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Polit-Economic Analysis of Policy-Making in Ukraine

Modelling and Empirical Measurement of the Collective Decisions on the Example of Agricultural Policy

Nino Chkoidze

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Center for international Development and Environmental Research

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Vorwort

Nino CHKOIDZE greift in ihrer Arbeit ein agrarpolitisch und transformationsökonomisch hoch interessantes Thema auf. Es geht um die Erklärung der Agrarpolitik in der Ukraine. Konkret werden die politischen, strukturellen und institutionellen Rahmenbedingungen und deren Einfluss auf die politischen Entscheidungen im Agrarsektor vor den Präsidentschaftswahlen im Jahr 2010 untersucht. Darüber hinaus werden explizit auch die Rolle und der Einfluss von Interessengruppen auf das agrarpolitische Geschehen analysiert. Für ihre Analyse greift die Autorin zum einen auf das polit-ökonomische Gleichgewichtsmodell von COLEMAN und dessen Erweiterung von HENNING/PAPPI zurück. Zum anderen nutzt sie das GROSSMAN-HELPMAN-Modell zur ökonometrischen Bestimmung der unterschiedlichen Protektionsniveaus zwischen den einzelnen Agrarprodukten. In der Ukraine, wie in vielen anderen ehemaligen Sowjetländern, werden nämlich gleichzeitig einige Produktionsrichtungen netto besteuert, während andere subventioniert werden, also eine positive Protektion aufweisen. Das bedarf einer Erklärung. Vor dem Hintergrund der oft inkonsistenten und widersprüchlichen ukrainischen Agrarpolitik ist es das Ziel der Arbeit,

- die relevanten Akteure und ihre Interaktionen in der ukrainischen Agrarpolitik zu identifizieren,
- deren Präferenzen und generelle Orientierungen im Hinblick auf agrarpolitische Problemfelder zu beleuchten und
- den Einfluss institutioneller und struktureller Faktoren auf politische Entscheidungen unter verschiedenen Szenarien zu bestimmen.

Die Arbeit bewegt sich damit im Schnittfeld von Agrarökonomie und Politikwissenschaften und möchte einen Beitrag zur rationaleren Agrarpolitikgestaltung leisten, um das bislang nicht voll ausgeschöpfte landwirtschaftliche Potenzial des Landes zu verbessern. Sie liefert auf Basis anspruchsvoller empirischer Methoden eine Reihe interessanter Detailinformationen über die schwierige Situation in einem typischen Transformationsland und ermöglicht vertiefte Einblicke in das Komplexe, oft undurchschaubare Geflecht zwischen Wirtschaft und Politik. Allen an Transformationsfragen interessierten Lesern ist die Lektüre der Arbeit zu empfehlen.

Gießen, 16.01.2018 Prof. Dr. Dr. h.c. P. Michael. Schmitz

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List of Abbreviations

AMS	Aggregate Measurement of Support
BE	Berlin Economics
BL	Bloc Lytvyn
BYuT	Bloc Yulia Tymoshenko
CAE	Collective Agricultural Enterprise
CIS	Commonwealth of Independent States
CPU	Communist Party of Ukraine
CSE	Consumer Support Estimate
DCFTA	Deep and Comprehensive Free Trade Area
EBRD	European Bank for Reconstruction and Development
EPC	Effective Protection Coefficient
EU	European Union
FA	Farmers Association
FAO	Food and Agricultural Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
FAT	Fixed Agricultural Tax
FDI	Foreign Direct Investments
FSU	Former Soviet Union
FTA	Free Trade Agreement
GA	Grain Association
G-H	Grossman-Helpman Model
GDP	Gross Domestic Product
GG	Given Governance
GIS	Geographical Informational Systems
GSSE	General Services Support Estimate
GVA	Gross Value Added
HS	Harmonized System
IER	Institute for Economic Research and Policy Consulting
IMF	International Monetary Fund
KMO	Kaiser-Meyer-Olkin
LIML	Limited Information Maximum Likelihood
MFN	Most Favoured Nation
MoA	Ministry of Agrarian Policy
MoE	Ministry of Economy
MPS	Market Price Support
MSA	Measure of Sampling Adequacy
NF	No Feedback Effect
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OU	Our Ukraine-People's Self Defence
PA	Poultry Association
PAC	Political Action Committee
PAE	Poor Agrarian Economy
PCA	Principal Component Analysis
PERT	Political Economic Research Transaction
PEST	Political Economic Seeking Transfer
PI	Perfect Implementation
PoR	Party of Regions
PPF	Political Preference Function

PSE	Producer Support Estimate
RIE	Rich Industrial Economy
SLB	State Land Bank
SPS	Sanitary and Phytosanitary Measures
ST	Single Tax
TRAINS	Trade Analysis Information System
TRQ	Tariff Rate Quota
UAH	Ukrainian Hryvnia
UCAB	Association “Ukrainian Agribusiness Club”
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
VAT	Value Added Tax
WTO	World Trade Organization
2SLS	Two-Stage-Least-Squares

1 Introduction

1.1 Problem Statement and Objectives

The agri-food industry is an important economic sector for Ukraine. Agricultural production amounts to about one tenth of the Gross Value Added (GVA) of the country. The external dimension of the sector plays an increasingly significant role. The contribution of the agri-food sector to total exports with about 38% in 2015, for instance, is substantial (Zelenska, 2016). Excluding rural households, agriculture represents the main source of income of about 17% of employees. About one third of the Ukrainian population resides in rural areas (Nivyevskiy et al., 2015).

The Ukrainian agriculture experienced a fundamental structural transformation since the early 1990s. In the course of the privatisation processes, agricultural land was transferred to about 7 million rural inhabitants, members of the former collective farms. At present, the Ukrainian agriculture carries a dual character: parallel to millions of households with agricultural plots averagely sized from two to five hectares, there are 45 379 enterprises of different organisational and legal forms. Despite recent decreasing tendencies, the share of households in agricultural production remains, with about 44.9%, still considerable (State Statistics Service of Ukraine, 2015). More than half of the agricultural land is currently leased and concentrated in large companies, the acreages of which often reach several hundred thousand hectares.

After years of production decline and stagnation, the Ukrainian agri-food sector began to recover from 2000 on, as a consequence of reform efforts, and since records mainly positive growth rates. Particularly in recent years, the sector experiences rapidly increasing profitability (Zelenska, 2016). The agricultural potential of the country, however, is far from being fully realised. In view of existing land reserves, the climatic and geographical conditions as well as the relatively low population density, Ukraine has a great potential to further raise its agricultural production and consolidate its position as one of the world's largest agri-food exporters. By further increasing productivity and expanding the export volume, agricultural producers could achieve substantial additional revenues (World Bank, 2008). Ad hoc policy-making and resulting uncertainties, lack of transparency and unequal treatment of agricultural subsectors, however, hamper investments, which are needed for development of capital-intensive

areas and productivity gains. This is aggravated by lack of expertise, inefficient infrastructure and limited access to production factors (Cramon-Taubadel et al., 2008). A difficult process of transformation, overall political turbulences and economic crises impede the formulation of consistent agricultural policy, necessary to form stable expectations. The latter, however, are of utmost importance for a sustainable development of the agricultural sector.

According to experts' assessment, Ukrainian agricultural policy does not place sufficient emphasis on the provision of public infrastructure and other supporting services. The excessive regulatory environment involves high transaction costs (Nivyevskiy et al., 2015). While specific sub-sectors obtain considerable support through payments based on area, animal heads and outputs, a concessional credit programme as well as tax privileges, other sub-sectors suffer from a rather negative protection. Despite formally declared governmental commitments and state programmes, policy-making continues to be ad hoc and opportunistic, lacking a cohesive long-term strategic perspective aligned with economic principles (ibid.).

The present thesis analyses general political, structural and institutional conditions, which shaped the agricultural policy in Ukraine during the last phase of the Orange coalition in the run-up to the presidential elections in 2010. The study identifies the relevant actors in the policy domain and their interrelations. Furthermore, it aims to shed light on preferences and general orientation about topical agricultural issues – which are especially important against the backdrop of the erratic policy decisions. Further objectives of this thesis refer to the influence of institutional and structural factors on the determination of policy outcomes under different scenarios. To this end, the study not only deals with the constitutional order of the political system, in which decisions are formally adopted and implemented, but also with role and access structures of agricultural interest groups. As theoretical framework, the political-economic equilibrium model of Coleman (1966, 1990) and Henning (2000) is applied. This approach aims to analyse multidimensional collective decisions. The final policy outcomes are modelled as the result of the resource exchange between governmental and non-governmental actors, whereas access and exchange relations are organised in policy domain networks (Henning, 2000). Thus, the thesis carries an interdisciplinary character: the applied approach at the interface between agricultural economics, political science and economics adequately addresses the complexity of the issue.

Besides overall agricultural policy, the possible influence of organised groups on the formation of agricultural trade policy, in particular on the structure of import tariffs, is analysed in this thesis by application of the Grossman-Helpman (1994) model. The influence of organised interests on the trade policy pattern is examined by taking into consideration the dual character of Ukraine's agricultural structure. This is the first study which applies the Grossman-Helpman Model (G-H) on an agricultural sector of a transition country.

1.2 Outline

The thesis is divided into seven Chapters. In order to better identify the research question, Chapter 2 deals with the economic and agricultural situation in Ukraine after the independence. Against the background of the transition processes, the main phases of introduction and implementation of agricultural policy reforms are described. Following this, the key issues of Ukrainian agricultural policy are analysed, which include land reforms and farm structure, agricultural support and foreign trade policies, rural development, the agro-processing sector as well as environmental issues. The following Chapter 3 analyses the Ukrainian political system, decision-making processes as well as relevant players in the policy field.

Chapter 4 gives a review about general as well as specific agricultural political-economic approaches. It starts with basic concepts, assumptions and behavioural patterns of political-economic models. Since the agricultural policy domain is a classic field in which the influence of organised interest groups on political agenda-setting is assumed to be considerable (Persson and Tabellini, 2000) at least in developed countries, formal political-economic approaches are presented, which use neoclassical or game-theoretical equilibrium models to analyse the lobbying strategies of interest groups or the impact of lobbying on political decision outcomes and the welfare of society (Henning, 2004). The discussed models include theories of rent-seeking (Tullock, 1967; Krueger, 1974), logic of collective action (Olson, 1965), Chicago School approaches (Stigler, 1971; Peltzman, 1976; Becker, 1983, 1985) as well as the political market model (Tyers & Anderson, 1992). Afterwards, theoretical concepts are described, which seek to explain the interactions between policy-makers and voters instead of interest groups. In this context, the traditional median-voter theorem as well as the political preference model (Swinnen &Van der Zee, 1993) are discussed. The latter is particularly widely applied in agricultural policy research. Before presenting the political exchange model, the approach actually used in this study, the theoretical part briefly outlines alternative

models also analysing the multidimensional policies, including the probabilistic voting and agenda-setting models (Shepsle 1979; Shepsle & Weingast, 1981; Romer & Rosenthal, 1978, 1979).

Starting with the Coleman model (1966, 1990), the basic theoretical foundation of the political exchange model is delineated. Collective decisions are achieved by the exchange of votes (or power resources) between political actors as part of their legislative work proportionally to their interest intensities in various policy dimensions ("log-rolling"). In the following, extensions and modifications of Henning (2000) are depicted according to which the final policy outcomes are equal to the mean of the preferences of all actors involved, weighted by the respective power shares in the exchange equilibrium. Furthermore, the theoretical part deals with the operational and formal model of political influence developed by Henning that simultaneously takes multiple interest groups and political actors into account. In particular, the model reflects lobbying activities in terms of an exchange of politically valuable resources. To guarantee a non-opportunistic behaviour, political exchange is embedded in the policy domain network. In order to minimise the transaction cost of exchange, actors engage in brokerage relations which imply that those interest groups not only exchange influence resources directly, but also indirectly through other interest groups or politicians (Henning, 2004).

The political exchange model is followed by the approach for trade policy developed by Grossman and Helpman (1994). The latter offers a model to assess the influence of organised interests on trade protection patterns. Due to its tightness, the model is well suited for an econometric application and has been widely used in studies about trade policies.

The empirical analysis of this work is divided into two sections. While in the first one the application of the political exchange model is based on self-collected data, the analysis in the second section uses secondary data. Chapter 5 starts with the calculation of the institutional decision-making power of the political actors by using the Shapley-Shubik index for different constellations. The evaluation and analysis of personal interviews provide preferred positions of relevant political actors and interest groups regarding the major agricultural policy issues as well as the nature and intensity of their interactions. The structure of communication and the resource exchange between the actors are identified through an empirically obtained policy network. The quantitative network analysis measures power and influence distribution in equilibrium. The array of policy preferences is used as indicator of underlying ideological

orientations. In the framework of quantitative political policy analysis, the outcomes of the reference scenario are calculated. A number of simulated scenarios examine the influence of institutional and structural changes on the agricultural policy outcomes and give insights about possible shifts in general orientation. The scenarios include the situation without lobbying or exchange of resources, constitutional amendments in the form of the introduction of the two-chamber parliamentary system as well as a political setting with a strong party government. The scenarios regarding institutional changes stem from the ongoing debates about constitutional amendments during the study period.

Chapter 6 deals with the possible influence of organised interests on import tariffs. The study applies the Grossman-Helpman (1994) "Protection for sale" theoretical framework and is based on the detailed panel data from the time period prior to Ukraine's World Trade Organization (WTO) accession, when the decisions were made relatively independently. The econometric model is estimated by use of instrumental variables, considering the possible endogeneity of the regressors. Hereby, different specifications for the variable identifying the political organisation level are employed. The sensitivity analysis tests the robustness of the results. Chapters 4 and 5 conclude with the evaluation of the respective methodological limitations of the applied models and assess the informative value and explanatory power of the achieved results.

The final Chapter 7 summarises the present work and outlines the future research needs.

2 Development and Structure of Ukrainian Agricultural Policy

2.1 Agricultural Potential and Agrarian Sector at a Glance

Ukraine is the second largest country in Europe. Favourable geographical and agro-climatic conditions provide a basis for Ukraine's huge agricultural potential. Out of 42 million hectares of agricultural land, roughly 32.5 million hectares are arable (FAO, 2012). Humus-rich Chernozem soils contribute to one third of the world's black soil stock (World Bank, 2008). Proximity to different regions like the European Union (EU), the Former Soviet Union (FSU) and the Middle East enables Ukraine to access important world markets relatively easily. Additionally, due to its rather low population density, Ukraine has the opportunity to build on its traditional role as the "Bread Basket" of Europe and later of the Soviet Union and to establish itself as one of world's major exporters of agricultural products (ibid.). According to Food and Agricultural Organization of the United Nations (FAO), in 1970, for instance, Ukraine produced about 20% of grain, 59% of sugar beet, 62% of beet sugar, 44% of sunflower seeds, 21% of potatoes, 22% of milk and 22% of every kind of meat of the total Soviet production by occupying only 16% of cultivated area. Furthermore, according to FAO, Ukraine was in first position in Europe and in fourth position in the world (behind USA, China and Canada) in terms of grain production (Bogovin, 2006).

As agricultural production becomes more and more sophisticated, the relevance of the purely production-based natural conditions as the comparative advantage is declining (World Bank, 2008). The main challenge for the Ukrainian agri-food industry is still to increase its competitiveness by modernising the complete value chain in order to successfully open new export markets for Ukrainian agricultural products and foodstuffs (ibid.). Ukrainian farms are not yet able to fully utilise the natural potential in an efficient and sustainable way. Grain yields, for instance, with an average of 3 tonnes per hectare, are far below the Western European level (Sauer, 2010). Although Ukraine owns, with 32 million hectares of arable land, more than twice as much as Germany, it harvests on average 35 million tonnes per year, only about 70% of German grain production (ibid.). The main handicap of the competitiveness of Ukrainian agriculture is the lack of a stable and adequate long-term agricultural policy, sufficient human capital as well as information and marketing systems (World Bank, 2008). Ukrainian agricultural producers confirm, that unstable state agricultural policy, lack of Government support

and problems with marketing represent the most prevalent and relevant problems for agricultural development (Fedets, 2012). Further impediments are insufficient land markets, lack of a coherent rural development strategy and complicated quality insurance system as well as limited access to credits (Nivyevskiy et al., 2015). With appropriate agricultural policies and investments in modern technologies, Ukraine could significantly increase its productivity, production quality and strengthen its position on the global market as the exporter country (World Bank, 2008).

In the course of transformation processes, the Ukrainian agri-food sector went through a sharp initial output decline, mirroring the pattern of the general economic contraction in the 1990s. The primary cause of the fall in output was the institutional disruption which was reinforced by the declining terms of trade as a result of producer and consumer subsidy cuts, price liberalisation, reduced domestic demand caused by falling incomes and decreasing foreign demand caused by the collapse of the trading ties between former communist countries (Swinnen, 2001). The agricultural production declined even faster than the output of the overall economy. The reasons were manifold: a drop of gross agricultural production was the result of the adaptation to new conditions (J-curve theory), inadequate state interventionism in terms of the production means and sales, lack of enforcement of bankruptcy laws, counterproductive taxation and the lack of a land market and an effective financial system (Cramon-Taubadel, 1999; Koester, 1999; Striewe, 1999; Lissitsa, 2002). The production share of households increased as a logical response to market failure and transitional hardships. However, after an initial output fall, the production underwent a positive turn at the beginning of the 2000s and since then has experienced a tendency to grow. The positive change in agricultural production is attributed to relative macroeconomic stabilisation, agricultural reform processes, growing domestic demand and intensified foreign trade. The share of agricultural holdings in total output is steadily increasing. Table 1 shows the pattern of agricultural production volumes starting from 1990. Despite continuous growth since 2000, the overall output level still has not reached the pre-transition level.

