto Szczecin	14,8
PL22C	Tyski	11,8	PL425	Szczecinski	10,5

To be continued

Table: Share of the population older than 65 years in Poland (2007; %) continuation

NUTS code	Region	Share of the population	NUTS code	Region	Share of the population
PL43	Lubuskie	11,8	PL61	Kujawsko-Pomorskie	12,6
PL431	Gorzowski	11,6	PL613	Bydgosko-Torunski	13,2
PL432	Zielonogórski	11,9	PL614	Grudziadzki	12,0
PL51	Dolnoslaskie	13,5	PL615	Wlodelawski	12,4
PL514	Miasto Wroclaw	15,7	PL62	Warminsko-Mazurskie	11,8
PL515	Jeleniogórski	13,2	PL621	Elblaski	11,7
PL516	Legnicko-Glogowski	11,3	PL622	Olsztynski	11,8
PL517	Walbrzyski	14,5	PL623	Elcki	11,9
PL518	Wroclawski	11,7	PL63	Pomorskie	12,2
PL52	Opolskie	14,2	PL631	Slupski	11,1
PL521	Nyski	13,7	PL633	Trojmiejski	15,6
PL522	Opolski	14,5	PL634	Gdanski	9,8
			PL635	Starogardzki	10,8

Source: Eurostat Online Database

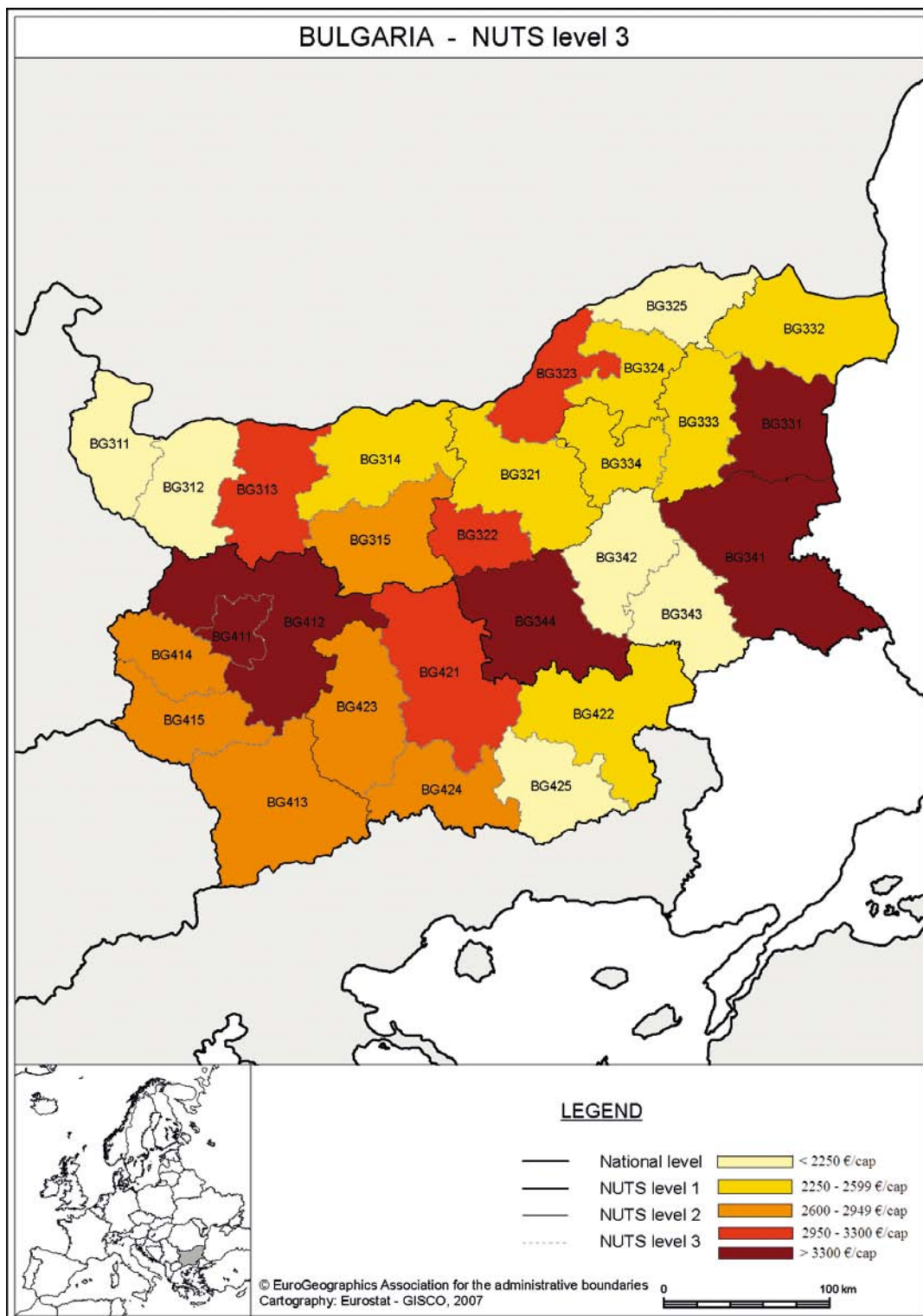
Table: Share of the population older than 65 years in Romania (2007; %)

NUTS code	Region	Share of the population	NUTS code	Region	Share of the population
	Romania	14,9	RO31	Sud — Muntenia	16,7
RO11	Nord-Vest	13,9	RO311	Arges	14,6
RO111	Bihor	14,3	RO312	Calarasi	17,2
RO112	Bistrita-Nasaud	13,0	RO313	Dâmbovita	15,0
RO113	Cluj	15,4	RO314	Giurgiu	19,0
RO114	Maramures	12,5	RO315	Ialomita	16,4
RO115	Satu Mare	12,1	RO316	Prahova	16,0
RO116	Salaj	15,4	RO317	Teleorman	21,6
RO12	Centru	14,0	RO32	Bucuresti — Ilfov	14,1
RO121	Alba	15,2	RO321	Bucuresti	14,2
RO122	Brasov	12,7	RO322	Ilfov	13,9
RO123	Covasna	13,8	RO41	Sud-Vest Oltenia	16,3
RO124	Harghita	14,2	RO411	Dolj	16,8
RO125	Mures	15,3	RO412	Gorj	13,7
RO126	Sibiu	12,8	RO413	Mehedinti	16,4
RO21	Nord-Est	14,5	RO414	Olt	17,0
RO211	Bacau	14,0	RO415	Vâlcea	17,0
RO212	Botosani	16,6	RO42	Vest	14,4
RO213	Iasi	12,9	RO421	Arad	15,1
RO214	Neamt	15,5	RO422	Caras-Severin	14,9
RO215	Suceava	14,4	RO423	Hunedoara	14,7
RO216	Vaslui	15,1	RO424	Timis	13,3
RO22	Sud-Est	14,8			
RO221	Braila	16,7			
RO222	Buzau	18,2			
RO223	Constanta	12,3			
RO224	Galati	13,5			
RO225	Tulcea	13,5			
RO226	Vrancea	16,3			

Source: Eurostat Online Database

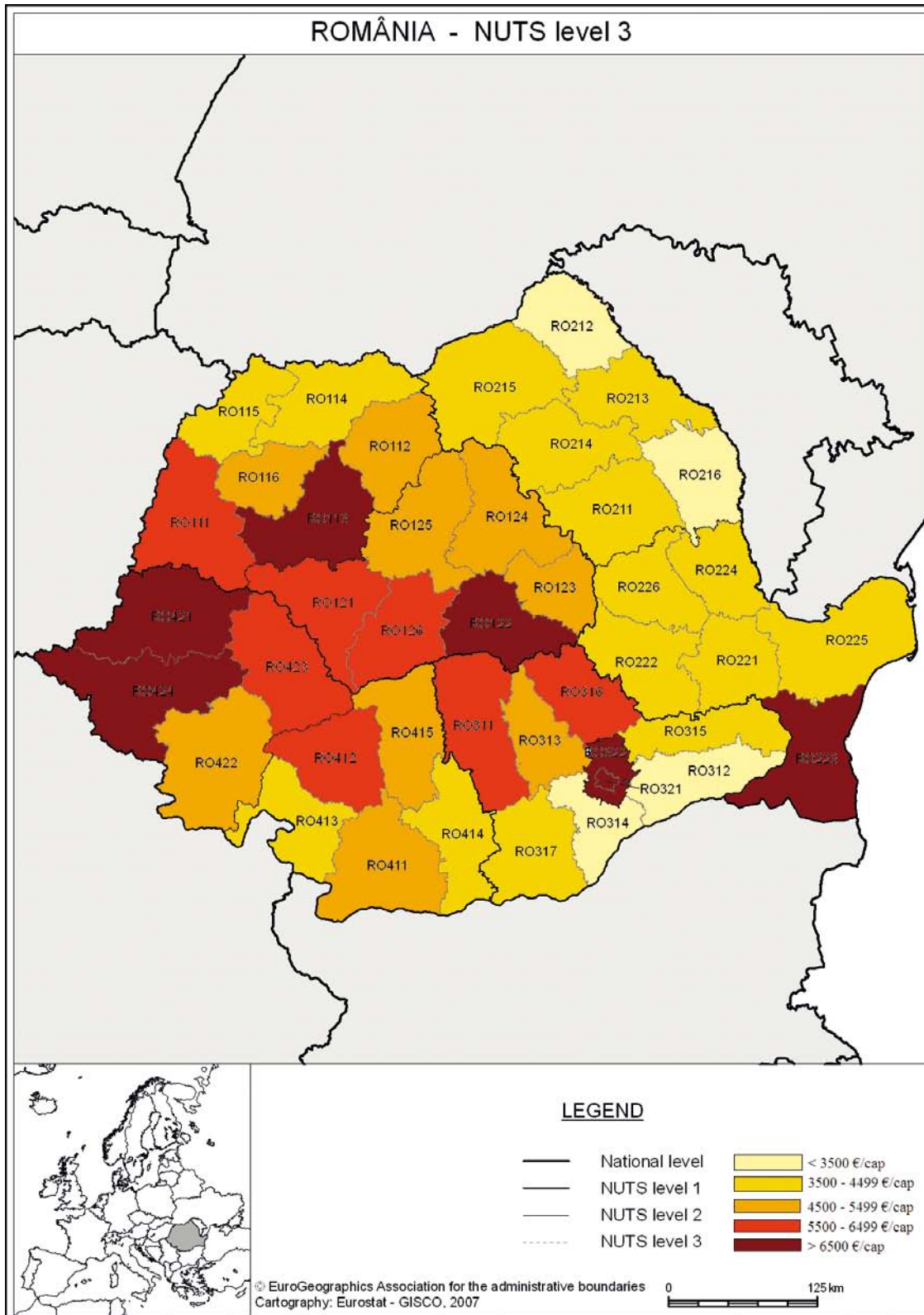
7.4. Regional GDP per capita

Figure: GDP per capita in Bulgaria (in 2007)