In addition to an initial decline of the agricultural output, there was a shift in the structure of agricultural production. While the gross agricultural output in 1990 was composed to 45% of crop and to 54.4% of animal production, the share of the former increased to 61.6% in 2001 (World Bank & OECD, 2004). The main reason was the sharp drop in demand for animal products as a result of a decline of more than 60% in real per capita income from 1990 until

2000. Due to the higher income elasticity of livestock products, the demand for them decreased significantly sharper than for other agricultural products (ibid.). While the crop output in 2012 surpassed the initial level of 1990, the animal production still lags behind.

Table 1 Gross agricultural production, in UAH million, in 2010 prices

	1990	1995	2000	2005	2010	2012	2013	2014*
Production total	282774	183890	151022	179606	194887	223255	252859	251439
Crop production	145502	106330	92839	114480	124554	149233	175896	177708
Animal production	137272	77561	58183	65126	70332	74021	76964	73731

*2014: Data for Crimea and disputed parts of Donetsk and Luhansk regions are not included.

Source: State Statistics Service of Ukraine 2014.

Wheat, barley, maize and sunflower are the most important crops in Ukraine, covering about 70% of Ukraine's total arable land. The production volume of grains, which is traditionally the leading crop in Ukraine, is increasing continuously, making Ukraine one of the world's top exporters. Also, oilseeds have experienced impressive growth rates (Nivyevskiy et al., 2015). Since 2014, Ukraine has emerged as the world's top exporter of sunflower. Fruit and vegetable production also increased considerably over the past years. Livestock production has begun to recover since 2000. However, while the poultry sector proved to be a success story and quickly turned into an export-oriented sector, the production of beef and veal stagnates. Production of pork also shows an upward trend. Ukraine is overall a net importer of meat, but has potential to catch up due to the abundant domestic production of grains (ibid.).

The improved performance of Ukrainian agriculture is rather induced by more extensive use of land resources than by intensified production methods. However, investments in better technologies, production and post-harvest logistics as well as improved farm and management practices could also be observed and contributed to the production increase as well. Still, the yields fluctuate and are far below the potentially achievable maximum level (Nivyevskiy et al., 2015; Zelenska, 2016).

2.2 Evolution of Agricultural Policies since the Independence

2.2.1 Initial Situation

Since the forced collectivisation in the 1930s, Ukrainian agriculture was mainly organised in large-scale collective and state farms, so-called kolkhozes and sovkhozes. Despite the different legal forms, both of these farm types were largely structured in the same way. Production and delivery as well as input supply and credits were controlled within the central state-planned command framework. The farm workers were hired by the state at a fixed wage rate and were guaranteed job security (Krasnozhon, 2015). The extremely high horizontal and vertical concentration of production in large companies was characterised by economic inefficiency and low ability to adapt to changing conditions. The centrally planned imbalances were partly offset by price policies, administrative allocation of resources and the controlled foreign trade (Kirsch, 1997). The lack of profitability was covered through budgetary transfers.

The number of agro-industrial large-scale enterprises amounted to almost 10 000 at the end of the 1980s, each employing on average 500 workers (Pleines, 2005). Alongside commercial production in the collective and state sector, millions of households cultivated small plots with less than about 0.5 hectare, mainly for subsistence. Despite the small share of the total agricultural land, the private sector in the Soviet Union was relatively productive and contributed to about 25% of the agricultural output (Lerman et al., 2002).

With the state independence in 1991 as well as the withdrawal from the 60-year plan and the command economy, Ukraine embarked upon a process of agricultural transition. In order to cure the chronic inefficiencies of the socialist economic system in general and the socialist agriculture in particular, the transition to a market-oriented system was used as a new strategy (ibid.). The implementation of this strategy, however, proved to be difficult and lengthy. The land reform, for instance, i.e. privatisation and restructuring of traditional socialist farms, as an essential component of the agricultural transition took place over several phases and was marked by a number of presidential decrees. For the evolution of agricultural policies in Ukraine since the independence, four main phases can be identified: 1991-1994, 1995-1998, 1999-2001 and since 2001 (Cramon-Taubadel et al., 2008). The two last phases have been somewhat modified in the present studies under consideration of the Government change in 2004.

2.2.2 Policy Developments between 1991 and 1994

The leaders of the newly independent Ukraine largely missed the "window of opportunity" of the initial period to implement profound economic reforms (Cramon-Taubadel & Nivyevskiy, 2008). In the context of a "dilemma of simultaneity" (Offe, 1991), Ukraine started challenging transformation processes not only of the distorted former command economy but also of the political system. In addition, the initial phase of Ukraine as the young independent state was shaped by a complex and resource-consuming process of state building. In contrast to Estonia and Latvia, the market-oriented economic reforms were not seen as an integral part of nation building in Ukraine (Åslund, 1999). The Government had no clear concept about the envisaged economic system. Instead, various ideas of economic models arose, "… which can be described as a mixture of muddled Gorbachevian economic thoughts, that is, the last stage of communist confusion, and surviving statist nationalist economic thinking from the 1930s about the need for a strong regulating state" (ibid.).

The initial period of transition was accompanied by tremendous challenges. High inflation rates (reaching over 50% per month), fuelled by flaring budget deficits and increasing costs for imported energy, hindered the retreat from the soviet-style economic system (World Bank, 1994). External shocks, the disruption of traditional trade markets and the lack of consensus about the crucial stabilisation measures impeded the introduction of market-oriented reforms (ibid.).

According to Cramon-Taubadel et al. (2008), insufficient economic expertise and analytical capacity of the decision-makers to identify the main needs of agricultural policy-making in view of the domestic and international conditions hindered the establishment of a clear strategy for agricultural transition. Furthermore, inflated bureaucracy, frequent changes of agricultural ministers as well as unclear division of responsibilities between various officials and bodies favoured fragmented and inconsistent policies (Cramon-Taubadel et al., 2008). The power of the old establishment, the nomenklatura, remained more or less unchallenged.

The Ukrainian Government moved very cautiously towards the liberalisation of the agricultural and food sector, since markets were not considered to be capable of providing food security. There was an apprehension that the rapid dismantling of socialist-style farms would lead to an output collapse (World Bank, 1994). In the first half of the 1990s, state intervention in

agriculture was more widespread and the role of markets more limited than in most other FSU states (ibid.).

Despite several moves towards price liberalisation, key elements of the old system in agriculture remained conserved. Development of a market-oriented agriculture was hindered by maintaining (or periodically re-imposing) pervasive state purchases, widely regulating price formation in domestic trade, determining production flows as well as restricting access to international markets for inputs and sales (ibid.). The farms received advance payments from the state. However, in exchange for this implicit credit subsidy, they had to sell their products to the state trading agencies at much lower prices than the border price level. These sales were the precondition not only for the provision of advance payments and for supplying otherwise hardly available inputs but also for granting the approval to export even small quantities (ibid.). As a net result, the farms were implicitly taxed, however, partial compensation occurred through large budget transfers. In 1992-1993, the share of products supplied to the state procurement system reached over 90% of the total marketed volume of sugar beet, 33% of grain, 64% of milk, 78% of beef and around 50% of pork and poultry meat (World Bank & OECD, 2004). In 1994-1995, the delivery to state procurement agencies ceased to be mandatory. However, the Government kept indicative procurement prices. Due to underdeveloped alternative marketing channels, state buyers still purchased significant shares of agricultural products (ibid.). Extensive tax privileges, soft budget constraints, moratorium on bankruptcy of agricultural enterprises and Government debt cancellations supported financially weak enterprises and distorted market signals.

Competition from abroad was hindered to access the domestic market for agricultural products by trade protection measures (Striewe, 1999). Imported meat, dairy products, eggs, animal foodstuffs, cereals and sugar were subject to quotas and licenses. However, the Government also issued some new regulations in order to liberalise the import regime. Laws adopted in 1992 and 1993 established a relatively low tariff regime on imports, in the course of which ad-valorem import duties were applied at a rather moderate rate of 5-10% for the most important agri-food products (World Bank & OECD, 2004). Agricultural exports in the early 1990s were restricted by quota and license systems, applied ostensibly to ensure adequate food supplies to the domestic market. These measures, together with the loss of traditional trade markets and the decline of the agricultural production, decreased agricultural exports and led to the negative net trade balance (ibid.).

In December 1991, peasant farms have been legally defined as a form of individual agricultural enterprise, founded for commercial purposes and based predominantly on own labour. The Law on Forms of Land Ownership, passed in January 1992, eliminated the exclusive state ownership on land and legalised the transfer of land in collective and private possession forms (Csáki & Lerman, 1997). A new Land Code, adopted in March 1992, defined the categories of producers of these title forms: private ownership was planned for individual farms and household plots, while collective ownership was intended primarily for legal bodies that would succeed the former kolkhozes and sovkhozes (Lerman et al., 2007). Land was transferred under the premise that it would be later distributed among the rural population and physically divided into land plots for private ownership (ibid.).

Despite these first steps towards the privatisation of land and the formation of independent private farms, the legislative framework and policies de facto favoured collective land ownership as the dominant form. There was a clear objective to keep private agriculture as a supplementary part of the sector which was supposed to be based on collectively owned large-scale entities (World Bank, 1994). Although kolkhozes and sovkhozes were formally transformed into so-called Collective Agricultural Enterprises (CAEs), the real reconstruction of the farm sector did not take place. Government under President Kravchuk was reluctant to instigate any radical land reform which would endanger the support of the agrarian lobby of collective farm managers. The lack of blueprints from the central Government about exact procedures of reforms gave carte blanche to the local rural bureaucracy which generally opposed the dismantling of large farms in order to hinder local private farming initiatives (Ash, 2003).

After 5 years of reforms, only about 15% of the agricultural land was cultivated by private farms and households, whereas about 65% was allocated to collective ownership (Csáki & Lerman, 1997). Overall macroeconomic instability, uncertain legislation on landownership, non-existent input markets and limited access to credits made private farming risky. Even though there were about 32 000 private farms by the beginning of 1995 (ibid.), they were much smaller and less influential than the approximately 12 000 collective farms and their successor enterprises (Cramon-Taubadel et al., 2008).

Partial and unsustainable reforms in the initial state of transition created numerous possibilities for rent-seeking. The agricultural sector was particularly prone to this practice. Rents

could be grasped through direct and implicit subsidies, including tax privileges, and through favoured access to the State Reserve Fund as well as through distorted prices (Fonkich, 2000). According to Åslund (1999), in the first years of transition, some individuals and enterprises made large profits by selling abroad Ukrainian agricultural products at considerable higher prices than on the domestic markets. In 1992, for instance, 40% of Ukrainian export commodities could be sold on the world markets at ten times higher prices due to the domestic regulations. Hence, the rents of roughly 20% of the Ukrainian Gross Domestic Product (GDP) were received by a handful of individuals with privileged access to goods and export possibilities (Cramon-Taubadel et al., 2008). Another source of rent-seeking was the granting of subsidised credits at much lower interest rates than the current inflation[1] (Åslund et al., 2001). Furthermore, direct budget subsidies paved the way for their misuse by corruption networks between state subsidy distributors, commercial structures and collective farm directors (Pleines, 2005).

In the initial phase of transition, agricultural policy-making in Ukraine was influenced to a large extent by guardians of the old system. The majority of Collective Agricultural Enterprise directors exploited their old networks and established a conservative agrarian lobby[2] together with state administrative officials. The "All Ukrainian Committee of Collective Agriculture Enterprises" (Kolkhoz Council), originally founded in 1969 as social organisation to protect the interests of kolkhozes and since then closely connected with the Ministry of Agrarian Policy, was able to maintain its function and promote its goals after the collapse of the Soviet Union. The main task of the council was to maximise funds and privileges from the state: providing fuel, seeds, equipment and low-interest credits. It clearly opposed the market-oriented reforms, including land privatisation. Kolkhoz Council could rely upon old and strong personal contacts and, due to nearly unrestrained access to the key policy-makers, exert strong influence. It could preserve its office within the Ministry of Agrarian Policy. Its representatives regularly attended the ministry's working sessions and accompanied the minister when he gave recommendations to the President. Claiming to represent all collective enterprises, Kolkhoz Council did not collect membership dues, but was illegally funded by the Social Insurance Fund of the agricultural employees.

[1] Inflation rate in 1993 amounted to 10155% according to the State Statistics Service of Ukraine.
[2] Following sections regarding the development and role of the agrarian lobby, including the Agrarian Party in post-soviet Ukraine, are based on Kubicek (2000), Pleines (2006) and Pleines (2008).

Representatives of other organisations, such as the Ukrainian Farmers Association (FA), were less privileged than the Kolkhoz Council. The farmers were generally less powerful as a force to shape agricultural policy. In addition to the lack of economic prerequisites, the farmers faced difficulties of the privatisation processes grounded by law. The decision about land distribution to farmers was made by local councils, which, however, were controlled by the kolkhoz directors. The latter were thus entitled to pursue their own interests, hinder privatisation and undermine reforms.

Based on the roots of traditional rural communist party organisations, the Peasant Party of Ukraine was founded in 1992 (Bugajski, 2002). In 1993, the party counted 76 members in Parliament with a share of votes of 17% and represented the interests of the conservative agrarian lobby. The Peasant Party was the crucial power when it came to agricultural questions. Proposals for far-reaching land privatisation were repetitively defeated. In their opposition to reforms and restructuring of the agricultural sector, the Peasant Party could rely on support of Communist and Socialist party factions. This cooperation granted the Peasant Party de facto veto power. For instance, a decree, issued by President Kuchma aiming to update the legislation on private property rights on land, was overwhelmingly denied. The opponents of the agrarian lobby, on the other hand, were largely isolated. The representatives of private farms were virtually not involved in the national agricultural politics. The rivals of the agrarian lobby in the Government and in Parliament were not connected to each other and therefore not capable to form a coordinated opposition. Only after the splitting of the Peasant Party in 1995 into Centrist Agrarians for Reform (later transformed into Agrarian Party of Ukraine) with 26 seats and the successor of the original Peasant Party with 25 seats, the affluences of reformers in Parliament enhanced. It was due to the recalculation of their own preferences, as the former opponents of reforms now hoped to gain from the commercialisation of agriculture in analogy to the industry, where some individuals and enterprises could enrich themselves in the gold rush years of privatisation. For the profound change of agricultural policy, this shift of power was not sufficient.

2.2.3 Period of Partial Reforms 1995-1999

Following the election of Leonid Kuchma as President in the mid-1990s, the Ukrainian Government launched a number of macroeconomic stabilisation programmes aiming to reduce fiscal deficits. In the course of these reforms, fiscally unsustainable budgetary transfers to the agri-food sector were sharply cut, from as much as 11% of the GDP in 1992 to roughly 1.7%

in 1995 (World Bank & OECD, 2004). The Government ceased its traditional cash-based procurement for agricultural products[3] (ibid.). However, withdrawal from this form of procurement did not mean that the state retreated from the agricultural sector which was still regarded as public domain. The Ukrainian Government shifted to a so-called "state commodity credit", an in-kind advance of inputs for future in-kind reimbursement with agricultural products (ibid.). The non-transparent mechanisms of state commodity credits aggravated the financial problems of highly indebted agrarian enterprises and reinforced the vicious circle. The obvious inability of farms to repay debts and to use market instruments for seasonal financing served as primary justification for the Ukrainian Government to provide input supplies and, in return, claim agricultural products, hereby depriving the producers of the possibility to sell their products and receive liquidity. The analysts in the Agricultural Policy Analysis Unit of the Presidential Commission on Agrarian Policy of Ukraine calculated, that in 1998 and 1999 farms promised at least their total marketable production to the state, leaving the sector without any financial resources to pay the employees or to invest for the following years (Van Atta, 2001).

The underlying problem of the inability of large farms to serve liabilities, however, was their low profitability caused by public policies diminishing the incentives for good financial performance (Sedik, 2001). Soft budget constraints and poor payment practice inherited from Soviet times and resulting in significant tax and wage payment arrears intensified the problem. Between 1994 and 1998, the total debt of agricultural farms in Ukraine increased from 37% to 93% of the gross agricultural product (Csáki et al., 2001).

At the end of 1995, regional administrations received the right to organise "regional resources delivery" of agricultural products in order to meet "regional needs". Neither terms nor scope of regional administrations' authority were specified in detail, leaving wide room for interpretation (World Bank & OECD, 2004). The regional administrations used different instruments to intervene in the local agri-food economy, including oral orders for informal price fixing as well as decisions on marketing or restrictions of commodity outflows outside the region (ibid.). Although the overall legislation in Ukraine prohibited such interference into private economic activities, regional export bans and confiscations of grain and oilseeds were employed during three years (1996, 1997, 1998), justified by the need to keep the state reserves supplied and to collect taxes and debts (Cramon-Taubadel et al., 2008). Applying the spatial equilibrium regional trade model based on the approach of Takayama's & Judge's quadratic

[3] The only exception were grain purchases for which budgetary funds were allocated until 1998.

programming, Zorya (2001) estimated that the ban on grain exports not only decreased the producer revenue of the region, but it also negatively affected other regions. In sum, producer losses exceeded consumer gains countrywide.

State commodity credits and interventions of regional administrations not only affected producer incomes negatively but also generated conditions for arbitrariness and rent-seeking. The state attempted to prevent the accumulation of agricultural enterprise debts through large-scale write-offs and further direct subsidies (World Bank & OECD, 2004). Inconsistent reforms and misguided policies, however, rather deepened the financial crisis. According to the Ministry of Agrarian Policy, the share of unprofitable farms increased every year: 85% in 1997, 93% in 1998, and 98% in 1999 (Krasnozhon, 2015). In 1998, the losses of CAEs amounted to US$ 1.23 billion. 95% of the enterprises could not repay their credits and "Ukraina", the state-owned agricultural bank and the largest bank in Ukraine, filed for bankruptcy (ibid.).

In 1996, the privatisation programme for the food processing industry began. The procedures applied for the privatisation of the agribusiness enterprises differed from those of non-agro-industrial companies: in order to restore technological links between agricultural producers and processors, farms supplying raw material were given a share of 51% at advantageous terms and later even free of charge (OECD, 1998). The state maintained 25%, while the rest was transferred to enterprise employees or offered to open sales (Cramon-Taubadel et al., 2008). There were differences in privatisation patterns depending on the sub-sectors. Grain processing enterprises, for instance, were exempted from privatisation until 1998 (OECD, 1998). Yet, even if privatised, most enterprises of the food-processing sector did not go through substantial restructuration. The enterprises suffered from a shortage of capital, resulting in development of barter arrangements. Some of the products were paid back in-kind to agricultural producers for the provision of inputs. This scheme imposed additional costs on farms and decreased the taxable revenue of the agro-processing industry (ibid.).

In order to accelerate the process of land distribution and specify the mechanisms required for that, the President issued a decree in November 1994 and August 1995: the Decree on Priority Measures to Speed up Land Reform in the Agricultural Sector and the Decree on the Procedure of Sharing of Land Transferred to Collective Ownership of Agricultural Enterprises. Rural residents were supposed to receive paper certificates of land ownership (i.e. without physical plot) and entitled to withdraw from a collective enterprise with their land shares.

From 1995 onwards, non-land assets of collective farms could also be distributed between its members (Lerman et al., 2007). These decisions were important to foster the land privatisation and farm restructuring process. However, they did not immediately lead to significant changes in the operation mode of agricultural enterprises or in rural life. Legislation on the legal status of the land title sales was contradictory and incomplete. Conversion of paper shares into demarcated parcels of land was difficult. By December 1999, more than 6 million rural residents received paper certificates that confirmed their right as private owners to a plot of a defined size of land, but in an undetermined location (Puhachov & Puhachova, 2001). According to Lerman et al. (2007), this type of privatisation did not essentially allocate land use rights to individuals. A very limited number of CAEs distributed land in-kind to shareholders and few former employees left large farms for private enterprises. Besides the relatively unfavourable conditions for private farmers regarding the access to credit, input and output markets compared to agricultural enterprises, the exit was hindered by the accumulation of overdue debt in CAEs (Lerman et al., 2007). Neither land nor non-land assets of agricultural enterprises with unresolved debt could be distributed because of creditor claims on them (Csáki et al., 2001).

Between 1994 and 1999, the conservative agrarian lobbies lost their unanimous appearance. Their resistance against market-oriented reforms, however, could not be stopped. According to Pleines (2005, 2008), President Kuchma attempted to break up the dominance of the alliance between the Peasant Party and the other left wing deputies in the Parliament on agrarian issues since 1995. The aim was to divide the old Peasant Party and to establish the new progovernmental one. The Ministry of Agrarian Policy founded the new Agrarian Party in order to release the conservative agrarian lobby from the opposition to the President and to dismantle their resistance towards reforms. In the summer of 1995, more than a half of the Peasant Party members left the faction and established their own Parliament group, the Agrarians for Reform. The newly established pro-President Agrarian Party, however, failed to clear the 4% threshold during the Parliament elections in 1998. The remaining members of the Peasant Party still played an important role against reform efforts due to their continued cooperation with left wing parties and their formation of an electoral pact and common faction with the Socialist Party. The significance of the Peasant Party was clearly demonstrated by the fact that its representative, Oleksandr Tkachenko, became Speaker of Parliament in 1998 (Pleines, 2005).

Since the mid-1990s, efforts were made to facilitate the integration of the Ukrainian agri-food sector into international trade. With some exceptions, export quotas and licences had been abolished. Export restrictions were removed in order to fulfil the requirements of the International Monetary Fund (IMF) and the World Bank. For those who had profited from these restrictions, alternatives were introduced (Cramon-Taubadel & Nivyevskiy, 2008). Via presidential decrees, Ukraine implemented the system of "indicative prices" for many products, i.e. minimum prices, below which the products could not be exported (World Bank & OECD, 2004). These prices were formally non-compulsory. However, local customs officials could demand their application, hereby pushing the traders to 'resolve' disputes locally or maintain influential contacts in Kiev in order to 'facilitate' transactions (Cramon-Taubadel et al., 2008).

While import quotas and licences on a number of agricultural products have been abolished, initially rather moderate import duties have increased sharply since 1996 (World Bank & OECD, 2004). The transparency of tariffs was impaired, as ad valorem duties were replaced by specific or combined tariffs (Zorya, 2003), which are considered to have been more regressive and trade distorting than the former ones (OECD, 2001).

While the initial two years of Kuchma's first presidency term brought relative macroeconomic stabilisation, efforts to further push liberalisation, privatisation and structural reforms in the following years were rather unsuccessful. Inflation remained low, but the decline of economic output, aggravated by the Asian and Russian Crisis in 1998, resumed (Ménil, 2000). On the other hand, the financial crisis in 1998 opened a new 'window of opportunity' for Ukrainian policy-makers, which, to some extent, was successfully used (Zorya, 2003).

2.2.4 Distribution of Land Shares 1999-2004

Beginning in 1999, Ukrainian agriculture along with other economic sectors began to recover. Following the re-election of Kuchma as President in 1999 and the appointment of reform-oriented Yushchenko as Prime Minister, Ukraine implemented a wide-ranging reform package. Last but not least, the market-oriented agrarian reforms were enabled due to the shift of power in Parliament, since pro-presidential parties could poach a number of left-wing deputies. The Peasant Party faction broke up due to a low membership number. After the parliamentary elections in 2002, it was not represented in Parliament anymore (Pleines, 2008). The

Centrist Agrarian Party, on the other hand, managed to win seats as part of pro-presidential electoral alliance. Since then, the parliamentary Committee for Agriculture was dominated by the Agrarian Party, which, in contrast to the Peasant Party, did not veto reforms (ibid.).

As stated in Cramon-Taubadel et al. (2001), the agricultural reforms of 2000 made more progress than in the previous eight and a half years since the independence. In this period, the macroeconomic situation became stable. Less distortive farm policies, privatisation of land and restructuring of collective farms positively affected their profitability. The agricultural terms of trade, i.e. the index of real agricultural output prices relative to agricultural input prices, increased by 18% in 2000 for the first time after many years (Lerman et al., 2007).

In 2000, the Ukrainian Government ceased state commodity credits and significantly reduced its interference in agricultural input supply and marketing systems. In order to re-establish monetary transactions in the agricultural sector, the state encouraged the formerly abstaining banking sector to give credit to agricultural enterprises by introducing the partial compensation of interest rates from national budget (Brümmer & Zorya, 2005). An abolition of moratorium on bankruptcy procedures against agricultural enterprises eased interactions between creditors and debtors and improved creditor rights (World Bank & OECD, 2004). As a result, the amount of financing by banks rose: in 2000, significantly more capital flowed into farming than in previous years (Nedoborovskyy, 2004). Furthermore, agricultural enterprises profited from debt relief measures, as Government implemented write-off and/or restructuring of overdue fiscal payments under state commodity credit (World Bank & OECD, 2004).

In 1999, the new Ukrainian Government anticipated the urgent necessity to transform ownership and management control structures of predominant CAEs in order to raise efficiency of the sector. The President's decree, issued in December 1999, compelling corporate farms to convert their paper land shares into fully entitled land plots for their shareowners proved to be a true watershed in the field of land reforms (Lerman et al., 2006). The decree declared collective land ownership incompatible with the market conditions. CAEs had to be dissolved and reorganised into market-compliant forms based on private land ownership, such as family farms, private enterprises, farming corporations and agricultural cooperatives (Lerman et al., 2007). The land obtained from former CAEs through the conversion of the share certificates could be used to expand the existing household plot or to lease it to agricultural enterprises after signing a formal contract (Puhachov & Puhachova, 2001). The price floor, accounting to

1% of the normative farmland price[4], was imposed on the rental market (Krasnozhon, 2015). As a result of the reform, about 7 million rural residents received physical land plots with an average size of 4.2 hectares, altogether amounting to 70% of the agricultural land (Lerman et al., 2007). While in December 1999, there were 8102 CAEs in Ukraine, by April 2000, Ukraine's business registry listed no CAEs, but 7 389 private agricultural enterprises and 3041 agricultural production cooperatives instead (World Bank & OECD, 2004). Progressing land reforms and farm restructuring measures contributed to increasing profitability of many agricultural enterprises by 2000-2001, after years of suffering from losses. For instance, the profitability level of all agricultural enterprises amounted to 9% on average in 2000, while less than one third of the agricultural enterprises were non-profitable (ibid.).

Between 1991 and 1999, farms in Ukraine were largely levied within the general tax system and were supposed to pay 12 different taxes. Very low tax revenues from the agricultural sector and growing tax and social payment arrears of the farms urged Ukrainian policy-makers to reform the agricultural taxation system. As a result, Verkhovna Rada introduced a preferential Fixed Agricultural Tax (FAT) in 1999. The FAT simplified the mechanism of tax collection and reduced the burden on farms. It was levied to replace the previously existing 12 different taxes except value added (VAT) and excise taxes (Kuhn & Nivyevskiy, 2004). The rather low tax rates were specified for two types of agricultural lands and equalled 0.5% for arable land and pastures and 0.3% for perennial plantations. Land value was determined by authorities depending on its quality (World Bank & OECD, 2004). Farms of different organisational forms were eligible to pay FAT with the premise that 50% of their revenues originated from sales of agricultural products (later, this share was increased to 75%) (ibid.). Between 1999 and 2000, agricultural enterprises were exempted from paying 30% of the Fixed Agricultural Tax. The rest was transferred to pension and social security funds (Kuhn & Nivyevskiy, 2004). This preferential treatment was equivalent to a subsidy of approximately UAH 208 million in 1999 (Cramon-Taubadel & Zorya, 2000).

During the period between 1999 and 2004, agricultural enterprises were granted a VAT preference as they were exempted from paying VAT to the national budget. According to the data of the Ministry of Agrarian Policy, the VAT subsidy amounted to UAH 118 million in 1999

[4] The state fixed a normative price for one hectare of farmland at 10 thousand UAH (Krasnozhon, 2015).

and UAH 582 million in 2001 (World Bank & OECD, 2004). The VAT payment could be retained by agricultural enterprises and be used only for purchasing agricultural production inputs (Kuhn & Nivyevskiy, 2004).

The agro-processing sector experienced rapid privatisation processes in the years 1996-2001. As stated in the joint study by the World Bank and the Organisation for Economic Co-operation and Development (OECD) (2004), most of the former state firms in the upstream and downstream sub-sectors had been at least partially privatised by this time. From over 4000 agro-processing enterprises which were offered to the private buyers, more than 83% had sold all their shares, nearly 12% had sold between 70% and 90% of their shares and only slightly more than 2% had sold less than 50% of their shares by January 2002 (World Bank & OECD, 2004). Some observers, however, cast doubt on whether the formal privatisation would lead to the full independence from state control, as many officials used their positions and acquired ownership of private enterprises. Besides, most of the privatised upstream and downstream enterprises became part of regional and national associations which, ostensibly private, acted like parastatal agencies and received Government instructions. In addition, former units of the Ministry of Agrarian Policy nominally became private corporations (Ukragroprombirzha, Khlib Ukrainy), often with a considerable share of Government ownership (Van Atta, 2001). Nevertheless, some industries in food processing experienced increasing efficiency. Gross Value Added (GVA) in the food industry grew by 40% between 1996 and 2001, whereas employment in the sector decreased by 10%. The increase in GVA per worker in the food sector was considerably larger than in the Ukrainian economy in general, making it one of the most vibrant sectors (World Bank & OECD, 2004). The privatisation process was accompanied by an increasing inflow of Foreign Direct Investments (FDIs). Though starting from a relatively low level, FDIs in food industry grew strongly by 700% from 1995 to 2001 (ibid.).

Despite the implementation of promising reforms, the Ukrainian Government applied regulations at the same time, casting doubt on the fundamental character of the agricultural policy orientation. These included the introduction of a quota and a minimum price regime for sugar as well as a pledge price system for grains during 2000 and 2001, thus emulating similar mechanisms in EU and USA (Cramon-Taubadel et al., 2008). A number of further informal ad hoc interventions at national and regional levels were still in place and considerably influenced producer prices. For example, in accordance with the presidential decree issued in

2000, grain traders were obliged to register all export contracts. The declared aim was to better control the grain situation since the large export outflows in the previous years and the expected low harvest (World Bank & OECD, 2004) were leading to increasing prices and import demand. Moreover, the Government introduced obligatory reporting on the quantity of stored grain. According to Cramon-Taubadel (2001), export certification as well as the introduction of pledge prices and the enhancement of the role of the parastatal "Khlib Ukrainy" were inappropriate measures to address grain market instability. Given the excessively high storage costs in Ukraine and the uncertainty about future developments, it was a rational decision to export grain instead of storing it (Cramon-Taubadel, 2001). Price fluctuation on the grain market since the beginning of 1999 was mainly caused by the devaluation of the national currency, high marketing costs and import duties, i.e. the price volatility was attributed to Ukrainian policy-making. Thus, by introducing export certificates, the policy-makers were punishing grain traders for their own default (ibid.). Regarding the pledge prices for grain, Cramon-Taubadel argues that the Ukrainian Government could not afford the expenditures of a truly effective system delivering significant support for farmers (Cramon-Taubadel, 2001). The experience gained in the grain deficit year 2003 showed that the pledge prices system was apparently not able to mitigate the situation by releasing grain into the market.

In 2000, the Government introduced oilseed export taxes amounting to 23% and stipulated a high "indicative" export price. The effectiveness of this tax was yet limited, as the exporters used a loophole which enabled them to export oilseeds under tolling contracts with foreign oil processors. In 2001, the export tax rate for oilseeds was reduced to 17% while the tolling arrangements with foreign partners have been prohibited. Despite the tax cut, exports were more effectively limited, bringing advantages to the domestic oil processing industry (FAO & EBRD, 2002). Hence, farmers had to accept reduced farm-gate prices while oil producers benefited from low raw material costs. So, it was not surprising that the abolishment of export taxes on oilseeds encountered fierce resistance from the oil producers' lobby, represented by the association Ukroliyaprom which proposed the introduction of a production subsidy for farmers instead (Kuhn & Nivyevskiy, 2004).

In 2003, as a consequence of unfavourable weather conditions, farmers in Ukraine harvested only 5 million tonnes of wheat, while harvests in previous years had yielded roughly 20 million tonnes (Treis, 2003). Ukraine had to import wheat for the second time since 2000. Due to political sensitivity of bread prices, the Government under Kuchma reintroduced state inter-

ventions in commodity markets. Since the main reason for the shortfall was seen in an insufficient monitoring of the grain market and uncontrolled exports, the hunting for witches began (ibid.). The vice Prime Minister Kozachenko was accused of fostering grain exports and taken into custody. The Ukrainian Minister of Agrarian Policy publicly contemplated the necessity of returning to the old system of crop management, which implied central commanding of farmers to produce specific quantities of agricultural products (ibid.). The Government intervened by setting maximum prices for staple foods and regulating profitability of producers and price mark-ups of retail stores. Bread producers received support in order to ensure a low price level for the consumers (Cramon-Taubadel, 2004). The regional administrations were given authority to restrict free grain movement and interfere in grain pricing as they were responsible for "regional food security" and for the establishment of regional grain stores (World Bank & OECD, 2004). The abolishment of import duties on wheat was preceded by a long discussion of policy-makers about import quotas. A public declaration on the intention to import grain from Russian at a relatively low price created uncertainty among the traders and discouraged them from importing grain at world market prices (Treis, 2003). Furthermore, some traders were told that they were only allowed to export feed grains in case that they would bring wheat on the way back to Ukraine within a certain period of time. Instead of relieving the situation, these measures amplified the price increases and undermined market mechanisms. In the following months, as grain imports finally began to arrive and the Government began to target aid to disadvantaged consumers, prices decreased and the "crisis" was overcome (Cramon-Taubadel, 2004).