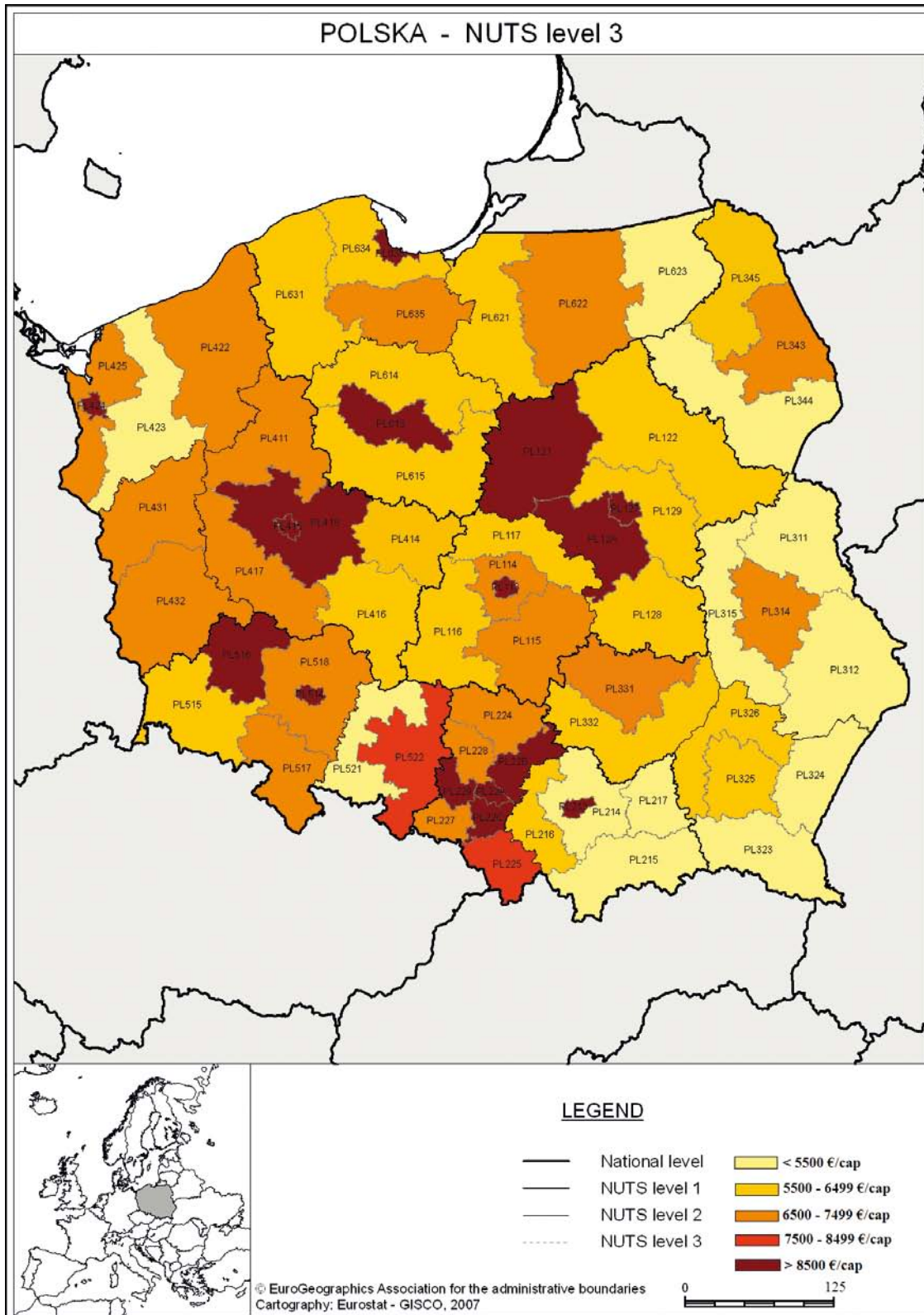
Source: Eurostat Online Database

Figure: GDP per capita in Romania (in 2007)



Source: Eurostat Online Database

Figure: GDP per capita in Poland (in 2007)



Source: Eurostat Online Database

Table: Regional GDP per capita in Bulgaria (2007)

NUTS code	Region	GDP per capita	NUTS code	Region	GDP per capita
	Bulgaria	3800	BG34	Yugoiztochen	3100
BG31	Severozapaden	2600	BG341	Burgas	3500
BG311	Vidin	2200	BG342	Sliven	2000
BG312	Montana	2200	BG343	Yambol	2000
BG313	Vratsa	3100	BG344	Stara Zagora	3600
BG314	Pleven	2400	BG41	Yugozapaden	6200
BG315	Lovech	2900	BG411	Sofia (stolitsa)	8500
BG32	Severen tsentralen	2700	BG412	Sofia	3700
BG321	Veliko Tarnovo	2500	BG413	Blagoevgrad	2700
BG322	Gabrovo	3300	BG414	Pernik	2800
BG323	Ruse	3000	BG415	Kyustendil	2600
BG324	Razgrad	2300	BG42	Yuzhen tsentralen	2700
BG325	Silistra	2100	BG421	Plovdiv	3000
BG33	Severoiztochen	3200	BG422	Haskovo	2300
BG331	Varna	4300	BG423	Pazardzhik	2800
BG332	Dobrich	2300	BG424	Smolyan	2700
BG333	Shumen	2400	BG425	Kardzhali	2200
BG334	Targovishte	2500			

Source: Eurostat Online Database

Table: Regional GDP per capita in Poland (2007)

NUTS code	Region	GDP per capita	NUTS code	Region	GDP per capita
	Poland	8200	PL31	Lubelskie	5500
PL11	Lódzkie	7500	PL311	Bialski	4800
PL113	Miasto Łódź	9900	PL312	Chelmsko-zamojski	4900
PL114	Lódzki	6900	PL314	Lubelski	6900
PL115	Piotrkowski	6900	PL315	Pulawski	4800
PL116	Sieradzki	6000	PL32	Podkarpackie	5500
PL117	Skierniewicki	6000	PL323	Krosnienski	5000
PL12	Mazowieckie	13100	PL324	Przemyski	4700
PL121	Ciechanowsko-plocki	8500	PL325	Rzeszowski	6000
PL122	Ostrolecko-siedlecki	6100	PL326	Tarnobrzesci	5900
PL127	Miasto Warszawa	24900	PL33	Swietokrzyskie	6300
PL128	Radomski	5900	PL331	Kielecki	6700
PL129	Warszawski-wschodni	6400	PL332	Sandomiersko-jedrzejowski	5600
PL12A	Warszawski-zachodni	9400	PL34	Podlaskie	6100
PL21	Malopolskie	7000	PL343	Bialostocki	7100
PL213	Miasto Kraków	12900	PL344	Lomzynski	5100
PL214	Krakowski	5200	PL345	Suwalski	5600
PL215	Nowosadecki	4600	PL41	Wielkopolskie	8500
PL216	Oswiecimski	6200	PL411	Pilski	6500
PL217	Tarnowski	5000	PL414	Koninski	6200
PL22	Slaskie	8700	PL415	Miasto Poznan	16500
PL224	Czestochowski	6900	PL416	Kaliski	6200
PL225	Bielski	7900	PL417	Leszczynski	6800
PL227	Rybnicki	7200	PL418	Poznanski	9100
PL228	Bytomski	6500	PL42	Zachodniopomorskie	7300
PL229	Gliwicki	8800	PL422	Koszalinski	6600
PL22A	Katowicki	11700	PL423	Stargardzki	5200
PL22B	Sosnowiecki	8700	PL424	Miasto Szczecin	10500
PL22C	Tyski	11000	PL425	Szczecinski	7100

To be continued

Table: Regional GDP per capita in Poland (2007) continuation

NUTS code	Region	GDP per capita	NUTS code	Region	GDP per capita
PL43	Lubuskie	7200	PL61	Kujawsko-Pomorskie	7100
PL431	Gorzowski	7200	PL613	Bydgosko-Torunski	9200
PL432	Zielonogórski	7300	PL614	Grudziadzki	5600
PL51	Dolnoslaskie	8900	PL615	Wlclawski	6100
PL514	Miasto Wroclaw	12100	PL62	Warminsko-Mazurskie	6100
PL515	Jeleniogórski	6300	PL621	Elblaski	5700
PL516	Legnicko-Glogowski	13800	PL622	Olsztynski	6700
PL517	Walbrzyski	6500	PL623	Elcki	5200
PL518	Wroclawski	6800	PL63	Pomorskie	8000
PL52	Opolskie	6800	PL631	Slupski	6400
PL521	Nyski	5400	PL633	Trojmiejski	11700
PL522	Opolski	7700	PL634	Gdanski	5600
			PL635	Starogardzki	6500

Source: Eurostat Online Database

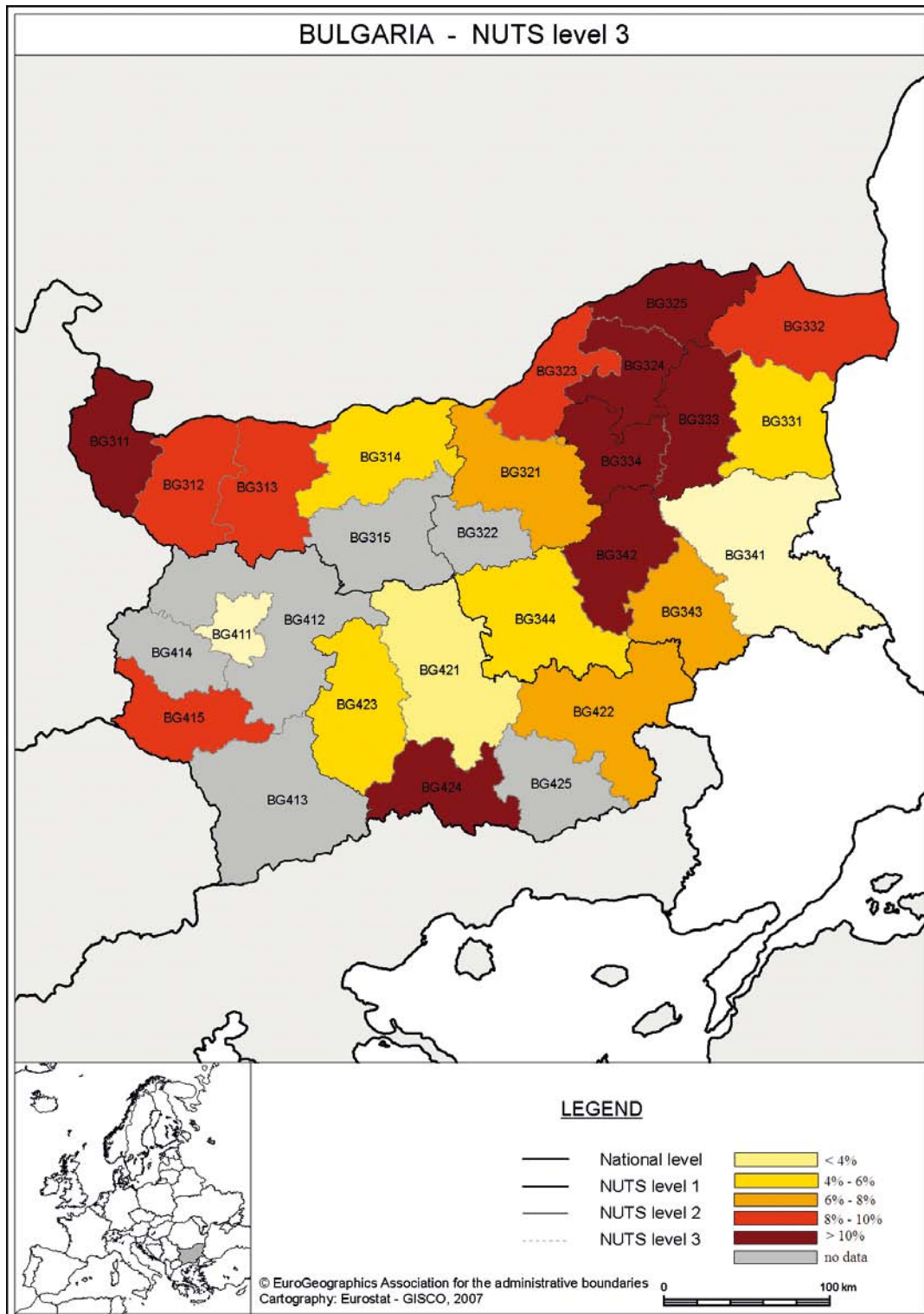
Table: Regional GDP per capita in Romania (2007)

NUTS code	Region	GDP per capita	NUTS code	Region	GDP per capita
	Romania	5800	RO31	Sud — Muntenia	4800
RO11	Nord-Vest	5600	RO311	Arges	6300
RO111	Bihor	5800	RO312	Calarasi	3000
RO112	Bistrita-Nasaud	4700	RO313	Dâmbovita	4600
RO113	Cluj	7800	RO314	Giurgiu	2800
RO114	Maramures	4100	RO315	Ialomita	3500
RO115	Satu Mare	4400	RO316	Prahova	6000
RO116	Salaj	4800	RO317	Teleorman	3500
RO12	Centru	5900	RO32	Bucuresti — Ilfov	12800
RO121	Alba	6400	RO321	Bucuresti	13200
RO122	Brasov	7100	RO322	Ilfov	10300
RO123	Covasna	4700	RO41	Sud-Vest Oltenia	4500
RO124	Harghita	4800	RO411	Dolj	4500
RO125	Mures	4900	RO412	Gorj	6100
RO126	Sibiu	6400	RO413	Mehedinti	3800
RO21	Nord-Est	3700	RO414	Olt	3500
RO211	Bacau	4100	RO415	Vâlcea	5000
RO212	Botosani	3100	RO42	Vest	6700
RO213	Iasi	4400	RO421	Arad	6600
RO214	Neamt	3500	RO422	Caras-Severin	4900
RO215	Suceava	3800	RO423	Hunedoara	5600
RO216	Vaslui	2500	RO424	Timis	8400
RO22	Sud-Est	4700			
RO221	Braila	4300			
RO222	Buzau	3800			
RO223	Constanta	6800			
RO224	Galati	4200			
RO225	Tulcea	3900			
RO226	Vrancea	3500			