2.2.5 Agricultural Policy-Making since 2004

After the Orange Revolution, when Yushchenko and Tymoshenko came to power, there were high expectations that the economic reform would be at the centre of the government's agenda. These two leaders considerably contributed to the reform implementation from the end of 1999 until 2001.[5] However, they did not manage to come up to expectations. Due to permanent power struggles, the new leadership failed to create a stable political and economic framework. The coalition Government of Yushchenko as President and Tymoshenko as Prime Minister was formed on compromises that, for instance, included a socialist Minister of Agriculture. The stop-and-go agricultural policy experienced no major changes and was still lacking a clear commitment to market orientation (Cramon-Taubadel et al., 2008). The constitutional reform, which came into force in 2006, limited the power of the President and increased

[5] Tymoshenko was the deputy Prime Minister for the energy sector in the cabinet of Yushchenko.

the influence of the Parliament, among other things on agricultural policy-making. The political change with democratic aspirations in Ukraine did not prove to be a sufficient condition in itself for better agricultural policies since the reform process was even to some extent reversed (Anderson & Swinnen, 2008). President Yushchenko criticised that Ukraine had "no responsible, consistent and systemic agrarian policy based on modern research and advanced technologies" and regarded administrative means as unacceptable to regulate the market (UCAB, 2007a). Yet, he did not succeed in imposing decisive measures to carry out reforms accordingly. Neither was Yushchenko capable of enforcing the abolishment of moratorium on land sale, which he regarded as an impediment for development of the effective land use (UCAB, 2007b). The rhetoric of Prime Minister Tymoshenko with regard to agricultural policy, on the other hand, was rather populist. In order to curb the price growth of food products, she, for instance, commanded regional state administrations to intensify work on examination of food prices and to take measures to react to price increases. In 2005, Tymoshenko's Government declared price and margin controls in response to meat price rise, hereby overlooking the policy-induced reasons for price increases and the counterproductive outcome of interventionist measures.[6] Instead, the Government would have been well advised to immediately remove import duties on meat to keep prices low. However, due to the prior closing down of free economic zones and stricter border regulations, import duties could not be evaded anymore. Tymoshenko's reaction to inflated marketing prices in the grain sector envisaged giving privileges to state agents like Khlib Ukrainy and dictating them to pay higher prices to producers instead of stimulating competition (IER, 2005).

In 2005, the Agrarian Fund was founded, a state operator aiming to guarantee the price regulation policy. The tasks of the Agrarian Fund included conducting financial interventions as well as spot, pledge and forward purchases in order to maintain price stability mainly on grain markets. Yet, according to Kobuta et al. (2012), the Agrarian Fund was not efficient in its function as price regulator. Minimum intervention prices for grain were set lower than the actual market prices. Between 2000 and 2010, the volumes of state purchasing transactions were rather insignificant: they did not exceed 4% of gross yield of wheat and 6% of marketable wheat. Lack of valid data on total grain stocks in the country, non-existence of a rapid and accurate assessment of the grain supply and demand balance, deficiencies of the price moni-

[6] According to the German Advisory Group for Economic Reforms in Ukraine (2005), a reason for the meat price rise was a reduced number of herds due to the feed price increases following the drought in 2003. Furthermore, a recent dramatic increase of pensions and public sector salaries boosted the demand for meat. The policy-makers failed to see the fact that, instead of price drops, the price controls led to shifting the supply into shadow, making the commodity even scarcer.

toring system, uncoordinated purchasing activity of the Agrarian Fund and other state trading operators made efficient functioning of the state purchase system impossible. Only state forward purchases of wheat contributed to the mitigation of sharp seasonal decrease of producers' prices during the harvesting period (Kobuta et al., 2012).

The coalition negotiations following parliamentary elections in 2006 brought a new Government under Viktor Yanukovych to power. The latter had been Yushchenko's rival and the beneficiary of the rigged elections leading to the Orange Revolution in 2004 (Cramon-Taubadel et al., 2008). Shortly afterwards, his Minister of Agrarian Policy introduced a new system of licenses for grain exporters which was replaced by a quota system. According to Cramon-Taubadel and Raiser (2006), the losses of grain producers during the marketing year 2006/2007 were estimated at US$ 300 million and the reduction of wheat farm-gate prices at around US$ 25/tonne. Furthermore, the non-transparent character of the quota administration opened the floodgate for corruption (Cramon-Taubadel & Raiser, 2006). In the opinion of some observers, Yanukovych's Government introduced the quota in order to attempt retrieving the costs of election campaigns and coalition agreements (Cramon-Taubadel et al., 2008).

Restrictions of grain export were not limited to the marketing year 2006/2007 but were also applied in 2007/2008, 2010/2011 and 2011/2012. They primarily emerged in the form of quotas, except in May 2011 when the Ukrainian Parliament decided to replace export quotas by taxes on grain exports. In addition, the non-reimbursement of VAT to grain exporters[7], the time-consuming certification standards[8] and the expenditures for compulsory export contract registrations created further burdens to grain traders, the costs of which were often shifted to the producers. A number of studies (BE, 2012; Kobuta et al., 2012; Götz et al., 2013; Kulyk et al., 2014) proved that export restrictions in Ukraine generally induced negative overall effects, whereas export duties were comparably less distortive. The studies concluded that export restrictions temporarily disconnected producer prices with their long-run equilibrium level and increased market instability. Estimates of the size of grain producers' losses in 2010/2011, for instance, vary from US$ 1.9 to 2.6 billion, while the fiscal expenditure on ag-

[7] According to the Ukrainian Grain Association, the State's debt for the non-return of the VAT to grain companies amounted to as much as US$ 315 million in 2011 (Kobuta et al.,2012).

[8] In order to get grain from an elevator into an export port, traders had to obtain three different certificates from three separate bodies, each of which involved its own time-consuming sampling and laboratory procedures. At the end of this process, Ukrainian customs officials could question the certificates and insist on the implementation of additional tests. These quality standards, however, mostly solely Ukrainian or even old Soviet ones, were largely irrelevant in international trade (BE, 2012).

riculture as a whole in 2010 amounted to only US$ 0.9 billion (BE, 2012). As the President of the Association of Farmers and Private Landowners of Ukraine put it: "The Government does not allow to agrarians to earn. In the current year without quotas imposition agricultural producers could be able to earn more, to get the possibility to purchase more technical resources, crop protecting agents and would enter the new year with large-scale capacities, but in the reality, the farms financially suffered, and at the same time, they were under financed. Fuels, crop protecting agents, mineral fertilizers, machinery spares prices face an increase annually, and own products prices keep the cheaper level, than they were. (sic)" (Markevich, 2010).

The findings of above-mentioned studies suggest that export restrictions severely affected grain traders who invested significant resources to implement export and damaged Ukraine's reputation as a reliable host for future investments. The policy of export restrictions, if at all, had a very short-term effect of curbing price increase on foodstuffs. The measures were rather unsuitable to protect the socially vulnerable population in Ukraine, especially given the fact that the share of the poor employed in agriculture was higher than in other sectors. Reductions of farm-gate prices did not automatically decrease consumer prices.[9] The introduction of targeted social policy programmes for the poor could have been a much more effective instrument to solve the problem of food availability.

In 2008, Ukraine became WTO member after almost 14 years of negotiations. Prior to accession, the country adopted 54 national laws of which 21 were related to agriculture. Ukraine's commitments furthermore foresaw five other laws, all of them concerning agri-food matters (OECD, 2011). These obligations involved the reduction of the average level in customs tariff, the alignment of domestic laws with WTO rules and requirements as well as the adjustment of national food safety and quality standards (ibid.).

The Institute for Economic Research and Policy Consulting (IER) in Kiev conducted a study analysing the impact of Ukraine's accession to the World Trade Organization on the national economy. In the framework of the study, a series of surveys was carried out between 2004 and 2013 in order to capture manufacturing managers' views on the consequences of Ukraine's WTO membership. The executives of food industry companies had the most persis-

[9] According to Brümmer et al. (2009), the percentage of wheat in the cost of producing flour is about 80% and the share of wheat flour in the cost of a loaf of bread varies between 40 and 47% in Ukraine. Thus, a 10% rise of wheat price should increase the price of flour by approximately 8% which, consequently, should lead to an increase of 3.2-3.8% at the most in the price of bread (BE, 2012).

tent positive opinions, both before and after Ukraine joined the WTO. The study furthermore showed that WTO-related tariff cuts had a positive impact on the productivity in all analysed industry groups in Ukraine. The greatest positive effect, however, was observed in the group that included the food-processing industry (IER, 2014). One of the important achievements in the implementation of Ukraine's WTO obligations was the elimination of compulsory certification for 17 categories of food products, decreasing the doubling of control functions and reducing compliance costs of producers (BE, 2012).

Negotiations between Ukraine and the European Union on the Deep and Comprehensive Free Trade Area (DCFTA), a trade component of the Association Agreement, began in 2008. The DCFTA foresees the liberalisation of mutual trade within a transition period. For the imports of Ukraine's key agri-food products, such as grains, meat and milk products, the EU would introduce zero-Tariff Rate Quotas (TRQs), while all the others would get free access (OECD, 2013). Ukraine, on the other hand, would open its market step by step for goods from the European Union for around four fifths of its agricultural tariff lines and retain non-zero import tariffs for selected products. In addition, both parties renounced to apply export subsidies to mutually traded agricultural products (ibid.). As estimated by Ryzhenkov et al. (2013), due to the EU import tariffs reduction and despite the binding Tariff Rate Quotas, Ukraine would be able to increase its export of agri-food by about 20%. Furthermore, harmonisation of Ukrainian technical regulations, standards and conformity assessments with EU legislation would substantially lower the non-tariff trade barriers (Ryzhenkov et a., 2013). A positive impact was expected from broader regulatory convergence since the DCFTA covers adjustments not only in trade related spheres but also in other areas such as public procurement, competition policy, public finance, state subsidies, protection of intellectual property and energy policy (Giucci, 2013).

2.3 Main Issues of the Ukrainian Agricultural Economy

2.3.1 Agricultural Support Policies – Domestic Policy Instruments

The Law on State Support to Agriculture, adopted in 2005, provided the foundation for agricultural policies in Ukraine and determined the main support instruments for the sector, including budget, lending, price, regulatory and other spheres of public policies. The law defines the stimulation of agricultural production, the development of the agrarian market as well as the provision of food security as its general objectives. Still, it fails to provide guidelines on the key priorities and principles of the state support allocation, i.e. which sectors or

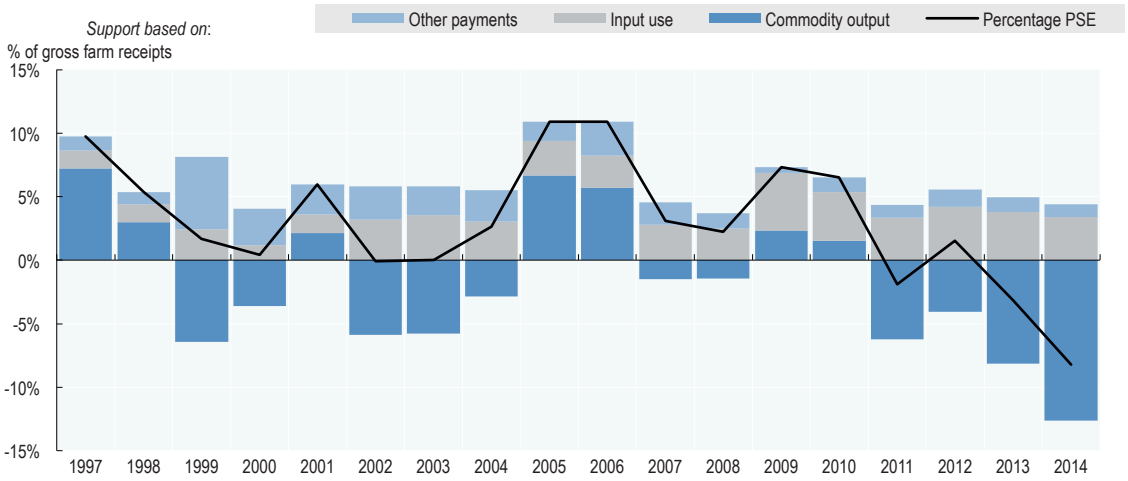
measures should obtain Government funding and which enterprises should be eligible for provisions (Ogarenko, 2014). The State Targeted Programme for Development of the Ukrainian Countryside, introduced in 2007 and valid until 2015, was the first attempt to formulate and implement a co-ordinated approach of agricultural policy objectives. Although the programme identified areas of state support and financing requirements, it did not contain budget commitments (OECD, 2013). The Law On the State Budget of Ukraine annually determines the amounts of funds allocated to the state support programmes for agriculture. However, agricultural budgeting in Ukraine is very unpredictable since the amounts of specific financed measures can change every year. The decision-making mechanisms are not transparent. The agricultural producers usually do not receive information in advance about possible alternations in financing and implementing of support in different programmes (Vysotskyi, 2011).

Following the WTO approach on classification of domestic support policies, Government expenditures for the agricultural sector can be categorised in two sets or "boxes". The first one, the "green box" (or growth-enhancing measures), covers policies with no or at most minimal effects on production, prices and trade. Hence, the application of subsidies within the "green box" is not restricted. They include general measures, like research, training and environmental programmes, and measures for rural development as well as inspection services and income support to farmers decoupled from the production level. The support to agriculture through policies which do not meet the criteria of "green box" instruments is measured by the Aggregate Measurement of Support (AMS) and is covered by the "amber box" (or growth-hampering measures). Measures within the latter include price support policies, input subsidies and direct payments related to the production level. AMS aggregates all product-specific and non-product-specific measures which surpass the so-called de minimis threshold, i.e. amount to more than 5% of the product's value. When a country accedes to WTO, its bound total AMS (net of de minimis AMSs) is defined on the basis of the support provided in the agreed period. In the case of Ukraine, the base period was 2004-2006. The average support of these three years, equivalent to UAH 3043 million, became the basis for the total bound AMS.

Generally, agricultural support policies in Ukraine are more dependent on the current state of public finances than on long-term oriented priorities for agricultural development. Due to the uncertain political situation and budgetary constraints, the level of support to agriculture, mirrored in the Producer Support Estimate (PSE), has been very variable over years (FAO,

2013a). The OECD annually calculates the PSE for the purpose of agricultural policy monitoring. Similar to WTO AMSs, the PSE as an indicator of agricultural support covers Market Price Support (MPS) and budget outlays. However, while the AMS Market Price Support only considers administered prices and does not take into account border protection policies, the PSE covers all transfers to farmers from agricultural policies (including cost of revenue foregone by the Government and other economic agents) and multiplies the gap between domestic and international reference prices by total production of commodity.

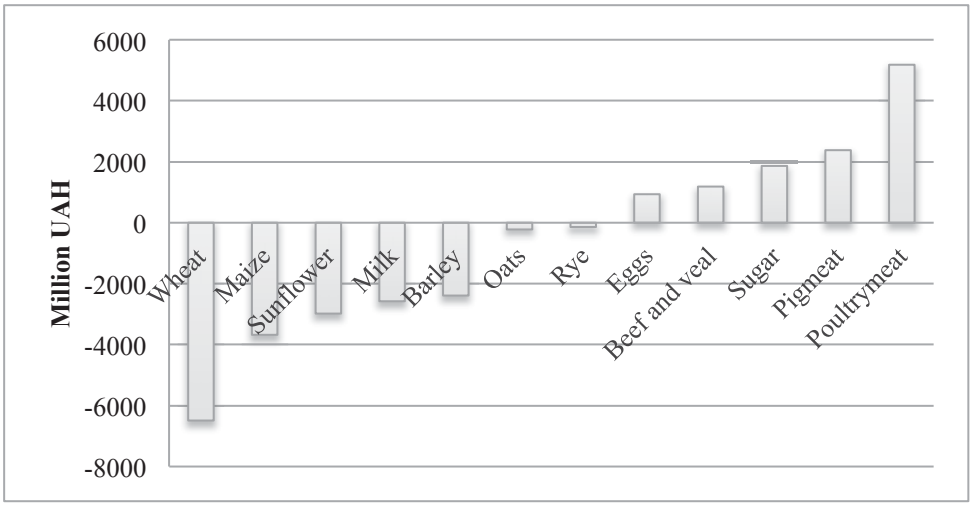
Figure 1 PSE level and composition by support categories in Ukraine, 1997-2014



Source: OECD, 2015b.

Besides Market Price Support, PSE includes payments based on output and input use, area, animal numbers, receipts or income, non-commodity criteria as well as miscellaneous payments. Ukraine's overall level of support is rather modest. Partly negative PSE values are caused by the negative aggregate Market Price Support as producers receive lower prices compared to the reference price level. However, there are substantial differences in producer support across commodities (see figure 2). Producers of export-oriented products such as grain and sunflowers are being implicitly taxed, while import-competing sectors, pig meat, poultry and sugar, on the other hand, are subsidised (OECD, 2013). Despite rather low PSE indicators, some Ukrainian researchers argue that, in terms of GDP share, the state fiscal support on agriculture is relatively high with about 1.62% and exceeds the corresponding figures of other emerging economies and even the OECD average (Nivyevskiy et al., 2015).

Figure 2 Single commodity transfer average 2004-2014, in UAH million



Source: Own diagram based on OECD data from different years.

Ukraine uses a number of domestic price policies including the determination of reference purchase prices, the execution of governmental purchases as well as the granting of loans against pledged grain. The State Agrarian Fund carries out domestic price support measures. Initially founded for the interventions on grain markets, the Fund has become progressively involved in other activities, such as sugar commodity interventions, state purchases and sales of a number of agricultural and food products, forward contracting, flour processing and wholesaling as well as sales of diesel fuel and mineral fertilisers to agricultural producers (Kobuta et al., 2012). For instance, in order to keep the bread prices low, the Agrarian Fund was involved in the processing and sales of flour at administered prices to a list of authorised bakeries, which were determined by the regional authorities. The Fund provided Ukrainian agricultural producers with loans against the pledge of grain. In 2010, for instance, the loan rate was set at 60% of the minimum purchase price of grain (ibid.). In accordance with this procedure, grain producers could obtain concessional loans and had five business days to deliver grain to a grain storage facility. If the borrower failed to reimburse the loan or interest, the Agrarian Fund became the owner of the pledged grain (Demyanenko, 2012).

Table 2 Resources allocated to the Agrarian Fund, in UAH million

2009	2010	2011	2012
3238	2332	2900	5900

Source: OECD 2011, 2013.

The specific Government regulations in Ukraine annually determine the variety of products and the time periods during which the minimum and maximum intervention prices are applied. For example, in 2009-2010, the list of commodities that were the "objects to state regulation" included wheat, rye, barley, maize, flour and sugar (OECD, 2011). Since the minimum Government prices were considered as indicative floor price references, they were not binding for private market transactions and could not be regarded as guaranteed prices. Furthermore, as specified by Ukraine's commitment in the course of its WTO accession, minimum intervention prices could not exceed market levels (ibid.).

Ukraine applies the Market Price Support to sugar via a sugar quota regime. Sugar is the only commodity for which Ukraine reported the Market Price Support in the base period 2004-2006 during WTO accession (Brink, 2015). The Government sets the annual national production quota and the minimum within-quota price for the raw material (sugar beet) as well as the processed product (sugar). In the context of WTO accession, previously used quotas for sugar with destination outside of Ukraine had to be abolished (FAO, 2013a). The sugar quota regime was accompanied by payments per sown hectare in 2010. In the same year the minimum administered price for sugar produced from sugar beets was fixed at UAH 4250/tonne (US$ 535/tonne). Given the average world market price of US$ 470/tonne in 2010, this meant that the domestic price was by 14% higher (ibid.). Even compared to 2009, the administered price increased by 36%. The MPS for sugar became the second largest AMS item in the Ukrainian WTO report (WTO, 2012). Moreover, the controversial application of an adjusted external reference price[10] instead of a fixed one, as foreseen by the agreement rules, reduced the domestic and external price gap considerably. If the fixed prices had been used, Ukraine would even have exceeded the bound total AMS in 2010 (Brink, 2015). Due to the high amount of crops in the following years, sugar quota volumes as well as minimum in-quota prices were reduced. Legislative drafts attempting to change the sugar quota regime mechanisms were not successful (OECD, 2015b).

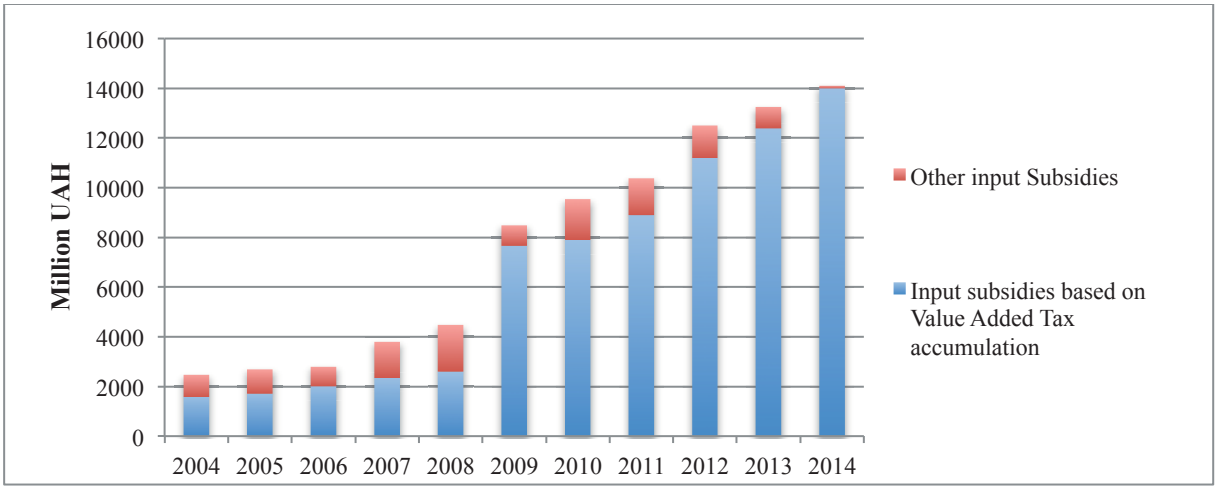
The previously rather important direct output as well as the area and per animal payments have become marginal since the end of the 2000s. This was due to the budget austerity against the backdrop of internal political instability and the global economic crisis in 2008. The average sum of per-tonne payments between 2009 and 2014 almost halved compared to the corre-

[10] In the WTO notification Ukraine used as external reference price the average price from 2004-2006 increased by the factor corresponding to rise of consumer price index since 2006 (Brink, 2015).

sponding amount between 2004 and 2008. During all these years, over 90% of the payments had been allocated to livestock products including beef and veal, milk, pig meat, poultry, eggs and sheep meat. This support was partly financed through direct budgetary outlays in the framework of the state programme for livestock breeding and partly through the foregone fiscal revenues (FAO, 2013a). Processors purchasing milk, cattle, pigs and poultry accumulated VAT due to the processed products on separate bank accounts and transferred the funds to livestock producers as price top-ups instead of paying the tax to the state budget (OECD, 2013). This mechanism has been described as redirection of processors' VAT. Between 2010 and 2012, it changed numerous times and hence only functioned with interruptions and uncertainty (ibid.). For instance, per-tonne payments allocated to livestock products decreased drastically from UAH 2060 million in 2010 to only UAH 14.5 million in 2011 (Betliy, 2014). According to the procedure put in place since 2012, the processors pay a part of the VAT to a special fund of the central budget (20% in 2012, 40% in 2013 and 50% in 2014) and the rest to a special account. The VAT transferred to the special fund of the budget is applied to finance measures in the framework of the state programme of livestock support. The rest continues to be used for top-ups to livestock supplying producers. From 2015 on, the VAT of processors has to be fully paid to the special fund of the central budget (ibid.).

While the level of support based on commodity output stays rather volatile, the payments based on input use have shown a general upward trend since 2000. It is important to emphasise that the budgetary disbursements only account for a small part of input subsidies in Ukraine. The by far largest and steadily increasing component of input subsidies, making up even the largest single payment in the Ukrainian PSE, is based on the so-called VAT accumulation mechanism (OECD, 2013). Under the Ukrainian VAT provisions for agriculture, producers do not transfer the difference between VAT revenue and VAT expense to the state budget. Instead, these funds are being placed on a special account and can be used to purchase inputs for agricultural production (Brink, 2015). Since 2009, the accumulated funds are directed to refund the VAT on purchased inputs, while the residual sum can be used for any other production purposes (OECD, 2013). Ukraine applies the regular rate of VAT amounting to 20% for agricultural products.

Figure 3 Payments on agricultural sector based on input use in Ukraine, in UAH million, 2004-2014



Source: OECD, 2015b.

According to the Tax Code, the VAT accumulation system will remain effective until 2018. Currently, however, intensive discussions are held on the reform options of the existing system. The pressure for the change is explained by the increasing gap between VAT inflow to the budget and VAT outflow to agricultural producers (Betliy, 2014). Due to the pro-cyclical nature of the VAT accumulation system, this gap is especially a concern in the years of good economic performance of agriculture, as the higher output and export values lead to higher forgone fiscal revenues (ibid.). There are concerns that the agricultural VAT tax regime distributes the largest share of subsidies to a relatively small number of large producers rather than tens of thousands of smallholders (Sedik & Lerman, 2015). Besides, according to obligations within the framework of the Association Agreement with the EU, Ukraine's tax legislation, including the VAT regime, will be subject to change until 2020 in order to comply with the EU standards (Betliy, 2014).

Ukraine provides several other types of input subsidies, the shares of which are very modest, though. One of them, the concessional credit, offered up to and including 2012, entitled eligible agrarian producers to receive partial reimbursements on interest payments for short, medium and long-term loans (OECD, 2013). Furthermore, the Government provided investment grants for manufactured agricultural machinery and equipment by refunding 40% of the purchase price (until 2012) and by procurement and lease of machinery to agricultural producers (Demyanenko, 2012). Other input payments included establishment and maintenance of orchards and vineyards, cost compensation for construction and renovation of animal farms and

complexes as well as subsidies for livestock breeding and purchased seeds (OECD, 2013). In addition to the limited financial endowment, these programmes lacked continuity and were subject to uncertainty since they were not provided every year.

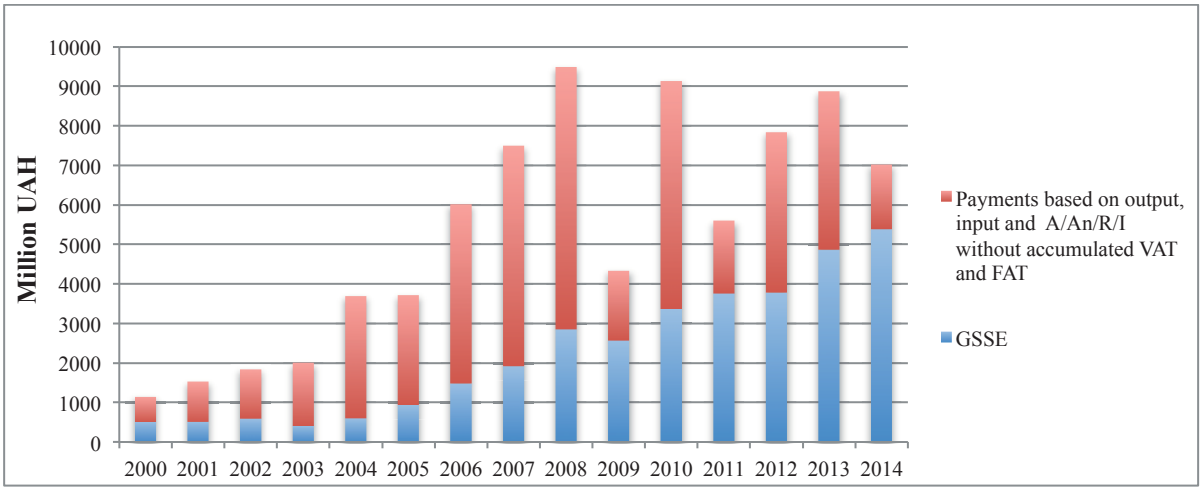
Prior to 2015, agricultural producers in Ukraine were eligible for Fixed Agricultural Tax (FAT) (see Chapter 2.2.4). Instead of a number of taxes (originally twelve), including a profit tax, farms had to pay a negligible average amount of UAH 5.25 per hectare per year (Otten, 2012). Furthermore, until 2009, those who paid the FAT profited from a lower rate on contributions to the pension fund. The state budget reimbursed the residual between the reduced and standard rates on salaries to the pension fund, which in 2009 amounted to 25.5% and 33.3% respectively (OECD, 2013). Starting from 2015, the FAT was replaced by Single Tax (ST) which substitutes three types of taxes: income tax, land tax and a special water use fee. The principal difference between ST and FAT lies in the evaluation of the taxable land. The tax on agricultural producers increased nominally by 21 times (Otten, 2015). Given the significant devaluation of the Ukrainian local currency, this corresponds approximately to a tenfold rise. However, compared to the standard tax treatment[11], amounting to 18%, ST is still relatively profitable (ibid.).

Additional to PSEs, the OECD identifies policies and measures covered by the General Services Support Estimate (GSSE) indicator. There are a number of similarities between GSSE and the WTO "green box" regarding included items. However, there is no general concordance between measures of these two categories (Brink, 2015). Depending on the implementation procedure, some budgetary payments covered by the green box, such as environmental programmes, disaster reliefs or income support without requirement to produce, are not recorded within GSSE, but within PSE (Melyukhina, 2013). In the case of Ukraine, however, green box measures include largely general services. As decoupled payments without requirements to produce are non-existent, policies in the GSSE and the green box overlap considerably. As shown by OECD data, the GSSE services in Ukraine (i.e. growth-enhancing measures) increased over the years in absolute and relative terms compared to the Government expenditures for production subsidies without taking into account the forgone revenues in form of tax privileges. Due to the extremely difficult budget situation that resulted from the adverse political situation in Ukraine since 2013, fiscal expenditures on agriculture declined

[11] Farms also have the option to choose the standard taxation, which would be beneficial for loss-making businesses, as in this case no taxes would be due (Otten, 2015).

substantially. In 2014, direct budget transfers on production subsidies amounted to about UAH 0.6 billion, which is about 8 times lower than in 2007 (Ogarenko, 2015).

Figure 4 Budget expenditure in Ukraine on agriculture, in UAH million, 2000-2014



The letters refer to Area (A), Animal Numbers (AN), Receipts (R) or Income (I).
Source: OECD, 2015b.

Nivyevskiy (2006, 2015) and Ogarenko (2014) question the effectiveness and efficiency of Government spending on agriculture and consider the drastic cuts of budgetary outlays rather as an opportunity for reforms. Corruption is seen as the main problem in various support programmes for the agricultural sector and rural areas. The application requirements for Government funds are complex and non-transparent. The allocation of subsidies often depends on paying "kickbacks". As the lion's share of subsidies simply does not reach the producers, subsidy support cannot have affected the agricultural development in the country significantly (Nivyevskiy, 2015). According to the results of an audit on state support programmes, conducted by the accounting chamber of Ukraine, the desired targets of the agricultural support were not achieved: the social infrastructure continued to deteriorate and the demographic crisis was impaired (Ogarenko, 2014).

2.3.2 Land Markets

Between 1991 and 2000, several policies were implemented with the aim to establish individual property rights for agricultural land. However, it was not earlier than 1999 that the presidential decree allowed the transformation of collective enterprises into other forms of ownership and, in contrast to the previous ad hoc policies, initiated the second round of land reforms

(Lerman et al., 2007). As a result, the rural residents became owners of about 70% of the agricultural or 80% of the arable land. The reform thus opened up new perspectives for them to earn some income by renting land (ibid.). By the middle of 2012, over 93% of all certificate holders of land parcels received states acts (deeds) to the rights of private ownership (Murova, 2015).

Within the second stage of the land reforms, the focus was set on the creation of the agricultural land market. A properly functioning land market, which allows agricultural land to be transferred from less to more productive producers, is an essential condition for the development of agriculture.

In 2001, Verkhovna Rada adopted the new Land Code, which recognised private land ownership, established procedures to identify size and borders of land parcels and enabled certain land transactions (Lerman et al., 2007). Simultaneously to the implementation of the Land Code, however, Ukraine enacted the moratorium on land sales.[12] According to Kobzev (2005), it could be considered as a political compromise towards conservative political circles in order to acquire their support to pass the Land Code. The decision reflected the concerns that, without prohibition, the agricultural land would be the object of large-scale land-grabbing and would end up in the hands of wealthy foreigners. Moratorium on land purchase, originally meant as a temporary regulation due to the absence of clear land inventory and legal provisions, was initially set to expire on the 1st of January 2005. However, it has been prolonged several times (Nizalov et al., 2015). The final prolongation lasted until the 1st of January 2017. Despite this prohibition, agricultural land has in fact unofficially been sold on the parallel market. Moreover, legislative loopholes allowed the alienation of agricultural lands by applying the following schemes: leasing agreements with buyout after moratorium lifting, issuance of certificates enabling third parties to purchase land, making preliminary contracts for land transfers in the future (Demyanenko & Hetman, 2008). There is no precise information available about the extent and the possible recent and future impact of such shadow operations, though (Borodina, 2007). Besides the moratorium on land sales, there are some further limiting rules on land access and land use. The right to own land is reserved for natural persons, but not allowed for legal entities or foreigners (Keyzer et al., 2012). In order to be granted the land ownership, the recipients have to fulfil certain conditions, such as permanent

[12] Only land plots for subsistence farming purposes could be sold, since they did not fall under the "agricultural land" category.

residence in the district. The maximum land size an individual can own is limited to 100 hectares (ibid.).

The land privatisation process in Ukraine created a new class of landowners with parcels of an average size ranging from 3 to 6 hectares in different regions. However, having received land plots in ownership and being deprived of the possibility to fully dispose of this land, many rural residents leased it directly to the newly established private agricultural enterprises. Only around 40000 peasant farmers started cultivating their land rather than leasing it (Keyzer et al., 2012). As a result, a versatile land lease market emerged in Ukraine. In 2014, more than 20 million ha, i.e. 70% of privately owned arable land, was rented out. About 4.7 million rental contracts were signed every year (Nizalov et al., 2015). The land lease practice brings certain advantages. The land lease market decreases entry and exit costs for agricultural enterprises, since the direct investment in land acquisition is minimal, and thus contributes to overall productivity growth (ibid.). According to Deininger et al. (2013), the key driver of higher agricultural productivity in Ukraine between 2001 and 2011 was the exit of underperforming farms and their replacement by more efficient ones. The experience in developed market economies demonstrates that significant parts of farmers do not own the land they cultivate but only lease it (Lerman et al., 2002). Generally, security and transferability of tenure are even more important determinants of productivity and efficiency than legal ownership rights (ibid.).