Source: Eurostat Online Database

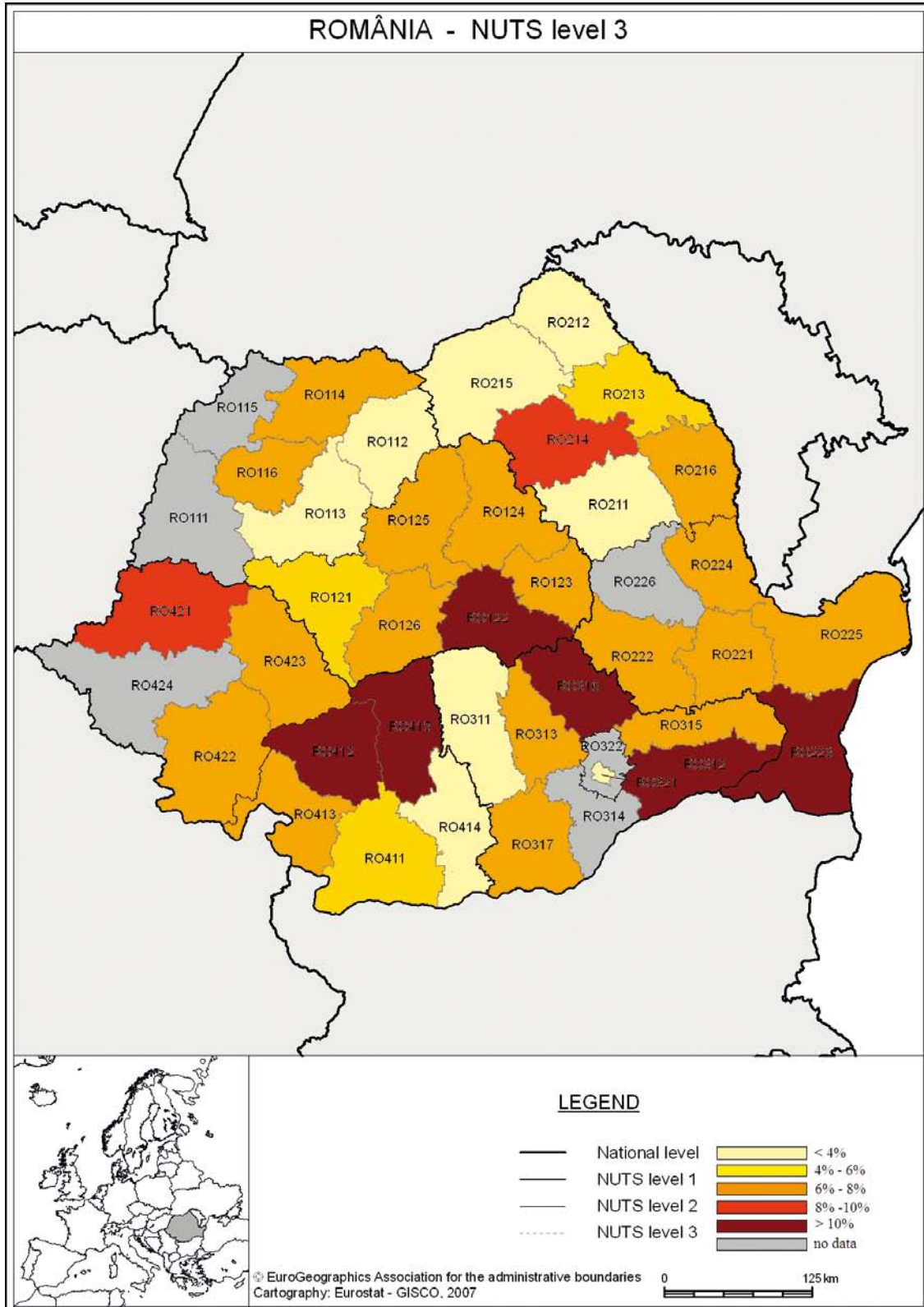
7.5. Regional Unemployment Rate

Figure: Unemployment in Bulgaria (in 2008)



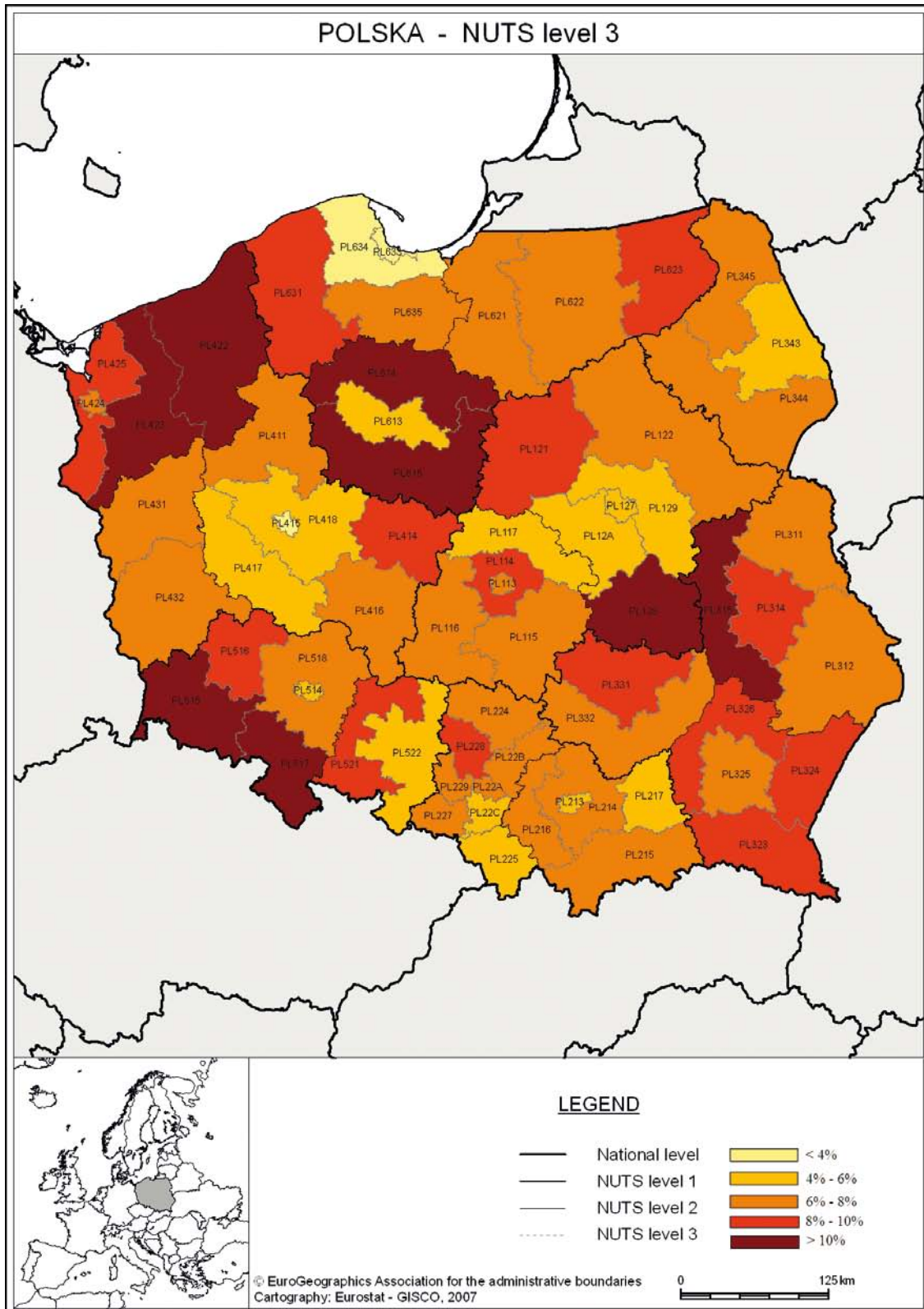
Source: Eurostat Online Database

Figure: Unemployment in Romania (in 2008)



Source: Eurostat Online Database

Figure: Unemployment in Poland (in 2008)



Source: Eurostat Online Database

Table: Regional unemployment rate in Bulgaria (2008; %)

NUTS code	Region	Unemployment rate	NUTS code	Region	Unemployment rate
	Bulgaria	5,6	BG34	Yugoiztochen	5,8
BG31	Severozapaden	7,1	BG341	Burgas	3,4
BG311	Vidin	12,9	BG342	Sliven	12,5
BG312	Montana	8,5	BG343	Yambol	6,4
BG313	Vratsa	9,0	BG344	Stara Zagora	4,4
BG314	Pleven	4,7	BG41	Yugozapaden	2,9
BG315	Lovech	na	BG411	Sofia (stolitsa)	2,5
BG32	Severen tsentralen	8,5	BG412	Sofia	na
BG321	Veliko Tarnovo	7,8	BG413	Blagoevgrad	na
BG322	Gabrovo	na	BG414	Pernik	na
BG323	Ruse	8,3	BG415	Kyustendil	8,3
BG324	Razgrad	14,9	BG42	Yuzhen tsentralen	5,1
BG325	Silistra	11,6	BG421	Plovdiv	3,9
BG33	Severoiztochen	8,6	BG422	Haskovo	6,4
BG331	Varna	4,3	BG423	Pazardzhik	5,3
BG332	Dobrich	9,7	BG424	Smolyan	10,9
BG333	Shumen	16,7	BG425	Kardzhali	na
BG334	Targovishte	10,8			

Source: Eurostat Online Database

Table: Regional unemployment rate in Poland (2008; %)

NUTS code	Region	Unemployment rate	NUTS code	Region	Unemployment rate
	Poland	6,7	PL31	Lubelskie	8,8
PL11	Lódzkie	6,5	PL311	Bialski	7,9
PL113	Miasto Łódź	8,2	PL312	Chelmsko-zamojski	7,4
PL114	Lódzki	7,7	PL314	Lubelski	9,8
PL115	Piotrkowski	6,2	PL315	Pulawski	10,0
PL116	Sieradzki	4,6	PL32	Podkarpackie	8,2
PL117	Skierniewicki	6,0	PL323	Krosnienski	8,5
PL12	Mazowieckie	9,5	PL324	Przemyski	8,5
PL121	Ciechanowsko-plocki	6,5	PL325	Rzeszowski	6,1
PL122	Ostrolecko-siedlecki	4,6	PL326	Tarnobrzeski	9,8
PL127	Miasto Warszawa	10,0	PL33	Swietokrzyskie	8,8
PL128	Radomski	4,3	PL331	Kielecki	9,8
PL129	Warszawski-wschodni	4,4	PL332	Sandomiersko-jedrzejewski	7,6
PL12A	Warszawski-zachodni	6,2	PL34	Podlaskie	6,4
PL21	Malopolskie	5,4	PL343	Bialostocki	5,9
PL213	Miasto Kraków	6,3	PL344	Lomzynski	6,6
PL214	Krakowski	7,3	PL345	Suwalski	7,3
PL215	Nowosadecki	6,5	PL41	Wielkopolskie	6,1
PL216	Oswiecimski	5,2	PL411	Pilski	7,1
PL217	Tarnowski	6,6	PL414	Koninski	8,4
PL22	Slaskie	6,6	PL415	Miasto Poznan	3,3
PL224	Czestochowski	4,4	PL416	Kaliski	7,4
PL225	Bielski	6,6	PL417	Leszczynski	4,8
PL227	Rybnicki	8,7	PL418	Poznanski	4,1
PL228	Bytomski	6,6	PL42	Zachodniopomorskie	9,5
PL229	Gliwicki	6,7	PL422	Koszalinski	11,8
PL22A	Katowicki	7,7	PL423	Stargardzki	11,6
PL22B	Sosnowiecki	4,4	PL424	Miasto Szczecin	6,1
PL22C	Tyski	6,7	PL425	Szczecinski	8,2

To be continued

Table: Regional unemployment rate in Poland (2008; %) continuation

NUTS code	Region	Unemployment rate	NUTS code	Region	Unemployment rate
PL43	Lubuskie	6,5	PL61	Kujawsko-Pomorskie	9,1
PL431	Gorzowski	6,3	PL613	Bydgosko-Torunski	5,9
PL432	Zielonogórski	6,6	PL614	Grudziadzki	10,2
PL51	Dolnoslaskie	9,1	PL615	Wloclawski	11,5
PL514	Miasto Wroclaw	5,8	PL62	Warminsko-Mazurskie	7,4
PL515	Jeleniogórski	11,5	PL621	Elblaski	6,9
PL516	Legnicko-Glogowski	9,5	PL622	Olsztynski	7,2
PL517	Walbrzyski	11,9	PL623	Elcki	8,8
PL518	Wroclawski	7,5	PL63	Pomorskie	5,5
PL52	Opolskie	6,5	PL631	Slupski	8,9
PL521	Nyski	8,7	PL633	Trojmiejski	3,3
PL522	Opolski	5,1	PL634	Gdanski	3,7
			PL635	Starogardzki	7,2