The rental market for agricultural land in Ukraine, however, is beset by a number of persistent limitations, adversely influencing agricultural development. Many local land markets are dominated by a relatively small number of land lessees. Insufficient competition on the land lease market reduces the bargaining power of landowners and leads to quasi-monopsony power of land users with a negative effect on the leasing payment rate (BE, 2012). A study on the influence of competition on the rental rates of agricultural land in Ukraine demonstrates that the more private farms exist, the higher are the lease prices in a region (Kuhn & Demyanenko, 2004). Furthermore, the lessees often offer the only possibility for employment in the village. The asymmetry of bargaining power between land leasers and tenants is aggravated by the insufficient information on the part of landowners about existing legislation, options of land market transactions and procedures for securing their rights (Kobzev, 2005). This is particularly true for the most vulnerable social groups (retirees and disabled persons), which are in a less privileged position to access relevant information and defend their rights

(ibid.). In 2011, for instance, more than half of the leasing contracts were signed with rural pensioners (Kobets, 2011). Until 2010, the average rent for one hectare of agricultural land did not exceed the equivalent of US$ 40 per year. Later, however, when the Government decided to arbitrarily increase the farmland value and correspondingly recommended a minimum land lease fee[13], the average rent rates went up to approximately US$ 70 per hectare (Sarna, 2014). However, out of the 4.6 million land lease agreements signed in 2011, almost 39% of the stated lease rates were below 3% of the normative land value (Keyzer et al., 2012). Thus, leasing costs in Ukraine still remain comparatively low and account for only a fraction of leasing charges in the EU. A survey conducted by the United States Agency for International Development (USAID, 2014) found out that only 20.5% of the landowners were aware of the minimum amount of rent recommended by the Government. In addition, the lessors often do not even know who is actually leasing their land since larger tenants are also leasing from smaller lessees (Plank, 2013).

Another limitation that is inherent in the present land-lease market is related to the specifics of institutional settings. Since the moratorium on land sales was initially established as a temporary measure, there is no certainty about the future design of property rights and parameters of land markets (Nizalov et al., 2015). In anticipation of the further market developments, the landowners are reluctant to sign long-term obligations and thus, short-term contracts prevail. Long-term contracting is furthermore hampered by Ukrainian land legislation, as the land lease period is limited to 50 years. With the multiple prolongation of the land sale ban, however, the average contract length slowly increases (ibid.). While leasing agreements concluded for a period of less than five years amounted to 55% of all leasing contracts by the middle of 2000 (Kobzev, 2005), this share decreased to 44% by 2013. The share of contracts with a duration of more than 10 years increased from 2.7% to 13.9% in the same period (Nizalov et al., 2015). Nevertheless, land lease agreements still remain predominantly short-term. In view of that, the tenants have few incentives to make durable investments and prefer crops with which the returns can be quickly captured. As a result, the Ukrainian agriculture suffers from underinvestment in high value-added crops with longer investment cycle (ibid.). Furthermore, the lessees are less inclined to ensuring sustainable and effective land cultivation. Apart from the current efforts, there were no mechanisms in the hands of landowners or the state to control land use for a long time. Agrochemical laboratories responsible for the evaluation of the state of the soil and fertility before and after lease periods were non-existent. The corresponding indicators were thus not included in lease contracts (Demyanenko & Hetman, 2008).

[13] The land fee was supposed to amount to 3% of the normative land price.

Establishing a functioning land market requires the underlying institutional settings to involve clearly defined rules on land sales and ownership rights. The key components of the institutional basis, including a cadastre and a register of land plots, are still in the process of transition. The cadastre, made with the help of Geographical Informational Systems (GIS), focuses on the physical properties of land parcels. The register of land plots, on the other hand, describes their legal characteristics and indicates past and present landowners (Demyanenko, 2005). In some countries, a single body carries out these two functions, while in other states cadastre and register are divided. After the enactment of the Land Code in 2002, Derzhkomzen, i.e. the State Committee of Ukraine for Land Resources, was entrusted to carry out the State Land Cadastre, including registration of land parcels. However, the Ministry of Justice also claimed to be the responsible entity for registration of property rights (Fedorchenko & Yanov, 2008). The disputes as to which agency should administer the registration of landownership rights continued for several years. The fragmented political landscape following the Orange Revolution in Ukraine and diverging opinions of President, Government and Parliament about the development of the cadastre and registry system complicated the formulation of a coherent public policy (ibid.). It was not until 2012, that Ukraine adopted the Law on Cadastre, which introduced the dual system of recording rights. The State Land Cadastre continues to record the physical characteristics of land parcels, while the State Registry of Immobile Property Rights documents the property rights of the land plots (including the transfer of ownership rights as well as mortgage) and their development history (ibid.). Prior to the introduction of the Law on the State Land Cadastre, there was no reliable land database in Ukraine. The cadastre existed only on paper and was randomly adjusted, resulting in corruption and a lack of transparency (Moroz, H., 2013). The current system provides an open map to identify the location of land parcels. However, there are a large number of inconsistencies and technical errors (Lapa et al., 2015). Given the data discrepancies between the cadastre and the land registry, the dual system of recording has proved to be complicated, time consuming and expensive, creating a backlog with registration of land rental rights (Yaroshko, 2013). Lessees of large agricultural land areas have to register a number of separate contracts with several landowners. This is connected with high transaction costs, especially because the owners have to appear in person for the actual registration (ibid.). The landowners predominantly receive their rents in form of agricultural products and services. Although the share of in-kind payments is decreasing, it still contributed to over 70% of paid rents in 2011 (Kobets, 2011).

A number of experts would prefer to lift the moratorium but to restrict the size of traded land. They consider the prohibition of land sales and purchases to be the major impediment for the development of Ukrainian agriculture, preserving a highly fragmented land ownership. The prohibition of land sales makes it impossible to use agricultural lands as collateral. This damages the creditworthiness of agricultural enterprises, especially medium and small ones, and negatively affects the amount of investments in the sector. However, even if the moratorium is lifted, it is unlikely that the access to financial funds will improve immediately (BE, 2012). Initial land prices and their collateral values are anticipated to be low due to relatively inefficient agricultural input and output markets. The expected limited competition on the land market and the information asymmetry will tend to further push down the farmland prices (Nivyevskiy & Kandul, 2011). However, under favourable institutional conditions and if agricultural lands move to the farms with a high productivity level, the cancellation of the moratorium would contribute to the structural change which, on the other hand, would improve financing, investment and growth perspectives (ibid.). The Ukrainian political parties tend to advocate the lifting of the moratorium while they are in power, but once in opposition, they oppose it (Åslund, 2015). Therefore, it does not surprise that the Ukrainian political parties have no clear position regarding the development of a land market (Plank, 2013). The change of the land market's status quo does not seem to be perceived as urgent by the agribusiness or by the rural population (OECD, 2013). In 2012, about 59% of the landowners and 57% of the managers expressed negative attitudes towards a lifting of the moratorium.[14] Common fears connected with the liberalisation of the land trade are "foreign" land ownership, enrichment of wealthy people and displacement of farmers by big capital, abandoning of crop rotation etc. Given their tight liquidity situation, many agricultural producers apprehend that purchase of land would use up their limited financial means (Strubenhoff, 2011).

In 2012, the government-owned State Land Bank (SLB) was established and supposed to provide concessional loans to agricultural producers under the land mortgage. Furthermore, the Land Bank took on the task of managing the state-owned land plots and supporting the National Programme for the Development of the Agricultural Sector (Kirchner & Kravchuk, 2012). Given the potential conflicts of interests due to different functions, there were doubts

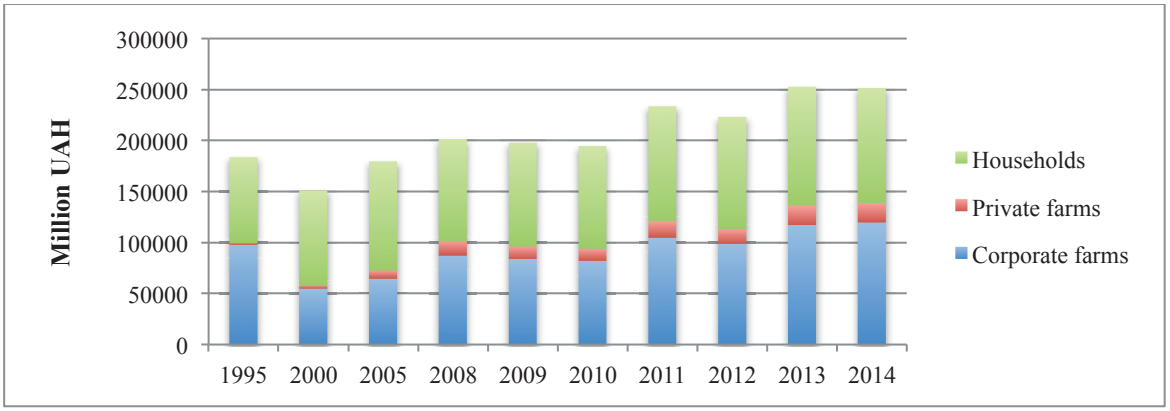
[14] The data represents the results of a survey on the attitude of landowners and agrarians to the land reform conducted by the USAID AgrInvest and the Center for Social Studies, i.e. the Sociological Institute of the Ukrainian National Academy in 2012.

whether the Land Bank was the appropriate instrument to improve the access to credits for small and medium-sized farms (ibid.). Some observers presumed that the Land Bank was built up for the benefit of the "Family", a clan linked to the son of President Yanukovych (Åslund, 2015). On the insistence of the World Bank, the new Government abolished the Land Bank in May 2014 (ibid.).

2.3.3 Farming Structure

The current farming structure in Ukraine is divided into individual and corporate farms (Keyzer et al., 2012). Since there are relatively few medium-sized commercial farms in Ukraine, experts speak of a dual character of the farming system (Murova, 2015). A large number of very small farms control a tiny share of agricultural land and a very small number of large farms operate a disproportionately large land area. The individual sector is divided in private (peasant) farms and household plots. Both types are family farms and operate mainly family-owned land. The growth is achieved by the leasing of additional land from other owners. The main difference between these two individual farm categories is the size and commercial orientation (Lerman & Sedik, 2007). Peasant farms, contrary to households, are registered legal entities (Nivyevskiy et al., 2015). While private farms are larger and rely on sales of agricultural products as their major source of income, households produce primarily for their own consumption purposes. Additionally, the households sell some products on local farmer's markets in order to generate a certain small supplementary income. The private farms, which currently cultivate on an average agricultural area of 100 ha, constituted 80% of all agricultural businesses founded after 1991. However, their development began to lose momentum in the middle of the past decade (Sarna, 2014). The amount of such farms decreased from 42400 in 2005 to 39428 in 2014 (State Statistics Service of Ukraine, 2014). Although private farms account for the majority of agricultural enterprises, their contribution to national agricultural output has remained modest.

Figure 5 Production volume of different types of farms in Ukraine, in UAH million, in 2010 prices



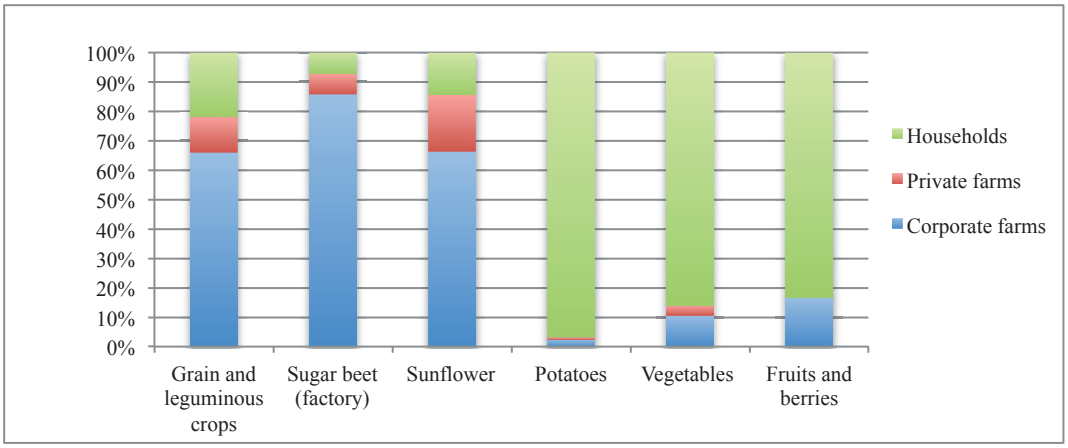
Source: State Statistics Service of Ukraine, different years.

Households in rural and partly in urban areas operate over 4 million plots with a legal norm size of 2 ha. However, households with land certificates may cultivate a far larger area (Keyzer et al., 2012). The household sector expanded fast between 1990 and 2000, since a lot of rural and even some urban residents resorted to subsistence farming in order to cope with the challenging initial period of transition. The contribution of households to national agricultural output increased from 29.6% in 1990 to 61.6% in 2000 (Nizalov et al., 2015). Despite the substantial recovery of the commercial sector, the contribution of households amounting to 44.9% in 2015 remains still high.

The corporate sector consists of relatively large agricultural enterprises which have replaced traditional collective and state farms in the process of the reforms. They are organised as private corporations with two or more shareholders, operate mainly on leased land and have a strongly commercial orientation (Lerman & Sedik, 2007). Currently, corporate farms in Ukraine are defined as legal entities and have various organisational forms. The sector includes private and state enterprises, producers' co-operatives and business partnerships as well as other types of businesses.

Corporate farms mainly supply commercially attractive and export-oriented products and have high shares in the production of corn, sunflower, wheat, rapeseeds, soybeans, sugar beet, pork and poultry. Individual farms mainly provide food supply for the domestic market. Households are particularly dominant in the production of vegetables, potatoes, fruits, raw milk, beef and veal.

Figure 6 Production percentage shares of different types of farms in 2014



Source: State Statistics Service of Ukraine, 2014.

The institutional uncertainty about property rights influences not only the pattern of land use but also the crop mix. Lessees of land often prefer crops where returns can be seized easily (Nizalov et al., 2015). Thus, commercial farms prefer cultivating grains and oilseeds over vegetables and fruits, which necessitate irrigation or greenhouses for extensive production. As a result, the Ukrainian agriculture suffers from underinvestment in crops with longer investment cycles and higher value added (ibid.).

Within the category of corporate farms, the group of businesses that operates more than 10 000 ha has grown considerably since 2004. The interim stadium of Ukraine's land-reform process paved the way for the formation of agro-holdings[15], i.e. vertically integrated large agricultural enterprises (Plank, 2013). Especially between 2007 and 2009, there was a steadily growing trend for the development of agro-holdings, with some of them acquiring over 1 million hectare land (Lapa et al., 2015). Starting out as small-scale private farms established back in the 1990s by the managers of former collective farms, many large agricultural enterprises rapidly grew in the second half of the last decade, mainly on the basis of leased agricultural land. Through mergers and acquisitions of smaller players, they managed to consolidate large areas of farmland. Currently, agro-holding structures in Ukraine often comprise of many large enterprises in different locations connected by a common corporate home (Meyers & Goychuk, 2015).

[15] Agro-holdings are defined as a consolidated set of a parent and controlled subsidiary agricultural enterprises operating 10 000 ha or more agricultural land (Lapa et al., 2015).

Development of large-scale farms was facilitated by a number of favouring conditions since the middle of the last decade. The lack of the required institutional and legislative framework for conducting effective businesses, inadequate state policies as well as the absence of a fully-fledged agricultural land market facilitated the emergence of large-scale farms (Demyanenko, 2008). Through vertical integration, firms could reduce the uncertainties connected with contract enforcement. Operational profits could be raised due to the access to cheap raw materials via integration and conducting activities along the whole value chain (ibid.).

Table 3 Distribution of different types of farms by agricultural land size in 2014

Corporate farms			Individual farms					
			Private farms			Household plots		
Farm size (ha)	**Percentage share of total numbers (13 115)**	**Percentage share of total area (16 908.1 thsd. ha)**	**Farm size (ha)**	**Percentage share of total numbers (39 428)**	**Percentage share of total area (4 621.7 thsd. ha)**	**Farm size (ha)**	**Percentage share of total numbers (41 368 thsd.)**	**Percentage share of total area (6 296.5 thsd. ha)**
<1000	47.3	10.6	<50	59.3	12	<0.5	51.1	11.7
1000.1-10000	30.4	63.1	50.1-1000	26.1	47.1	0.51-10	47.4	58.9
>10000	1.4	26.3	>1000	2.3	40.9	>10	1.5	29.4
Without agr. land	20.9	x	Without agr. land	12.3	x			
Total	100	100	Total	100	100	Total	100	100

Source: State Statistics Service of Ukraine, 2014, after Keyzer et al. (2012).

Given the infrastructural deficits, the engagement in agricultural production, food processing, service maintenance, logistics, sales and other activities brought better coordination, controllability and steadiness of the main business processes (Kobuta et al., 2012). Since 2005, the global markets have experienced a substantial rise of demand for agricultural products. Commodities especially relevant for Ukrainian agricultural exports like wheat, barley and corn were traded at increasingly higher prices. Thus, investments into export-oriented agricultural sub-sectors were getting more and more attractive. Furthermore, agro-holdings could take advantages of low labour and land costs as well as tax privileges (Demyanenko, 2008). Large agricultural enterprises were the main recipients of state subsidies, as they were able to use

their contacts in the governmental institutions and to employ experienced economists and lawyers to obtain these funds. In 2005 for instance, only 10% of the agricultural enterprises received 80% of state support (ibid.).

There are no official statistics on the exact number of agro-holdings in Ukraine or the amount of land in their use. An increasing number of the studies, however, provide a useful approximation (Meyers & Goychuk, 2015). According to AgriSurvey (2014), agro-holdings are estimated to operate 5.8 million hectares or almost 28% of all agricultural lands that are in use by agricultural enterprises.[16] However, since 2009, land consolidation processes seem to slow down, as companies have abandoned the active, but sometimes chaotic, practice of land acquisition. Instead, a number of agro-holdings try to concentrate on improving the production efficiency, strengthening their market position in specific segments and enhancing their infrastructure (Lapa et al., 2015).