Source: Eurostat Online Database

Table: Regional unemployment rate in Romania (2008; %)

NUTS code	Region	Unemployment rate	NUTS code	Region	Unemployment rate
	Romania	5,8	RO31	Sud — Muntenia	6,8
RO11	Nord-Vest	3,8	RO311	Arges	3,2
RO111	Bihor	na	RO312	Calarasi	11,0
RO112	Bistrita-Nasaud	3,9	RO313	Dâmbovita	7,0
RO113	Cluj	2,5	RO314	Giurgiu	na
RO114	Maramures	7,0	RO315	Ialomita	7,4
RO115	Satu Mare	na	RO316	Prahova	10,2
RO116	Salaj	6,0	RO317	Teleorman	6,0
RO12	Centru	8,5	RO32	Bucuresti — Ilfov	3,4
RO121	Alba	4,1	RO321	Bucuresti	3,1
RO122	Brasov	14,3	RO322	Ilfov	na
RO123	Covasna	7,6	RO41	Sud-Vest Oltenia	6,5
RO124	Harghita	7,5	RO411	Dolj	5,0
RO125	Mures	7,7	RO412	Gorj	14,9
RO126	Sibiu	7,7	RO413	Mehedinti	6,2
RO21	Nord-Est	4,5	RO414	Olt	2,4
RO211	Bacau	2,7	RO415	Vâlcea	10,8
RO212	Botosani	3,2	RO42	Vest	5,7
RO213	Iasi	4,1	RO421	Arad	8,0
RO214	Neamt	8,1	RO422	Caras-Severin	7,4
RO215	Suceava	3,4	RO423	Hunedoara	7,4
RO216	Vaslui	7,7	RO424	Timis	na
RO22	Sud-Est	7,2			
RO221	Braila	7,6			
RO222	Buzau	7,0			
RO223	Constanta	11,0			
RO224	Galati	6,3			
RO225	Tulcea	6,8			
RO226	Vrancea	na			

Source: Eurostat Online Database

7.6. Regional Car Ownership Data

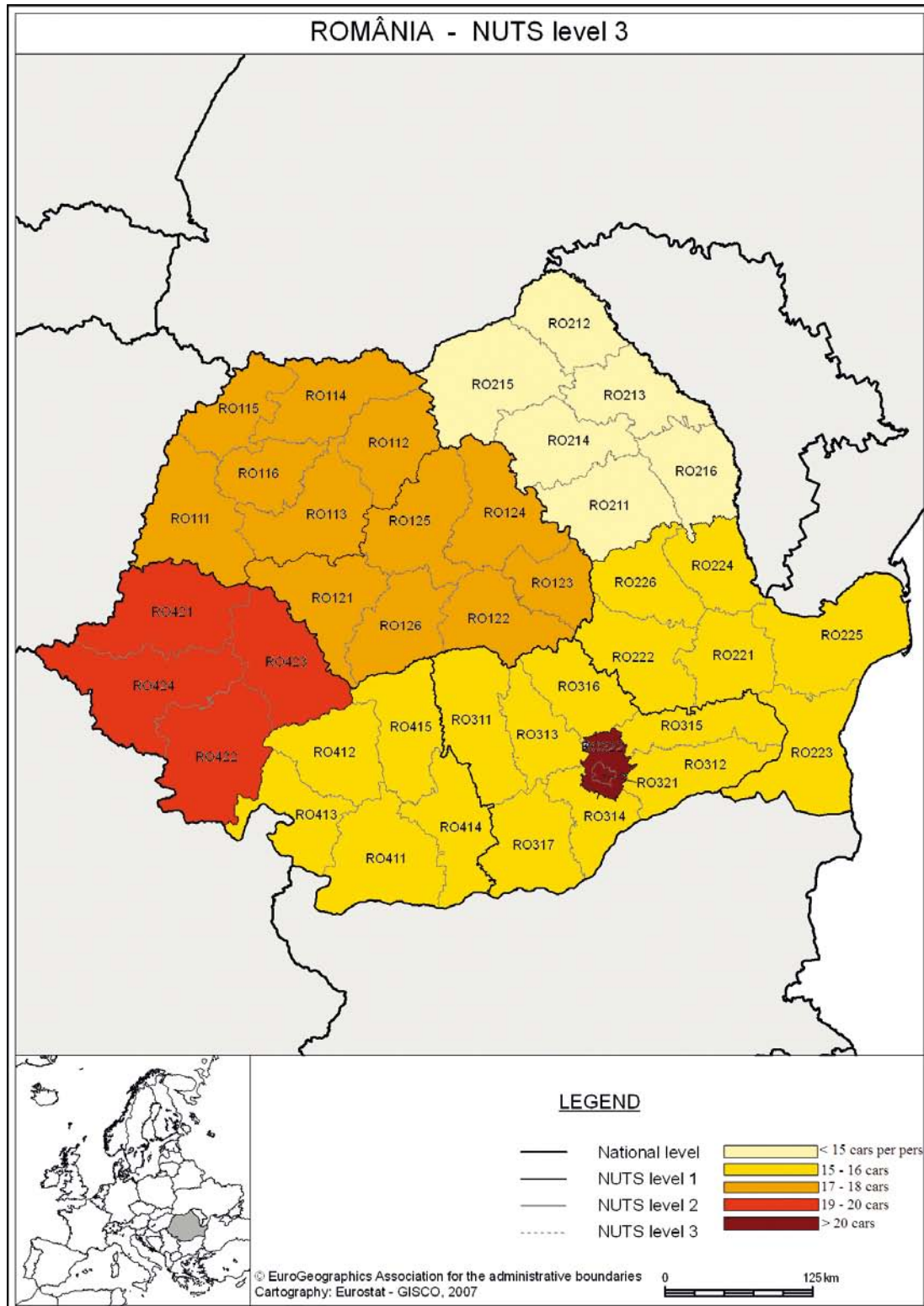
Figure: Number of cars per hundred inhabitants in Bulgaria (in 2008)



*Data only available at the NUTS2 level

Source: Eurostat Online Database

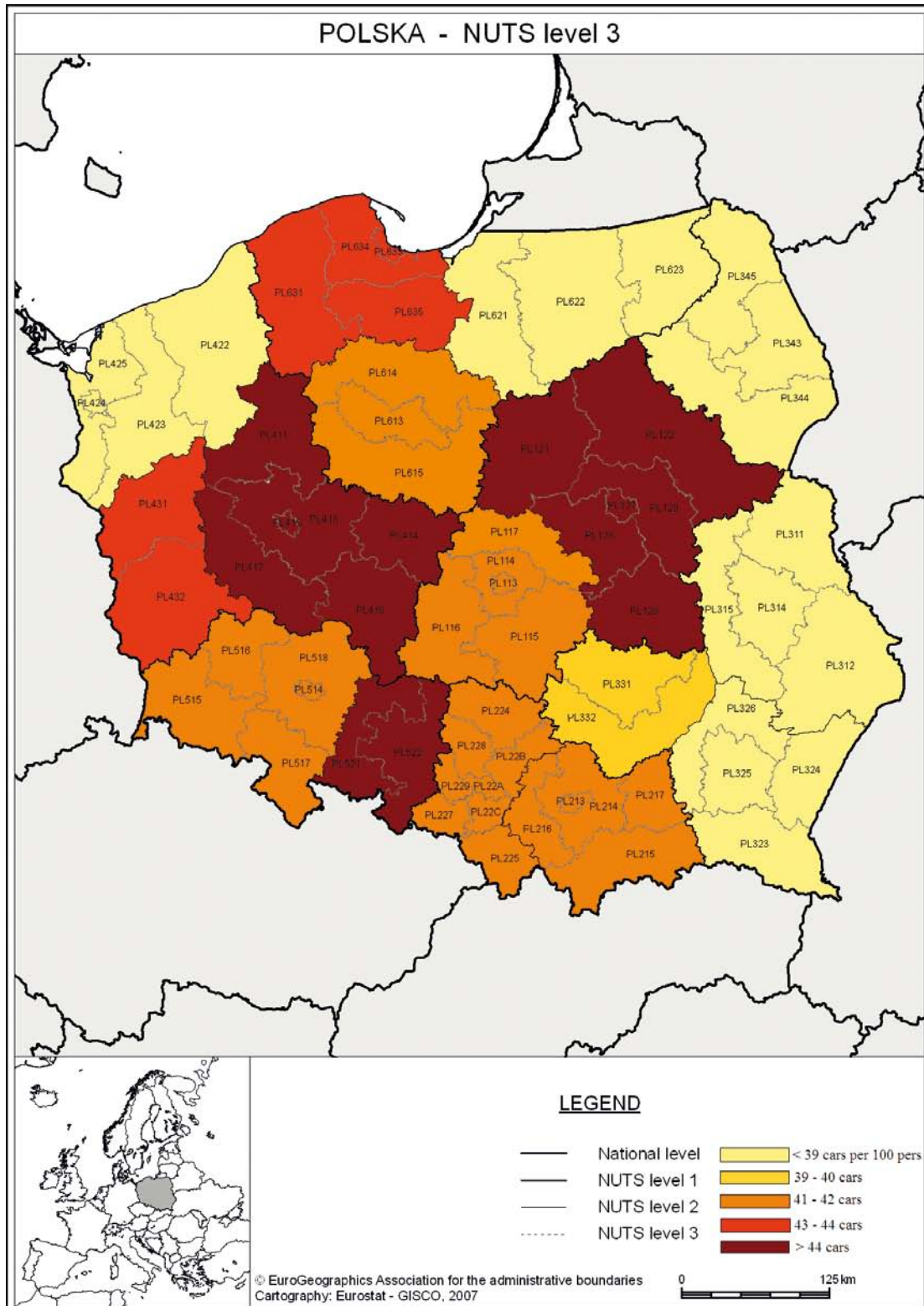
Figure: Number of cars per hundred inhabitants in Romania (in 2008)



*Data only available at the NUTS2 level

Source: Eurostat Online Database

Figure: Number of cars per hundred inhabitants in Poland (in 2008)



*Data only available at the NUTS2 level

Source: Eurostat Online Database

Table : Car ownership in Bulgaria (in 2008; number of cars per hundred inhabitants)

NUTS code	Region	Car ownership
	Bulgaria	31
BG31	Severozapaden	26
BG32	Severen tsentralen	26
BG33	Severoiztochen	30
BG34	Yugoiztochen	28
BG41	Yugozapaden	40
BG42	Yuzhen tsentralen	27

Source: Eurostat Online Database

Table : Car ownership in Poland (in 2008; number of cars per hundred inhabitants)

NUTS code	Region	Car ownership
	Poland	42
PL11	Lódzkie	41
PL12	Mazowieckie	49
PL21	Malopolskie	41
PL22	Slaskie	41
PL31	Lubelskie	38
PL32	Podkarpackie	37
PL33	Swietokrzyskie	39
PL34	Podlaskie	37
PL41	Wielkopolskie	49
PL42	Zachodniopomorskie	38
PL43	Lubuskie	44
PL51	Dolnoslaskie	42
PL52	Opolskie	45
PL61	Kujawsko-Pomorskie	41
PL62	Warminsko-Mazurskie	37
PL63	Pomorskie	43

Source: Eurostat Online Database

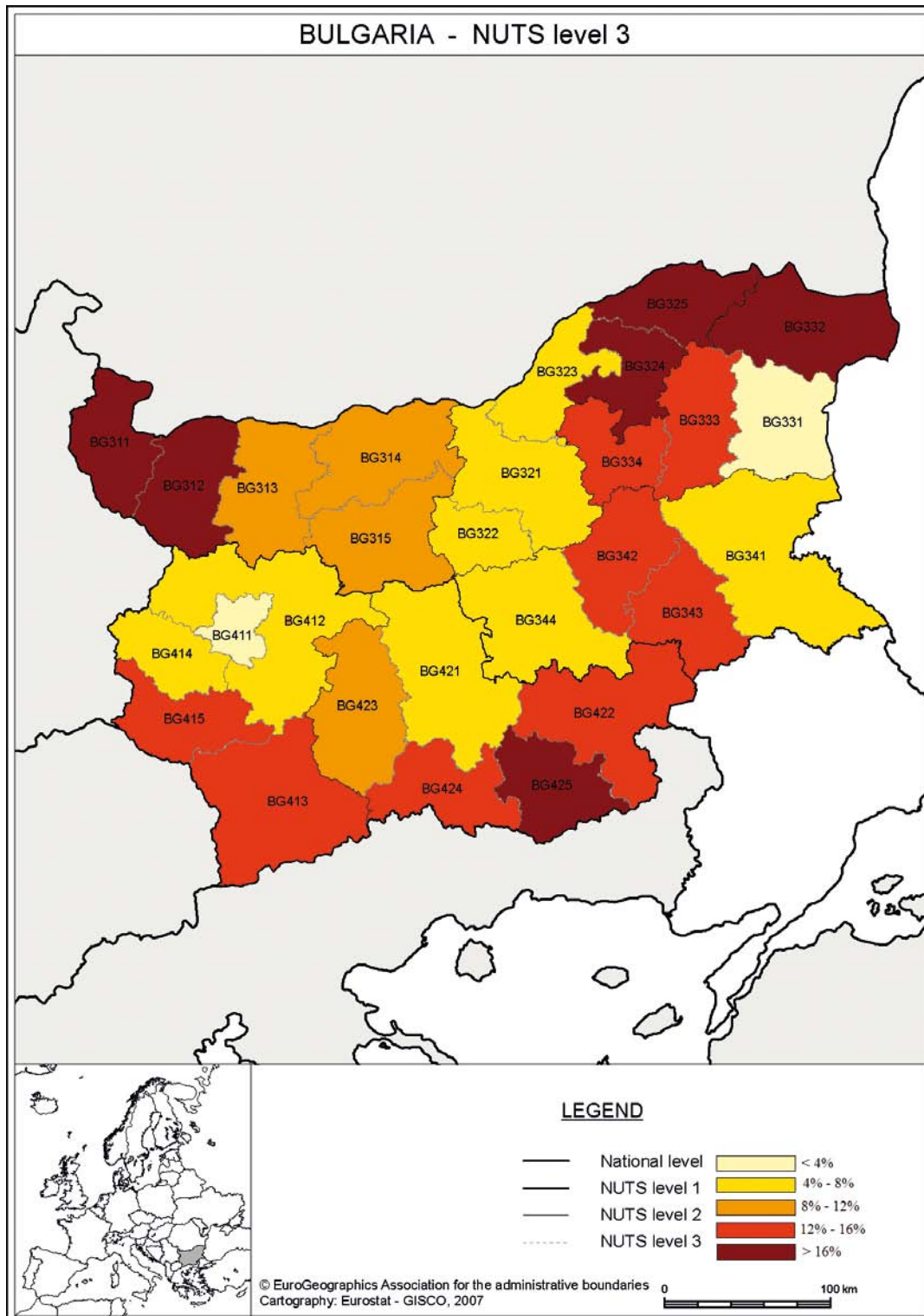
Table : Car ownership in Romania (in 2008; number of cars per hundred inhabitants)

NUTS code	Region	Car ownership
	Romania	19
RO11	Nord-Vest	18
RO12	Centru	18
RO21	Nord-Est	11
RO22	Sud-Est	15
RO31	Sud — Muntenia	15
RO32	Bucuresti — Ilfov	47
RO41	Sud-Vest Oltenia	15
RO42	Vest	19

Source: Eurostat Online Database

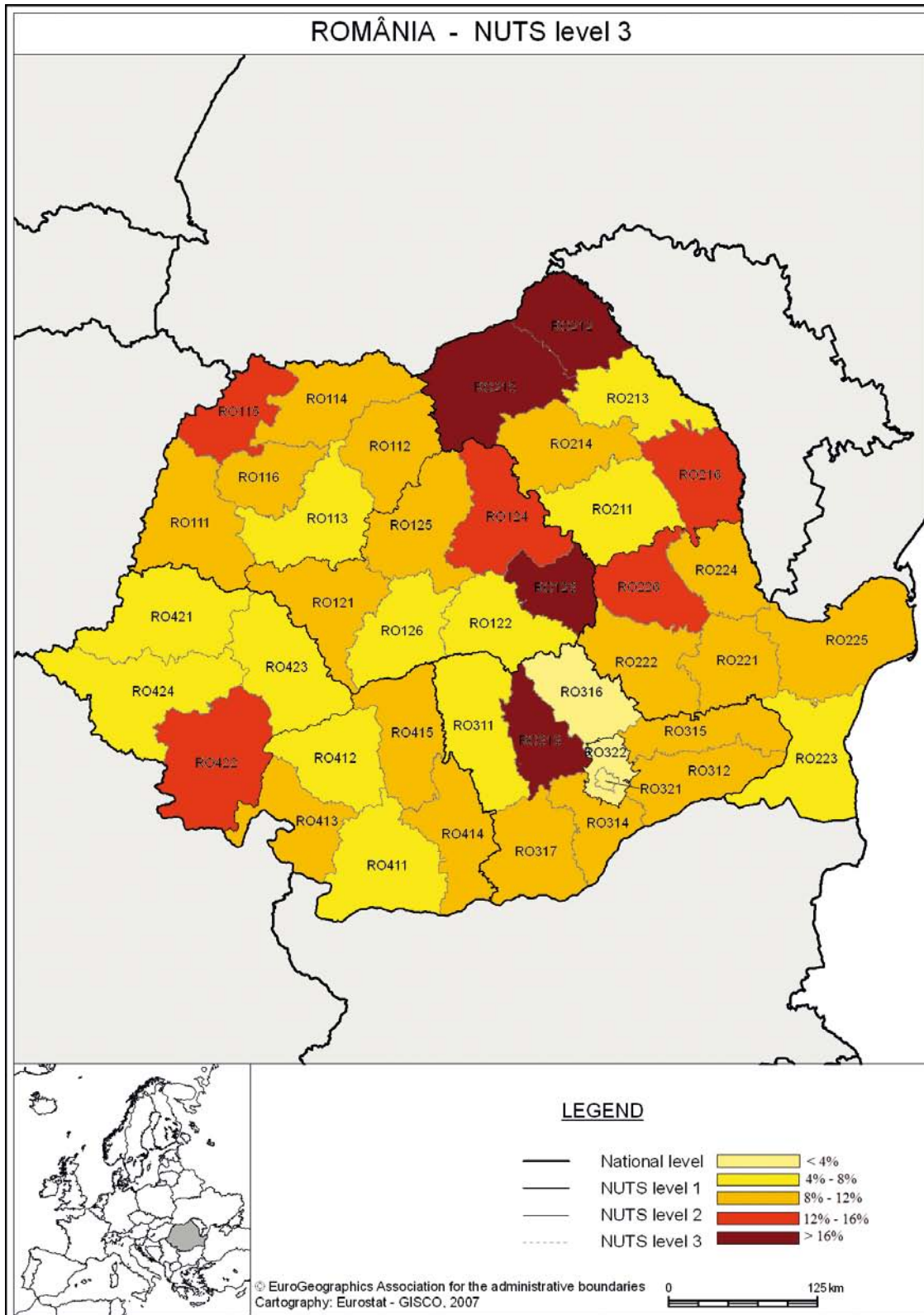
7.7. Regional Importance of the Agricultural Sector

Figure: Share of agriculture in GVA in Bulgaria (in 2007; %)



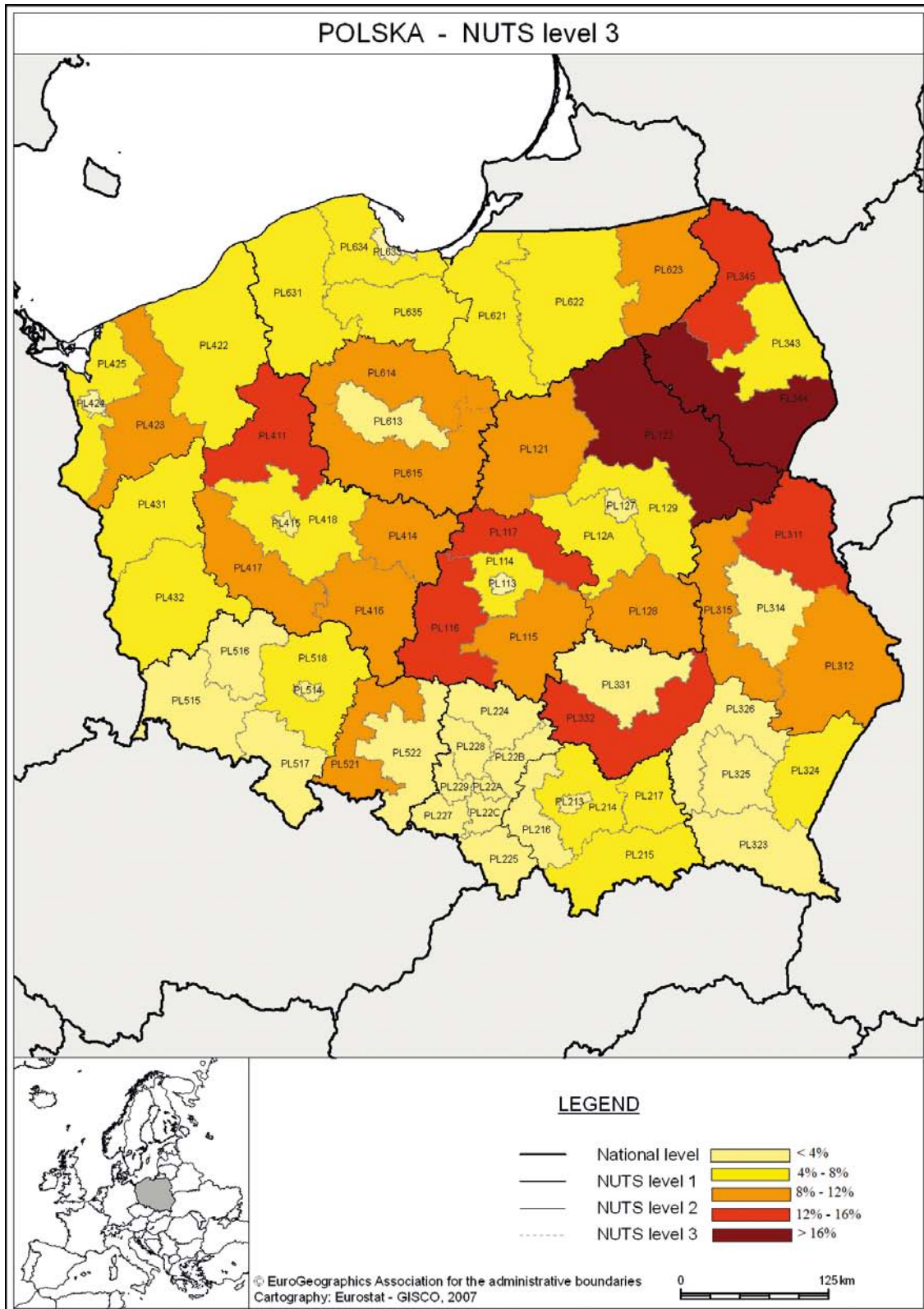
Source: Eurostat Online Database

Figure: Share of agriculture in GVA in Romania (in 2007; %)