Comparative studies about the productivity and efficiency of different types of farms in Ukraine, however, could not provide a clear-cut picture about the superiority of any category. Lerman and Sedik (2007) found no evidence that large corporate farms perform better in terms of productivity than much smaller private farms.[17] With regard to the emergence of agro-holdings, some researchers assumed that the vertical integration and absence of intermediary structures would bring them advantages compared to other types of agricultural producers. Furthermore, the use of modern equipment and machinery, the capability to optimise cash-flow between different types of activities, as well as up-to-date production processes would advance productivity and reduce costs (Demyanenko, 2008; Melnyk, 2013). Kobuta et al. (2012) concluded that the agro-holdings achieved higher yields per unit in comparison with other producers as an indicator of partial productivity. Yet, considering the overall productivity, agro-holdings incurred much larger production costs per one ton of products. The profitability of the sold products by agro-holding enterprises in 2009 turned out to be even slightly below the average. The experts assume that, among other reasons, the accumulation of the land by takeover of less efficient enterprises, high investments in new technologies, increasing costs of loans after the financial crisis as well as costs of multilevel hierarchy may have been the factors influencing the productivity of agro-holdings. Results observed by

[16] Compared to 2013, the total land bank of agro-holdings declined by 0.19 million ha, whereas the share of land use increased from 27.4% to 27.9% due to the exclusion from the calculations of Crimean agricultural land (Lapa et al., 2015).
[17] Household plots, as the main component of the individual sector, however, were not included in the analysis due to missing data.

Balmann et al. (2013) were similar to the findings of Kobuta et al. (2012): Between 2008 and 2012, agro-holding farms were more productive in terms of output per input compared to agricultural enterprises not belonging to agro-holdings. Nevertheless, given their specific input structure, agro-holdings did not exhibit a significantly higher or lower efficiency than other agricultural enterprises. In recent years, however, the agro-holdings experienced increasing profitability, driven by time-lagged dynamic effects of increasing intensities (Balmann et al., 2013). The coincidence of the increasing productivity in the agricultural sector in the last decade with the emergence and development of agro-holdings may be interpreted as the evidence of economies of scale and superiority of very large farms (Deininger et al., 2013). According to Deininger et al. (2013), higher yields and profits of agro-holdings were attributed to rayon- and farm-specific aspects including access to infrastructure and managerial skills rather than economies of scales. The growth of productivity between 2001 and 2011 was driven not by farm expansion but by exit of unproductive and entry of more efficient farms.

The emergence of agro-holdings has created a new socio-economic situation in rural areas. Even though some mega farms are aware of their responsibilities and support rural infrastructure, the increasing influence of agro-holdings is associated with some social and environmental risks (Meyers & Goychuk, 2015). The main one is the disconnection of mega farms and the rural areas where they operate. Agro-holdings tend to displace a considerable number of agricultural workers, which reduces employment and incomes in the countryside. The tendency of large agro-holdings to engage in monoculture practices deteriorates land quality and causes other environmental external risks (ibid.). After the transformation into branches or divisions of agro-holdings, former Collective Agricultural Enterprises lost their status as legal entity. As the headquarters of agro-holdings are frequently located in the larger cities, taxes are rarely paid into local rural budgets (Demyanenko, 2008).

Some experts (Visser & Spoor, 2011; Mamonova, 2012; Plank, 2013) fear, that the development of agro-holdings represents an example of the “land-grabbing” phenomenon, where large shares of Ukraine’s agricultural land are concentrated in the hands of a few foreign or domestic investors. The researchers argue, that the weak law enforcement in post-Soviet states offers opportunities to the agro-holdings to arrange corrupt land deals by bypassing the official regulations, misusing the knowledge gap vis-à-vis the local population in regard to land regulations and infringing on the rights of the local landholders. As a result, this might

have far-reaching consequences for the livelihoods of the rural population which already has few rights and low incomes (Visser & Spoor, 2011).

All in all, there are different views and assessments on the role of mega farms as major players in the Ukrainian agricultural system. However, whether the benefits provided by agro-holdings outweigh the risks or vice versa is yet to be determined (Meyers & Goychuk, 2015).

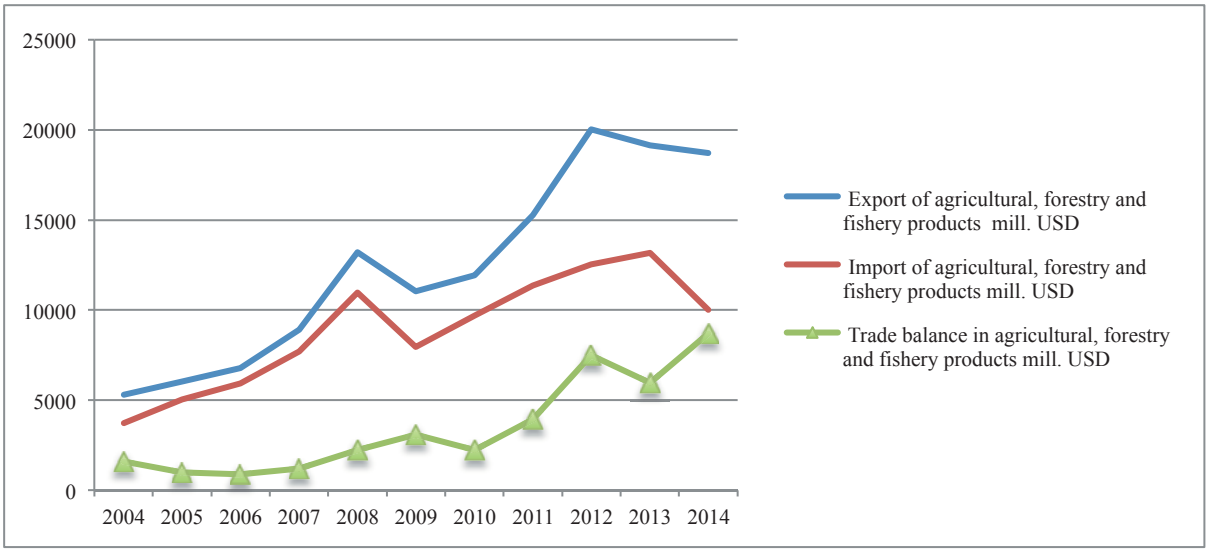
2.3.4 Agricultural Foreign Trade Policy

During 2004-2014, the agricultural trade volume in Ukraine increased substantially. The export value of agricultural production and processed goods rose by more than 4 and the value of import by more than 3 times. The share of agri-food products in the total export increased from 9.8% to 31.5% in the same period. The foreign trade balance for agricultural products, which has always been positive in Ukraine, increased steadily and equalled US$ 10.6 billion in 2014 (Nivyevskiy et al., 2015). The significant rise of agricultural export shares was mainly driven by the increased demand for agri-food products on the global market as well as the relatively poor performance of the rest of the Ukrainian industry. In the future, the share of agriculture can increase further as service sector usually grows slowly and the agricultural productivity in Ukraine is far from having fully utilised its potential (ibid.).

The main Ukrainian agricultural export commodities include cereals, oilseeds and vegetable oils. Between 2009 and 2014, export of cereals increased from US$ 2.5 to 6.5 billion. In 2014, Ukraine exported 18 million tonnes of maize, 2.7 million tonnes of barley as well as 11 million tonnes of wheat and achieved respectively the 3rd, 4th and 6th place among the largest exporters of these commodities worldwide (Pavlenko, 2015). With a predominantly export-oriented sunflower oil industry, selling above 90% of its production abroad, Ukraine is the largest producer of sunflower oil in the World (Nivyevskiy et al., 2015).

In 2014, Ukrainian agri-food exports to the EU equalled US$ 5 billion. The value of agricultural exports to the EU has increased by more than 5 times since 2004, whereas the share of exports with EU countries as destination rose only slightly from 23% to about 27% (ibid.). The implementation of the DCFTA with the EU is assumed to be the main factor for influencing the changes in the Ukrainian agri-food trade in the near future. The increase of meat exports to the EU is estimated to be equal to 38% after the first ten years of liberalisation, the one of milk 14.4% and the one of cereals 46.5% (Ryzhenkov et al., 2013).

Figure 7 Agricultural exports and imports, in USD million



Source: State Statistics Service of Ukraine, different years.

In April 2014, Ukraine was granted preferential access to the EU market. The EU unilaterally eliminated duties on the majority of agricultural goods originating from Ukraine and opened Tariff Rate Quotas (TRQs) for altogether 33 groups of products. The TRQs for maize, wheat, poultry, honey, grape, apple juice as well as processed tomatoes were fully exhausted in 2014. Other ones were fulfilled within a range from 7% to 28%. Exports of altogether 15 remaining commodity categories have not yet started (UCAB, 2015). Since most of Ukrainian livestock exports do not yet meet EU food safety as well as Sanitary and Phytosanitary Measures (SPS) standards, only poultry is being exported to the European Union at present (OECD 2015b). As Ukraine will eliminate its trade barriers slower than the EU, a full effect of DCFTA for import from the EU will be observable no sooner than 2019. Ryzhenkov et al. (2013) estimated that the reduction of Ukraine's import duties will result in approximately 7% additional imports, largely due to increased supplies of beverages, vegetable oils and fats, meat, mineral or chemical fertilisers, animal oils and fats as well as sugar. Furthermore, tariff liberalisation is expected to generate trade flows of new products previously not traded by the EU and Ukraine. This new trade potential is estimated at US$ 2.3 billion for Ukraine's exports to the EU and US$ 0.7 billion for imports from the EU over the first decade of the DCFTA implementation (ibid.).

During the first years of independence, Ukraine concluded bilateral and multilateral Free Trade Agreements (FTAs) with the successor countries of the Former Soviet Union. The latest Commonwealth of Independent States (CIS) Free Trade Agreement, signed in 2011, re-

placed previous agreements, including bilateral ones. The parties committed to provide each other with a national treatment regime and to apply the principles and practices in compliance with the WTO regulations. Six CIS countries and Georgia received agri-food exports worth US$ 2.6 billion from Ukraine in 2014. Despite the overall increasing value of exports to these countries, their share in the total agri-food exports fell from 49.4% to 21.6% in the period between 2004 and 2013. Russia remained the main trade partner among the CIS. However, its share in the total agri-food export to Ukraine has dramatically decreased from 35.4% in 2004 to 11.8% in 2013 due to the political tension between the two countries and the subsequent trade restrictions primarily on the Russian side (Nivyevskiy et al., 2015). The share of remaining CIS countries and Georgia did not change much since 2004 and accounted for about 10% of Ukrainian agri-food export in 2013 (ibid.).

Further important trade partners of Ukraine in the agricultural sector are the Middle East and North African as well as Asian countries. The exports to Asian countries, which amounted to US$ 6.6 billion in 2014, exceeded even the respective value of the exports to the EU states (Pavlenko, 2015). Ukraine is conducting negotiations on a Free Trade Area with Turkey, Canada, Serbia and Singapore. Other possible future agreements involve FTAs with Israel, Vietnam, Lebanon, Morocco and other trading partners (Nivyevskiy et al., 2015).

As a net exporter of agricultural products, Ukraine benefits from a liberal international trade system that ensures its access to the markets worldwide. Overall, Ukraine pursues a relatively liberal trade policy, especially compared to many of its neighbouring Former Soviet Union countries (BE, 2012). Ukraine's agricultural trade policy framework tends to tax export-oriented agricultural products, while importable ones are more supported. The protection of the agriculture via import restrictions is largely modest (Nivyevskiy et al., 2015). Particularly in the course of the WTO accession, Ukraine committed itself to reducing the average level of import protection for agri-food products. The majority of tariff bindings were already reached in 2011. All remaining commitments were fulfilled in 2013 (OECD, 2015b). On a more individual level, sugar and sunflower oil are the most protected commodities. Ukraine applies a Tariff Rate Quota on raw cane sugar imports at the level of 267.8 million tons with a 2% in-quota tariff, while the above quota duty equals 50%. The import duty for sunflower oil is at a prohibitive 30%-rate (Nivyevskiy et al., 2015).

Table 4 Applied MFN tariffs on agricultural products before WTO Accession and in 2014

Summary	Final bound	2008	2014
Simple average MFN applied	11.2	13.8	9.2
Trade weighted average	10.0	18.2	5.9 (2013)

Source: WTO, USDA, 2008.

Ukraine, as a large grain exporter, made a commitment to abolish restrictions on grain trade that existed at the time of the WTO accession. However, even since then, it has still imposed export restrictions in form of quotas and export duties on several occasions, resulting in substantial forgone revenues for grain producers and exporters (see Chapter 2.2.5). Some business representatives questioned conformity of these procedures with WTO provisions. As a result, the Government and the grain business made an arrangement with the aim to make grain export regulations more predictable. From October 2011 onwards, the Ministry of Agrarian Policy together with the representatives of grain exporters and producers repeatedly signed memoranda of understanding (OECD 2013). Thus, in the marketing years 2012/2013 and 2013/2014, the export restrictions took the form of voluntarily "agreed" maximum export volumes, as grain traders consented to limit their grain export to 80% of the exportable grain volume (ibid.).

Since previously applied export quotas were not auctioned to the highest bidder but rather distributed by an opaque, corruption-prone administrative procedure (BE 2012), the new approach was regarded as an improvement over the ad hoc and often inadequately grounded export restrictions which had been destabilising the grain sector (OECD 2015b). Still, some experts fear that even within the mechanism of a memorandum, the decisions on who exports how much grain is subject to a non-transparent practice, just as it was in the case of the export quota distribution (Meyers & Goychuk, 2015).

Among the requirements that Ukraine accepted upon WTO accession was an obligation to lower its export duties on oilseeds. The export duty for sunflower seeds has been annually cut down from 17% in 2008 to 10% in 2014 and thus reached the level required by the WTO (USDA, 2014).

Until 2011, Ukrainian exporters of grains, oilseeds and fibre crops had to pay the VAT on their inputs at a standard rate when exporting while their exports were zero-rated. Subsequent-

ly, they could claim the reimbursement of VAT paid on inputs (Samusenko, 2015). However, the VAT refunding was implemented with substantial arrears. Given rising commodity prices, the Ukrainian Government had to refund more VAT for exports while its VAT cash inflow remained the same: the exemption of agricultural producers from VAT payment on their value added left the state only with VAT collected on inputs (ibid.). The non-return of VAT, however, was implicitly taxed and thus reduced the prices of Ukrainian export goods and curtailed the profitability of companies. For example, agricultural producers of grains and oilseeds lost about UAH 11.7 billion of revenues in 2010 alone (BE, 2010). The new regime, introduced in 2011, made VAT refunds unnecessary by exempting eligible exporters from VAT payment. This provision, originally adopted to remain effective until January 2014, has been extended until January 2018 (OECD 2015b). Even sharply decreasing commodity prices, erasing the profits of average farmers in 2013, did not induce the Government to abolish this indirect taxation of exports. Facing high budgetary deficits, the Government elected in spring 2014 did not change the situation either (Samusenko, 2015).

Despite some traffic and storage bottlenecks, the overall condition of Ukraine's physical infrastructure and transportation capacity for agricultural products is satisfactory. Most of the roads are paved. The railway network is relatively well developed (Schroeder & Meyers, 2015). Grain storage facilities have been considerably improved in the last years in order to meet the growing demand. Terminal capacities increased from about 7 million tonnes/year in 1998/1999 to 47.1 million tonnes/year in 2012/2013 (Nivyevskiy et al., 2015). Still, costs incurred with transportation and handling in Ukraine are 30% higher than in other countries due to persistent logistical inefficiencies (ibid.). According to Goychuk and Meyers (2014), in the short run, it takes approximately nine months for Ukrainian farm prices to adjust to the international price changes which shows the presence of market inefficiencies. The share of wheat marketing costs in the export price, including expenses for the port as well as for the transportation from the farm to the inland elevator and from the elevator to the next harbour, amounts to about 20%. This is clearly higher than in France, for example, where the respective share amounts to only 10% (BE, 2012). However, most of the differences in marketing costs do not incur due to problems with the physical infrastructure but with the cumbersome certification process. A variety of certificates and testing procedures imposes significant costs in the form of official and unofficial payments (ibid.). Depending on the sector, the total compliance costs of the sanitary control system lie between 2.6% and 4.9% of the annual turnover of agricultural enterprises, whereas the burden of the phytosanitary measures for the private sector is 7.5 higher in Ukraine than in the EU (Nivyevskiy et al., 2015). In the beginning of 2015,

Ukrainian Government passed a law in order to streamline administrative procedures including provisions aiming to simplify agricultural exports. The 'Easy Business Facility', set up by the Ministry of Agrarian Policy and Food, is focusing mostly on grain exports, abolished quarantine certifications, shortened time for export control and simplified food product registration (OECD, 2015b).