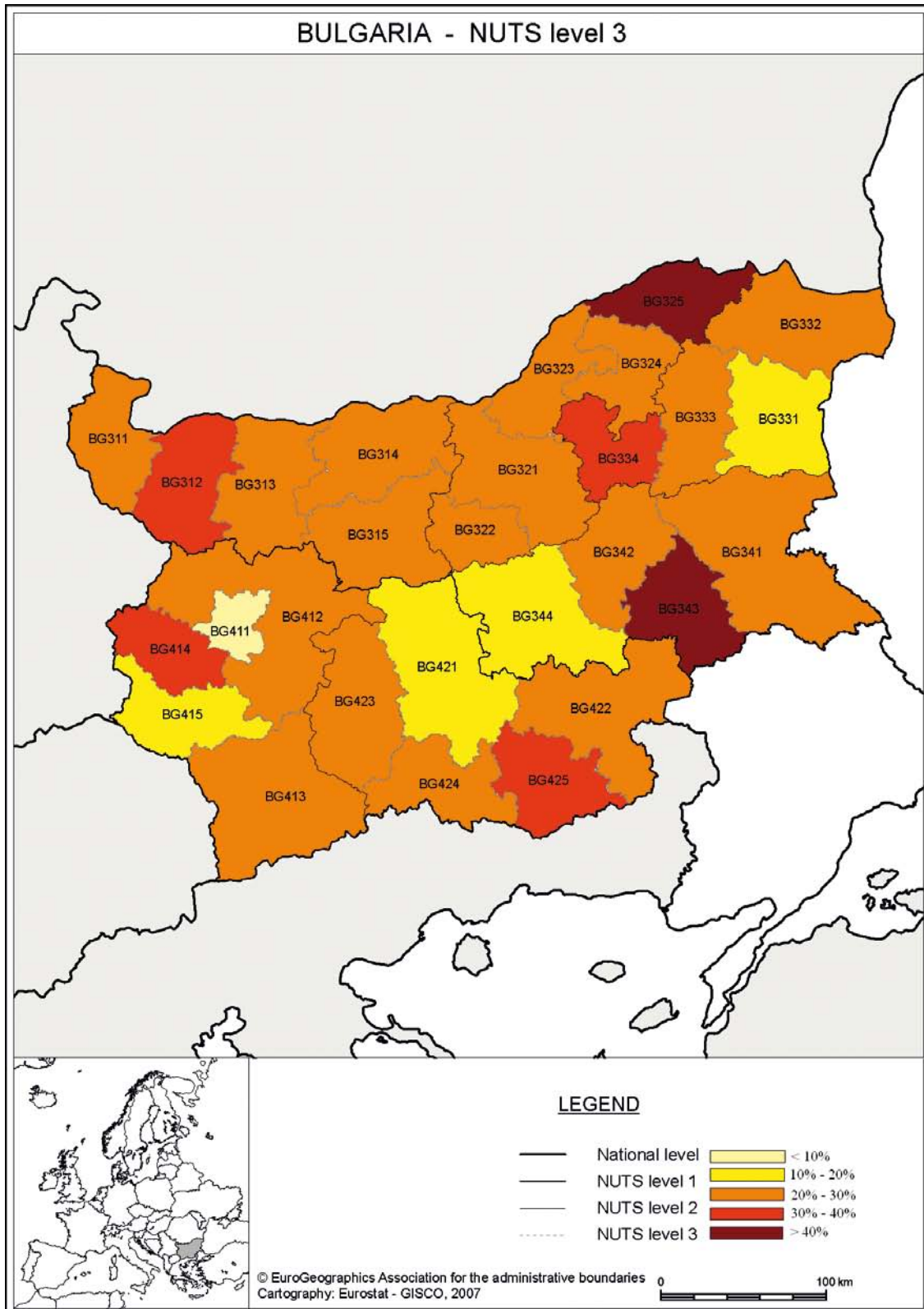
Source: Eurostat Online Database

Figure: Share of agriculture in GVA in Poland (in 2007; %)



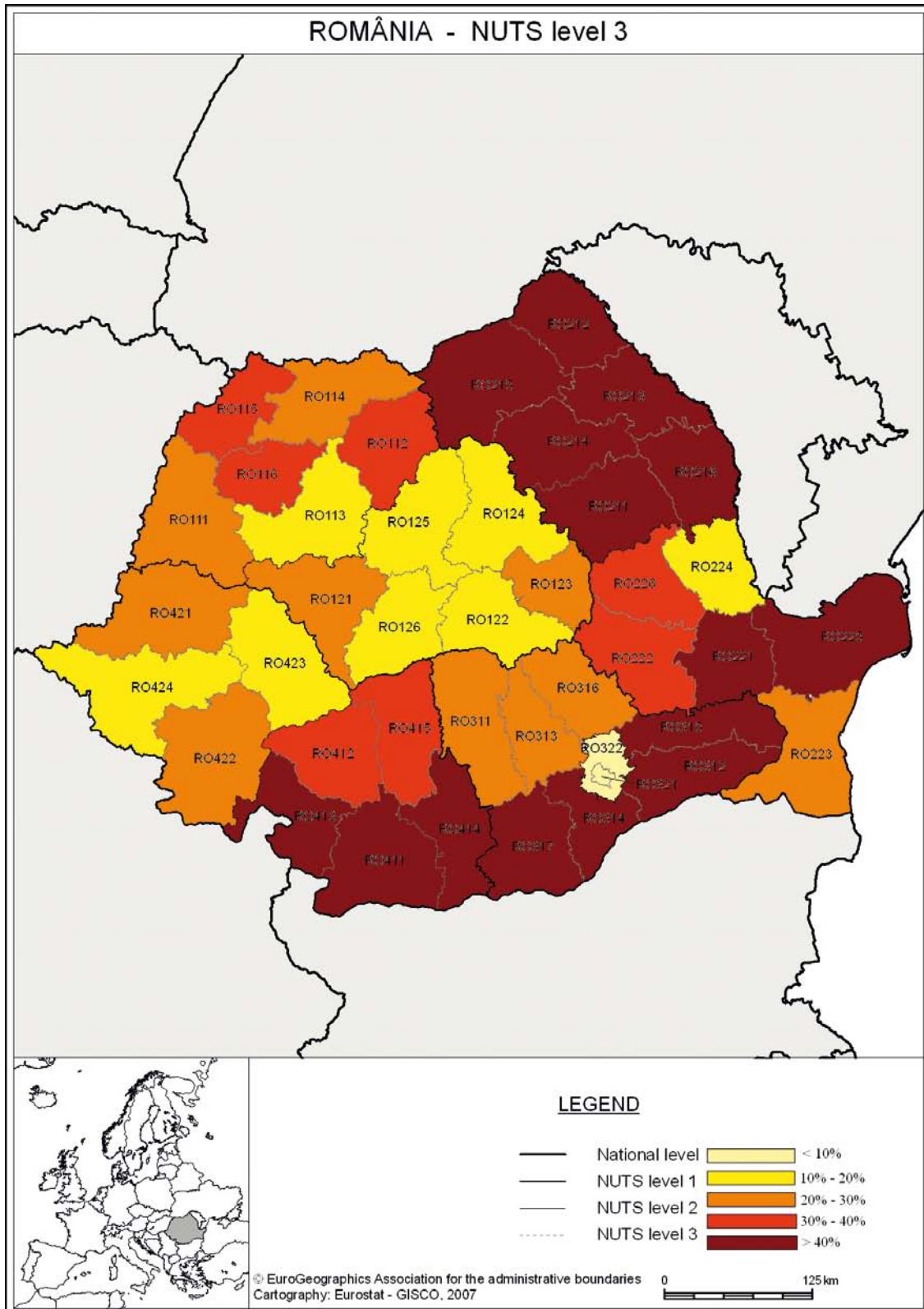
Source: Eurostat Online Database

Figure: Share of agriculture in employment in Bulgaria (in 2007; %)



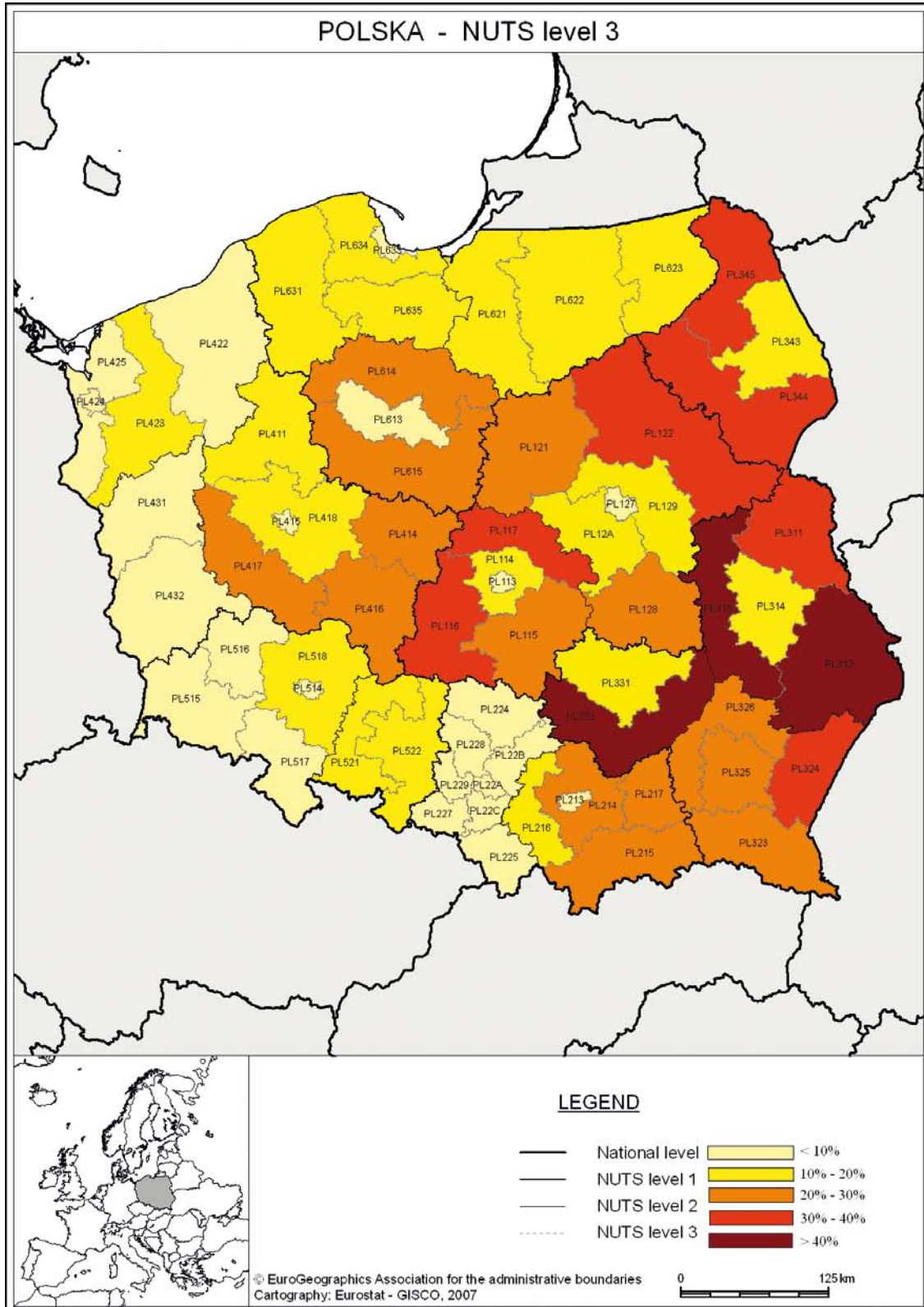
Source: Eurostat Online Database

Figure: Share of agriculture in employment in Romania (in 2007; %)



Source: Eurostat Online Database

Figure: Share of agriculture in employment in Poland (in 2007; %)



Source: Eurostat Online Database

Table: Regional share of the agricultural sector in GVA in Bulgaria (2007; %)

NUTS code	Region	Agricultural GVA	NUTS code	Region	Agricultural GVA
	Bulgaria	6,2	BG34	Yugoiztochen	7,5
BG31	Severozapaden	12,3	BG341	Burgas	5,8
BG311	Vidin	19,1	BG342	Sliven	12,1
BG312	Montana	17,0	BG343	Yambol	15,8
BG313	Vratsa	10,1	BG344	Stara Zagora	6,0
BG314	Pleven	11,1	BG41	Yugozapaden	2,3
BG315	Lovech	9,7	BG411	Sofia (stolitsa)	0,3
BG32	Severen tsentralen	10,6	BG412	Sofia	6,6
BG321	Veliko Tarnovo	7,8	BG413	Blagoevgrad	13,5
BG322	Gabrovo	4,6	BG414	Pernik	6,8
BG323	Ruse	7,9	BG415	Kyustendil	15,8
BG324	Razgrad	19,3	BG42	Yuzhen tsentralen	10,5
BG325	Silistra	24,3	BG421	Plovdiv	6,4
BG33	Severoztochen	7,7	BG422	Haskovo	13,2
BG331	Varna	2,7	BG423	Pazardzhik	11,2
BG332	Dobrich	18,0	BG424	Smolyan	13,8
BG333	Shumen	13,4	BG425	Kardzhali	25,1
BG334	Targovishte	14,5			

Source: Eurostat Online Database

Table: Regional share of the agricultural sector in GVA in Poland (2007; %)

NUTS code	Region	Agricultural GVA	NUTS code	Region	Agricultural GVA
	Poland	4,3	PL31	Lubelskie	7,9
PL11	Lódzkie	6,5	PL311	Bialski	13,9
PL113	Miasto Łódź	0,1	PL312	Chelmsko-zamojski	11,2
PL114	Lódzki	5,7	PL314	Lubelski	3,6
PL115	Piotrkowski	8,8	PL315	Pulawski	8,6
PL116	Sieradzki	14,3	PL32	Podkarpackie	3,5
PL117	Skierniewicki	14,7	PL323	Krosnienski	3,9
PL12	Mazowieckie	3,8	PL324	Przemyski	5,7
PL121	Ciechanowsko-plocki	11,6	PL325	Rzeszowski	2,7
PL122	Ostrolecko-siedlecki	19,0	PL326	Tarnobrzesci	2,8
PL127	Miasto Warszawa	0,0	PL33	Swietokrzyskie	6,3
PL128	Radomski	11,2	PL331	Kielecki	3,3
PL129	Warszawski-wschodni	6,8	PL332	Sandomiersko-jedrzejewski	12,1
PL12A	Warszawski-zachodni	4,7	PL34	Podlaskie	10,7
PL21	Malopolskie	3,0	PL343	Bialostocki	5,3
PL213	Miasto Kraków	0,1	PL344	Lomzynski	17,0
PL214	Krakowski	6,5	PL345	Suwalski	14,5
PL215	Nowosadecki	6,0	PL41	Wielkopolskie	6,5
PL216	Oswiecimski	2,8	PL411	Pilski	12,6
PL217	Tarnowski	6,0	PL414	Koninski	11,5
PL22	Slaskie	1,1	PL415	Miasto Poznan	0,1
PL224	Czestochowski	3,7	PL416	Kaliski	9,4
PL225	Bielski	1,4	PL417	Leszczynski	10,2
PL227	Rybnicki	1,2	PL418	Poznanski	6,1
PL228	Bytomski	1,5	PL42	Zachodniopomorskie	4,2
PL229	Gliwicki	0,7	PL422	Koszalinski	5,7
PL22A	Katowicki	0,1	PL423	Stargardzki	9,4
PL22B	Sosnowiecki	1,2	PL424	Miasto Szczecin	0,1
PL22C	Tyski	0,8	PL425	Szczecinski	5,0

To be continued

Table: Regional share of the agricultural sector in GVA in Poland (2007; %) continuation

NUTS code	Region	Agricultural GVA	NUTS code	Region	Agricultural GVA
PL43	Lubuskie	4,4	PL61	Kujawsko-Pomorskie	5,9
PL431	Gorzowski	4,9	PL613	Bydgosko-Torunski	1,5
PL432	Zielonogórski	4,0	PL614	Grudziadzki	10,7
PL51	Dolnoslaskie	2,3	PL615	Wloclawski	9,3
PL514	Miasto Wroclaw	0,1	PL62	Warminsko-Mazurskie	7,8
PL515	Jeleniogórski	3,8	PL621	Elblaski	7,6
PL516	Legnicko-Glogowski	1,7	PL622	Olsztynski	6,8
PL517	Walbrzyski	2,9	PL623	Elcki	11,0
PL518	Wroclawski	6,0	PL63	Pomorskie	2,9
PL52	Opolskie	5,3	PL631	Slupski	6,5
PL521	Nyski	8,6	PL633	Trojmiejski	0,1
PL522	Opolski	3,8	PL634	Gdanski	5,0
			PL635	Starogardzki	5,3

Source: Eurostat Online Database

Table: Regional share of the agricultural sector in GVA in Romania (2007; %)

NUTS code	Region	Agricultural GVA	NUTS code	Region	Agricultural GVA
	Romania	6,5	RO31	Sud — Muntenia	8,0
RO11	Nord-Vest	8,7	RO311	Arges	6,2
RO111	Bihor	9,4	RO312	Calarasi	12,0
RO112	Bistrita-Nasaud	11,6	RO313	Dâmbovita	15,7
RO113	Cluj	5,0	RO314	Giurgiu	11,0
RO114	Maramures	10,7	RO315	Ialomita	10,2
RO115	Satu Mare	12,9	RO316	Prahova	3,5
RO116	Salaj	10,4	RO317	Teleorman	9,2
RO12	Centru	8,4	RO32	Bucuresti — Ilfov	0,3
RO121	Alba	8,4	RO321	Bucuresti	0,0
RO122	Brasov	5,2	RO322	Ilfov	2,7
RO123	Covasna	18,3	RO41	Sud-Vest Oltenia	7,3
RO124	Harghita	12,7	RO411	Dolj	6,2
RO125	Mures	9,7	RO412	Gorj	5,9
RO126	Sibiu	5,7	RO413	Mehedinti	8,0
RO21	Nord-Est	10,4	RO414	Olt	9,7
RO211	Bacau	6,6	RO415	Vâlcea	8,2
RO212	Botosani	17,4	RO42	Vest	7,6
RO213	Iasi	5,5	RO421	Arad	7,4
RO214	Neamt	9,7	RO422	Caras-Severin	14,4
RO215	Suceava	16,9	RO423	Hunedoara	5,3
RO216	Vaslui	12,7	RO424	Timis	6,9
RO22	Sud-Est	8,0			
RO221	Braila	10,6			
RO222	Buzau	10,0			
RO223	Constanta	4,3			
RO224	Galati	8,5			
RO225	Tulcea	8,5			
RO226	Vrancea	13,9			

Source: Eurostat Online Database

Table: Regional share of the agricultural sector in employment in Bulgaria (2007; %)

NUTS code	Region	Agricultural employment	NUTS code	Region	Agricultural employment
	Bulgaria	19,7	BG34	Yugoiztochen	24,7
BG31	Severozapaden	27,3	BG341	Burgas	21,2
BG311	Vidin	22,4	BG342	Sliven	26,2
BG312	Montana	35,8	BG343	Yambol	52,1
BG313	Vratsa	23,2	BG344	Stara Zagora	13,1
BG314	Pleven	24,9	BG41	Yugozapaden	9,8
BG315	Lovech	28,0	BG411	Sofia (stolitsa)	2,3
BG32	Severen tsentralen	27,8	BG412	Sofia	27,5
BG321	Veliko Tarnovo	26,6	BG413	Blagoevgrad	24,5
BG322	Gabrovo	20,2	BG414	Pernik	33,2
BG323	Ruse	20,2	BG415	Kyustendil	18,8
BG324	Razgrad	29,6	BG42	Yuzhen tsentralen	23,6
BG325	Silistra	50,9	BG421	Plovdiv	20,0
BG33	Severoiztochen	20,9	BG422	Haskovo	25,8
BG331	Varna	11,1	BG423	Pazardzhik	28,1
BG332	Dobrich	24,8	BG424	Smolyan	22,0
BG333	Shumen	26,3	BG425	Kardzhali	32,2
BG334	Targovishte	38,8			

Source: Eurostat Online Database

Table: Regional share of the agricultural sector in employment in Poland (2007; %)

NUTS code	Region	Agricultural employment	NUTS code	Region	Agricultural employment
	Poland	14,7	PL31	Lubelskie	33,6
PL11	Lódzkie	17,8	PL311	Bialski	37,3
PL113	Miasto Łódź	0,7	PL312	Chelmsko-zamojski	42,0
PL114	Lódzki	14,3	PL314	Lubelski	20,0
PL115	Piotrkowski	23,4	PL315	Pulawski	41,2
PL116	Sieradzki	31,0	PL32	Podkarpackie	25,4
PL117	Skierniewicki	34,3	PL323	Krosnienski	23,9
PL12	Mazowieckie	11,1	PL324	Przemyski	31,6
PL121	Ciechanowsko-plocki	23,1	PL325	Rzeszowski	24,5
PL122	Ostrolecko-siedlecki	31,8	PL326	Tarnobrzesci	23,8
PL127	Miasto Warszawa	0,4	PL33	Swietokrzyskie	31,3
PL128	Radomski	25,6	PL331	Kielecki	18,2
PL129	Warszawski-wschodni	15,4	PL332	Sandomiersko-jedrzejowski	49,4
PL12A	Warszawski-zachodni	12,9	PL34	Podlaskie	27,1
PL21	Malopolskie	16,1	PL343	Bialostocki	14,5
PL213	Miasto Kraków	0,8	PL344	Lomzynski	38,6
PL214	Krakowski	29,0	PL345	Suwalski	33,8
PL215	Nowosadecki	28,1	PL41	Wielkopolskie	15,0
PL216	Oswiecimski	12,5	PL411	Pilski	17,4
PL217	Tarnowski	25,6	PL414	Koninski	23,7
PL22	Slaskie	3,2	PL415	Miasto Poznan	0,6
PL224	Czestochowski	7,8	PL416	Kaliski	23,3
PL225	Bielski	6,4	PL417	Leszczynski	20,8
PL227	Rybnicki	3,4	PL418	Poznanski	11,5
PL228	Bytomski	2,7	PL42	Zachodniopomorskie	7,1
PL229	Gliwicki	1,5	PL422	Koszalinski	9,5
PL22A	Katowicki	0,2	PL423	Stargardzki	13,0
PL22B	Sosnowiecki	2,9	PL424	Miasto Szczecin	0,6
PL22C	Tyski	3,0	PL425	Szczecinski	9,0

To be continued

Table: Regional share of the agricultural sector in employment in Poland (2007; %) continuation

NUTS code	Region	Agricultural employment	NUTS code	Region	Agricultural employment
PL43	Lubuskie	9,7	PL61	Kujawsko-Pomorskie	17,1
PL431	Gorzowski	9,7	PL613	Bydgosko-Torunski	5,1
PL432	Zielonogórski	9,7	PL614	Grudziadzki	26,9
PL51	Dolnoslaskie	6,3	PL615	Wlodelawski	25,0
PL514	Miasto Wroclaw	0,5	PL62	Warmińsko-Mazurskie	13,0
PL515	Jeleniogórski	7,9	PL621	Elblaski	14,0
PL516	Legnicko-Glogowski	6,4	PL622	Olsztynski	10,5
PL517	Walbrzyski	6,7	PL623	Elcki	17,5
PL518	Wroclawski	14,6	PL63	Pomorskie	8,6
PL52	Opolskie	14,8	PL631	Slupski	12,4
PL521	Nyski	19,0	PL633	Trojmiejski	0,9
PL522	Opolski	12,5	PL634	Gdanski	16,0
			PL635	Starogardzki	14,7

Source: Eurostat Online Database

Table: Regional share of the agricultural sector in employment in Romania (2007; %)

NUTS code	Region	Agricultural Employment	NUTS code	Region	Agricultural Employment
	Romania	30,3	RO31	Sud — Muntenia	39,0
RO11	Nord-Vest	27,3	RO311	Arges	24,1
RO111	Bihor	25,5	RO312	Calarasi	61,3
RO112	Bistrita-Nasaud	37,5	RO313	Dâmbovita	23,6
RO113	Cluj	17,9	RO314	Giurgiu	51,3
RO114	Maramures	25,4	RO315	Ialomita	62,3
RO115	Satu Mare	40,0	RO316	Prahova	24,5
RO116	Salaj	31,5	RO317	Teleorman	55,9
RO12	Centru	17,0	RO32	Bucuresti — Ilfov	1,1
RO121	Alba	27,6	RO321	Bucuresti	0,4
RO122	Brasov	12,1	RO322	Ilfov	7,6
RO123	Covasna	23,1	RO41	Sud-Vest Oltenia	42,2
RO124	Harghita	16,0	RO411	Dolj	44,3
RO125	Mures	17,7	RO412	Gorj	34,2
RO126	Sibiu	10,9	RO413	Mehedinti	46,9
RO21	Nord-Est	48,7	RO414	Olt	50,4
RO211	Bacau	44,5	RO415	Vâlcea	33,6
RO212	Botosani	41,9	RO42	Vest	18,6
RO213	Iasi	45,3	RO421	Arad	20,1
RO214	Neamt	55,7	RO422	Caras-Severin	21,6
RO215	Suceava	45,0	RO423	Hunedoara	13,9
RO216	Vaslui	61,8	RO424	Timis	19,5
RO22	Sud-Est	32,4			
RO221	Braila	40,6			
RO222	Buzau	37,6			
RO223	Constanta	29,1			
RO224	Galati	17,1			
RO225	Tulcea	42,8			
RO226	Vrancea	38,1			

Source: Eurostat Online Database

7.8. Statistical Analysis: Principal Component Analysis

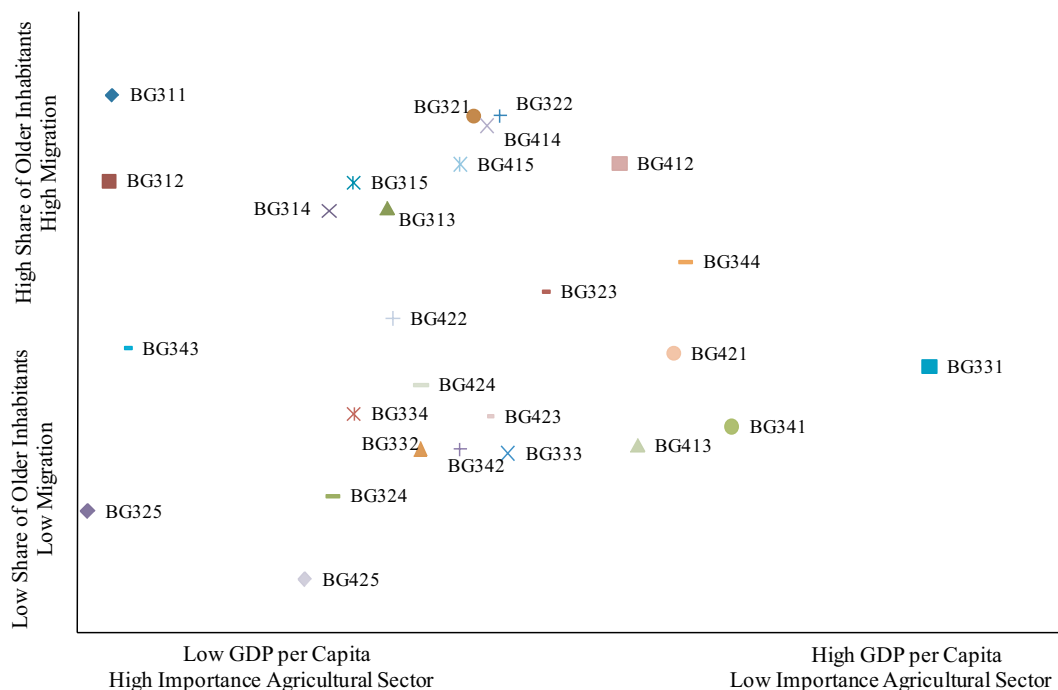
In order to visualize the differences between rural regions within one country, we perform a Principal Component Analysis (PCA) for each country. The central idea of PCA is to reduce the dimensionality of a data set consisting of a large number of highly correlated variables, while retaining as much as possible of the variation present in the dataset. This is achieved by transforming the original data into a new set of variables, the principal components (PC), which are uncorrelated and determined such that the first few retain most of the variation present in all original variables. The results of our analysis show that for the three countries, the eight indicators that we presented in this report can be summarized in two principal components:

PC1 is strongly positively correlated with GDP per capita and negatively correlated with the importance of agriculture in the overall economy (share of agricultural labour and agricultural GVA). PC2 is strongly positively correlated with the share of persons older than 65 years and negatively correlated with the change in population (meaning regions where there is high out-migration have a high PC2 value).

The figures below present the differences between rural regions in respectively Bulgaria, Poland and Romania based on PC1 and PC2.

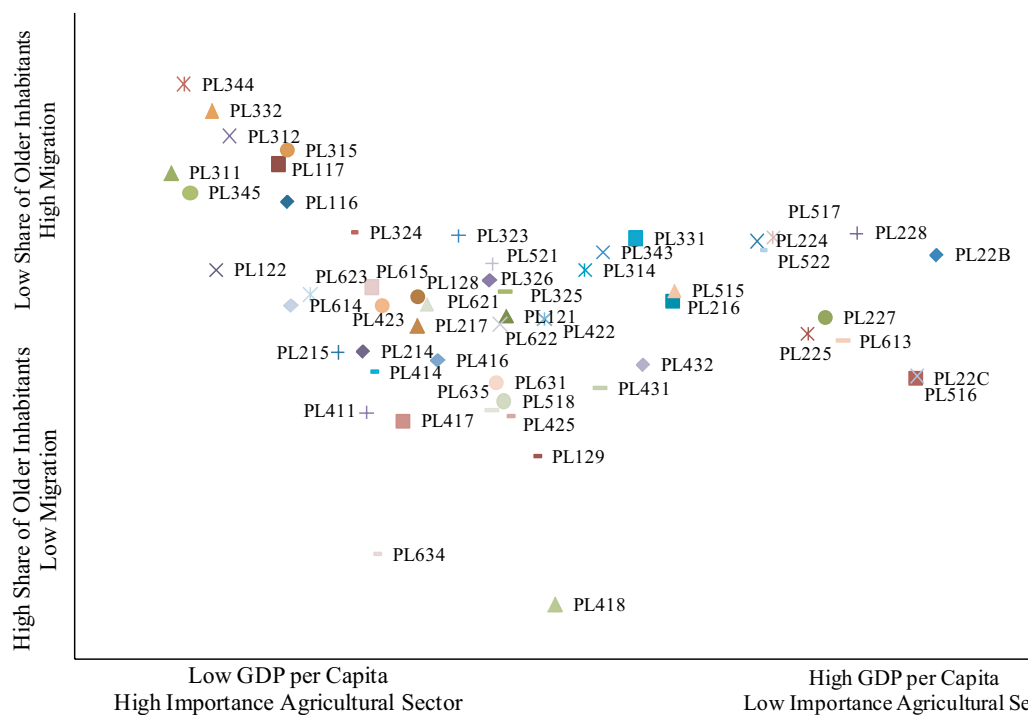
- In Bulgaria, we find that the mountainous regions close to the border with Romania, such as Vidin (BG311) and Montana (BG312), are the worst off. GDP per capita is low in these regions, while the agricultural sector is still very important, there is large migration out the region and the share of old inhabitants is high. In contrast, the regions close to the Black Sea, Varna (BG331) and Burgas (BG341) are richer, have relatively unimportant agricultural sector, low migration from region (or even in-migration) and a low share share of older inhabitants. In addition, there are also regions, such as Silistra (BG325) and Kardzhali (BG425), which are poor and have an important agricultural sector but have low migration out the region and a low share of older inhabitants.
- In Poland, the regions, such as Lomzynski (PL344), Bialski (PL311) and Chelmsko-Zamojski (PL312) that are close to the border with Belarus and Ukraine, are the poorest regions and they also have the largest share of older inhabitants and migration out the region. Similar results hold for some regions in the middle of Poland, such as for example Sieradzki (PL116), Skierniewicki (PL117) and Sandomiersko-jedrzejowski (PL332). The regions that are the best off are the regions close to the border with the Czech Republic, such as Opolski (PL522) and legnicko-Glogowski (PL516), and Bydgosko-Torunski (PL613) and, the rural regions in the predominantly urban voivodeship Slaskie (regions Czestochowski (PL224) and Bielski (PL225)).
- In Romania, the regions close to the border with Bulgaria are the worst off (regions Giugiu (RO314), Calarasi (RO312) and Olt (RO414)). In contrast, regions located in central Romania (regions Sibiu (RO126) and Brasov (RO122)) and close to the border of Hungary (Timis (RO424)) are the best off. In addition, also Constanta (RO223), the region close to the Black Sea, is a region which is relatively well off.

Figure : Classification of the rural regions in Bulgaria based on PCA



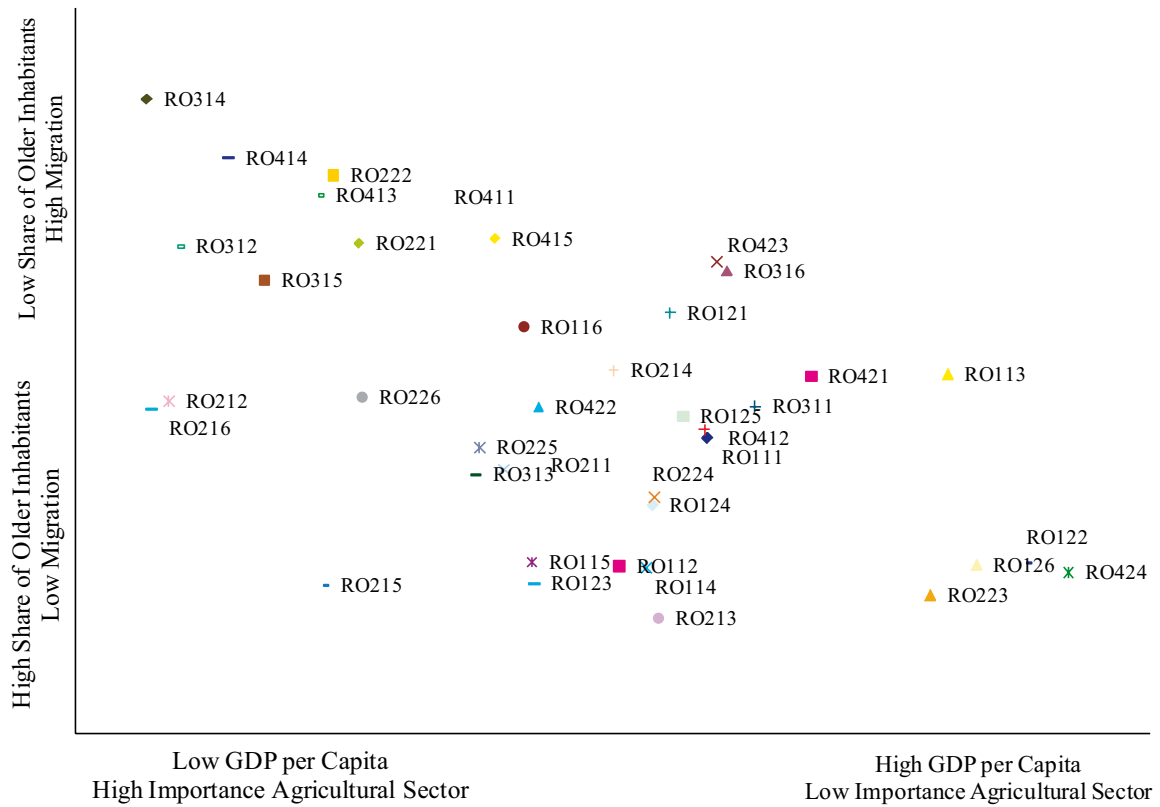
Source: Own Calculations based on Eurostat Online Database

Figure: Classification of the rural regions in Poland based on PCA



Source: Own Calculations based on Eurostat Online Database

Figure : Classification of the rural regions in Romania based on PCA



Source: Own Calculations based on Eurostat Online Database

7.9. Foreign Direct Investment in the Grocery Sales

Table: Share of the largest retailers in total grocery sales in Poland (%)

	2005	2006	2007	2008	2009
Jeronimo Martins (FDI)	4,3	5,2	6,5	8,4	8,9
Carrefour Polska Sp zoo (FDI)	3,3	3,6	4,7	5,1	6,4
Tesco Polska Sp zoo (FDI)	3,9	4,6	5,4	5,4	6
Real Sp zoo (FDI)	2,3	2,7	3,8	3,7	4,5
Auchan Sp zoo (FDI)	3,6	3,9	3,8	4,2	4,4
ZKiP Lewiatan '94 Holding SA	2,9	3,1	3,2	3,4	3,4
Lidl Polska Sp zoo (FDI)	1,4	1,7	2	2,3	2,6
Eurocash SA (FDI)	1,5	1,7	1,7	1,8	2,1
Others	76,8	73,5	68,9	65,7	61,7

Source: Euromonitor (2010)

Table: Share of the largest retailers in total grocery sales in Bulgaria (%)

	2005	2006	2007	2008	2009
Billa Bulgaria EOOD (FDI)	3,5	4,1	4,4	5,2	5,7
Bolyari AD	1,3	2,2	3,1	3,6	4,2
Van Holding AD (FDI)	2,5	2,7	3,1	3,7	3,7
CBA Bulgaria AD (FDI)	1,7	2,8	2,9	3,2	3,2
Kaufland Bulgaria EOOD (FDI)	–	1	1,5	2	2,2
VP Market Bulgaria EOOD (FDI)	0,2	1	1,9	2,3	2,2
Metro Cash & Carry Bulgaria EOOD (FDI)	0,7	1,8	1,7	1,7	1,7
Nova Familia 2007 EOOD (FDI)	–	–	0,6	0,7	0,6
Others	90,1	84,4	80,8	77,6	76,5

Source: Euromonitor (2010)

Table: Share of the largest retailers in total grocery sales in Romania (%)

	2005	2006	2007	2008	2009
Carrefour Romania (FDI)	5,3	5	6,1	6,8	8,4
Hiproma SA Real Hypermarket Romania SRL (FDI)	0	0,9	3,1	4,9	5,4
Kaufland Romania SCS (FDI)	0,2	2,1	5,4	5,2	5
Cora Romania (FDI)	2	2,7	3,4	3,7	4,1
Plus Discount Romania SCS (FDI)	0,3	0,9	1,6	2,9	3,4
Rewe Romania SRL (FDI)	1,3	2,1	2,1	2,2	2,9
Billa Romania SRL (FDI)	2,8	2,7	2,7	2,5	2,8
SC MGV Distri-Hiper SA Rom Food SRL	–	–	–	–	2,5
Others	88,1	83,6	75,6	71,8	68

Source: Euromonitor (2010)

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