2.3.5 Rural Development

During years of central planning, kolkhozes and sovkhozes both operated as agricultural companies and as providers of communal public services. Rural inhabitants were offered not only guaranteed employment but also a wide range of social services (Keyzer et al., 2012). Kolkhozes and sovkhozes furthermore engaged in activities such as transport, construction, repair of housing and equipment as well as in agricultural processing and other industrial production (ibid.). After the dismantling of the former state and collective farm structure, newly established agricultural enterprises were designed to focus on profit maximisation. Consequently, they were released from the duty to address the social needs of the rural population (World Bank & OECD, 2004). The presidential Decree "On Certain Measures Aimed at Improving Conditions for Non-State-Owned Agricultural Enterprise Activities" issued in 2000, entrusted local administration to provide social services and maintain the public infrastructure while some facilities were privatised. Kindergartens, clubs, utility networks, medical institutions and schools had been formally transferred to communal ownership (ibid.). However, due to inadequate financing and weak administrative capabilities, the local governments were not able to perform the new tasks properly. As the Ukrainian governance structure follows a hierarchical scheme of strict subordination between the governmental tiers, budgetary resources tended to be concentrated in the higher levels of the Government, leaving municipalities unable to deal with large local fiscal needs. As a result, public infrastructure and the quality of rural life deteriorated considerably (Kvartiuk, 2015). The state made a number of attempts to halt the continuing degradation of living conditions in rural areas, like presidential decrees and a governmental programme on the development of Ukrainian villages for the period until 2015. Yet, due to limited funds and insufficient focus on social issues, the implementation of the declared objectives within these programmes was deficient (Keyzer et al., 2012). De facto, agricultural enterprises continued to provide in-kind contributions to maintain the social services and the rural infrastructure (Biesold, 2004). Often, agro-holdings were the only source of investment in rural areas in Ukraine (Sarna, 2014).

Low living standards and the lack of employment perspectives in rural areas triggered the migration waves of young people to the cities, leading to a severe demographic crisis in the Ukrainian countryside. According to data of the State Statistics Service of Ukraine, rural population declined by more than 16% (2.8 million) between 1991 and 2014, while the overall decrease of the Ukrainian population was equal to about 13% (6.6 million). The unemployment rate of the rural population in 2014 was slightly higher (9.5%) than the one of the population in urban settlements (9.2%). However, the nominal monthly wage of rural inhabitants was far below the countrywide average, amounting to only 71.2%.

Given limited alternatives to earn income, smallholder subsistence farming is still considered a means of survival for rural households. However, statistical data on income composition and development of households in rural Ukraine indicate a decreasing dependence on subsistence agriculture since 2000. The share of income in the total monthly resources increased notably from 54% in 2000 to 85% in 2014 (State Statistics Service of Ukraine, 2014). This occurred mainly due to the rise of the share of wages by 15.7% as well as of pensions, scholarships, benefits and subsidies by 14.3% (Moroz, 2013). The value of consumed goods from self-production as a non-monetary share of the total household income decreased substantially. In 2000, the according value was the most important income source of rural households and equalled 34.9%. Between 2000 and 2014, this indicator dropped by 23.8 percentage points (State Statistics Service of Ukraine, 2014). Similarly, the portion of income from sales of agricultural products fell from 13.4% in 2000 to 9.2% in 2014 (ibid.). These trends confirm that importance of external income sources for rural households increased to a significant extent (Moroz, 2013).

The average share of income related to entrepreneurial activity remains modest despite its increase from 1.4% in 2000 to 5.1% in 2014 (State Statistics Service of Ukraine, 2014). However, with closer examination of rural households, Prokopa et al. (2010) detect their increasing differentiation in terms of production and consumption structure. The researchers observe the emergence of a commercially oriented segment among rural households. According to their analysis, about half of the rural households are regarded as largely subsistence oriented, while slightly more than one quarter generates income predominantly through the selling of agricultural products. The rest is described as a mixed type. The authors interpret this development as a sign of favourable prerequisites for the further expansion of small agrarian businesses. Further growth of the number of such households as well as a continuing shift of rural families from self-consumption of agricultural goods to their sales on the market play an important role in the development of versatile agriculture and require support

(Prokopa et al., 2010). Since most of the rural households have only limited access to machinery and modern technologies, there is room to increase production efficiency and competitiveness through the implementation of appropriate measures (Moroz, 2013). This evolves changes in the perception of the role of households in the rural economy, an enhancement of the commercial orientation, the promotion of cooperation between households not only with regard to agricultural production activities but also to processing, storage, transportation, sale of agri-food products, provision of different services, etc. (ibid.).

2.3.6 Agri-Food Processing

The food processing industry, capable of manufacturing competitive products, is an important prerequisite for exploiting Ukraine's agricultural potential. Privatisation of the upstream and downstream parts of the agri-food chain started in the mid-1990s and made substantial progress until 1999. Most agro-processing companies were fully or partially privatised by the beginning of the 2000s. Marketing chains became more efficient (Mishchenko & Gumeniuk, 2006). From 2004 until the financial crisis in 2008, the sector has grown rapidly – with an average growth rate of about 14% annually. The growth rate was slowed down in the course of the financial crisis, followed by a period of stagnation in 2009-2012 with an annual average growth of 2.4%. In 2013, the sector experienced a wave of recession by -5.1% (Nivyevskiy et al., 2015).

The share of food, beverages and tobacco production in the manufacturing sector was at about 17.5% in 2014. The agro-processing sector accounts for about 15.6% of capital investments and 17.8% of Foreign Direct Investments in manufacturing. About 14.4% of the manufacture workforce was employed in the food, beverages and tobacco sector (State Statistics Service of Ukraine, 2015).

Between 2004 and 2011, the labour productivity in the Ukrainian food and beverages sector increased by 21.1%, the total factor productivity by 14.7%. The gross agricultural profit in the Ukrainian food industry, however, is highly fluctuating (Nivyevskiy et al., 2015). In order to increase the competitiveness of the agro-processing sector, it is necessary to align its standards to international benchmarks and to further increase the productivity. More investments are needed in capital equipment and inputs as well as technical and entrepreneurial skills (OECD, 2012). The Free Trade Agreement with the European Union can provide further incentives to raise the competitiveness of the Ukrainian food and beverage products.

2.3.7 Environmental Issues

The full realisation of the Ukrainian agricultural potential is limited by some natural and environmental factors. High agricultural production volumes during the Soviet era caused soil erosion and deterioration. According to FAO, annual soil losses were as much as 600 million tonnes, which, in monetary terms, costs the country more than US$ 1.6 billion annually (Bogovin, 2006). In the course of the catastrophe at the Chernobyl nuclear power plant in 1986, high levels of radioactive contamination affected 12% of the agricultural lands. Due to unsafe levels of radiation, about 180 thousand ha of arable land were excluded from agricultural use (Mishchenko & Gumeniuk, 2006).

Insufficient use of fertilisers, the abandoning of traditional crop rotation practices and increased planting of row crops like grain and sunflowers during the last decades inversely affected soil fertility (Kucher, 2007). While the use of mineral fertilisers has increased in recent years after the dramatic decline in the first period of transition, the application rate of organic fertilisers is still very low, contributing to the loss of humus (Geletukha & Zheliezna, 2014). The abundance of land and its relatively low prices may also stimulate the short-term strategies characterised by insufficient investments in the maintenance of soil fertility in the future (OECD, 2015a). However, the substantial expansion of the use of minimum tillage during the last decade witnesses the effort towards a positive change (Hovhera et al., 2014).

Further issues having adverse environmental impact include the misuse of agricultural inputs, water pollution, mismanagement of agricultural waste as well as inadequate storage of obsolete pesticides (OECD, 2015a). Since its independence, Ukraine has established a regulatory framework dealing with environmental issues including the law about the state environmental policy until 2020 – the first attempt to define a coherent environmental strategy. Regulative efforts were made to strengthen the state control over soil quality and to shift the responsibility for soil survey from agricultural producers to the state. The mitigation of environmental problems remains a problematic issue due to ineffective implementation and enforcement of the numerous environmental laws (ibid.).

Ukraine ranks 44 out of 180 in the Yale Environmental Performance Index (2016). Its environmental performance in agriculture changed positively by 18.73% compared to ten years ago (EPI, 2016). As part of the obligations under the Association Agreement with the EU, the Ukrainian environmental policy is expected to undergo more changes in order to harmonise

with EU standards. In this context, a number of specific policies and measures in the agricultural sector are yet to be developed (OECD, 2015 a).

3 The Political System in Ukraine

3.1 Constitutional Reforms

The constitutional history of independent Ukraine was characterised by the political confrontation and struggle between competing elite groups. Since 1991, provisions regulating the allocation of political power between executive and legislative branches as well as within the executive underwent numerous transformations. In addition to the substantial revisions of the power spheres of the main institutional actors, there were at least three unsuccessful attempts of constitutional changes (Kudelia, 2013). Furthermore, multiple minor shifts in the power distribution between the President, Prime Minister and Parliament were achieved through mere legislative decisions (ibid.). The preferences of the elite groups concerning the institutional settings changed in accordance with their position within the political power structure or their time-horizons. Arrangements, vehemently rejected in the previous phases, often seemed appealing with the change of power relations. Alternating groups entered temporary alliances in order to strengthen their positions and enhance their de facto power (Stykow, 2014).

The amended constitution of the Ukrainian Soviet Republic remained in force for more than five years after the independence. Only in 1996, in the aftermath of a hard-won political compromise between executive and legislative branches, represented by President Kuchma and the parliamentary speaker, Olexander Moroz, Ukraine adopted the new constitution. Despite some shortcomings, the new constitution was seen as an important step in the establishment of the country's basic institutional setup (Venice Commission, 2010[18]).

The Ukrainian constitution of 1996 did not provide any explicit statement about the governmental system. The formal balance of power between the executive and legislative branches was particularly striking (Luchterhandt, 2010). However, prerogatives of the President vis-à-vis the Government were so significant that experts speak of a presidential-parliamentary Government system (ibid.). The Cabinet of Ministers was not only accountable to the Parliament but also subordinate and responsible to the President. Its dependence on the President manifested itself furthermore in the fact that the term of the Cabinet of Ministers was tied to

[18] The Venice Commission acts as an advisory institution of the European Council in the field of constitutional law.

the incumbency of the President instead of the parliamentary mandate. Furthermore, the President had the right to independently exercise legislative power by issuing decrees and veto governmental acts, dismiss or reorganise the Government unilaterally without the involvement of the Parliament (Stykow, 2014). However, the candidate for the office of Prime Minister, nominated by the President, had to be approved by the Verkhovna Rada. The Parliament was furthermore entitled to dispose of the Government through the vote of no confidence. During Kuchma's incumbency, however, the President could virtually control the Government unilaterally (ibid.). Due to the internal controversies inside the Parliament and due to the venality of its deputies, it was not difficult for Kuchma to receive a consent on the appointment of his nominations (Luchterhandt, 2010). After his re-election as President, Kuchma initiated a constitutional reform in 1999 in order to further strengthen his power. His reform proposal was confirmed in a referendum, failed however in the course of the following legislative process (Stykow, 2014). In late 2002, Kuchma, whose second presidential term was coming to an end, commenced another unsuccessful constitutional reform. Not being sure about his ability to hand over the office to a suitable successor, he was trying to strengthen the role of the Government and Parliament vis-à-vis the President, in the hope to stay in power as Prime Minister (ibid.).

The run-off vote of the presidential elections in 2004 was held between Kuchma's protégé Viktor Yanukovych and Viktor Yushchenko, the leader of the opposition, whose party had succeeded in the parliamentary elections of 2002. Massive manipulations of the ballots at the expense of Yushchenko ended in a political crisis and non-violent uprisings of the Ukrainian civil society, the so-called Orange Revolution. The Supreme Court invalidated the results of the original run-off. Furthermore, in order to settle the crisis, both political camps negotiated the revision of the constitution, which was adopted by the Parliament in December 2004 in the form of Law No. 2222 on amendments to the Constitution. According to experts, only after Yushchenko had agreed to the shift of power, the ancien régime consented to the withdrawal (Lindner, 2006). In the second run-off, Yushchenko achieved the majority of votes and was sworn into office as President. Yulia Tymoshenko, another leader of the Orange Revolution, became Prime Minister.

The revision of the constitution provided a strong impetus for transforming the Ukrainian political system from a presidential-parliamentary system to a more parliamentary one. The right of the President to issue decrees, to decide upon personal matters related to the Prime

Minister and the Cabinet of Ministers as well as to veto governmental decisions were restricted (Stykow, 2014). According to the new regulations, the Government had to resign with the respective parliamentary elections, as its tenure was no longer bound to the presidential office term. The Prime Minister and his/her cabinet exclusively depended on the Parliament now and could no longer be dismissed by the President (ibid.). However, the Cabinet of Ministers remained responsible not only to the Parliament but also to the President. The right of the President to dissolve the Parliament was even expanded. It could be applied not only in case that the Parliament did not start with plenary meetings within thirty days of a single regular session, but also if the Verkhovna Rada failed to form the coalition of factions and the personal composition of the Cabinet of Ministers within respectively prescribed time periods (Lindner, 2006). In the spirit of the parliamentary Government regime, the mixed electoral system was replaced by a purely proportional system. At the same time, a minimum threshold of 3% for parties to enter the Parliament was introduced (Luchterhandt, 2010). The constitutional amendment came into force on the 1st of July 2006. Though the Venice Commission (2010) welcomed and strongly supported "efforts aimed at strengthening the position of Parliament with respect to the President", it criticised a number of provisions bearing potential for unnecessary political conflicts between the key political institutions. Since the constitutional reform extended the possibilities of the Parliament, the President and the Cabinet of Ministers to veto or delay decisions, long-lasting political paralysis threatened (Lindner, 2006).

From 2004 until 2009, five different governments were in office. The quick dissolution of the Orange coalition was followed by a series of political crises, marked by intensive confrontation between the President and the Prime Minister. Ukrainian and foreign observers agreed on the fact that the causes of the Ukrainian permanent crisis were to be found among other things, also in constitutional order (Lange & Reismann, 2009). The dual leadership executive structure of the new parliamentary-presidential model, in addition to the immature political culture of the elites, were the main reasons for the continuing power struggles between President Yushchenko on the one hand and Prime Minister Tymoshenko or Yanukovych on the other hand (Umland, 2009). All key political actors saw the urgent need for a constitutional revision. In March 2009, President Yushchenko submitted an official constitutional draft to the Verkhovna Rada, which aimed to enhance the power of the President again and to introduce a second chamber of Parliament (Kudelia, 2013). However, the declining popularity of Yushchenko and a lack of support in the Parliament prevented him from leading the renegoti-

ation process on the constitutional change. The draft never became a matter of serious elite bargaining (ibid.). Prime Minister Tymoshenko, on the other hand, negotiated with Viktor Yanukovych, in the meantime leader of the largest opposition faction in the Verkhovna Rada, on an alternative proposal. The draft envisaged the introduction of a parliamentary governmental system and the election of the President by Parliament (Bos, 2010). However, as Yanukovych gained a growing lead over Tymoshenko in the poll concerning the candidate of the upcoming presidential elections, he unilaterally ended talks (Kudelia, 2013).

Just a few months after coming to power, President Viktor Yanukovych distanced himself from the constitutional amendment of 2004 and pushed through another constitutional change of the governmental system. In October 2010, the Constitutional Court annulled the amendment of 2004 due to procedural reasons. Thus, under controversial circumstances, the constitution of 1996 came into force and Ukraine returned to the governmental system dominated by the President. Yanukovych was able to even widen the competences beyond the limits set by the 1996 Constitution. The establishment of a pro-presidential majority in the Parliament and the overthrow of the Tymoshenko Government allowed him to consolidate more power than any other Ukrainian President before him (Luchterhandt, 2010). Yanukovych's quick success was based on the subjugation of the Parliament by supporters of the President, combined with the informal control of the President over the majority of judges in the Constitutional Court (Kudelia, 2013).

After Yanukovych's Government refused to sign the Association Agreement with the EU in November 2013, demonstration waves began in Kiev, known as the Euromaidan movement. Large public protests demanded closer relations with the EU, resignation of Yanukovych's Government and fundamental overhaul of the corrupt and repressive state system. In February 2014, the situation escalated and resulted in 80 fatalities. With the involvement of external mediators, Yanukovych and the opposition leaders signed an agreement to settle the political crisis, which provided a return to the 2004 Constitution. After Yanukovych had fled the country, the Verkhovna Rada readopted the parliamentary-presidential model of 2004 on the 21st February 2014.

In view of the Russian annexation of Crimea and the conflict with Russian-backed separatists in eastern Ukraine, the questions of constitutional design still remain on the agenda. A change of the Constitution, in particular with the objective of decentralisation, is in preparation.

The present research applies for the period shortly before the presidential elections of 2010 were held. Thus, the described constitutional order is based on the setting formulated in the 2004 amendments, which, however, is still in force since February 2014.

3.2 State President, Government and Parliament

The President is elected for a five-year term[19]. The presidential term of office is limited to two consecutive tenures. The President of Ukraine is head of State and the guarantor of state sovereignty and territorial integrity, defender of the constitution and human rights and freedoms of Ukrainian citizens. On proposal of the coalition of factions in the Verkhovna Rada, the President has the right to suggest the candidates for the office of Prime Minister, who is appointed by the Verkhovna Rada. Furthermore, the President has the authority to propose the Ministers of Foreign Affairs and of Defence as well as the Head of the Security Service of Ukraine for parliamentary approval. Laws, adopted by the Verkhovna Rada of Ukraine can be vetoed by the President with their subsequent return for repeat consideration by the Verkhovna Rada. Exceptions are Laws on Amendments to the Constitution of Ukraine. The President's veto can only be overruled by a two-thirds majority of all deputies. The Verkhovna Rada may remove the President from office by the procedure of impeachment in the case that he or she commits state treason or another crime. The barriers to be overcome for the possible impeachment of the President, however, are quite high (Bos, 2004).

Ukraine's Parliament, Verkhovna Rada, is a unicameral body with 450 deputies, elected for a term of five years. The deputies are assembled in parliamentary factions and groups. Parties that have overcome the 5% electoral threshold can form factions. As a sole body of legislative power in Ukraine, the Verkhovna Rada adopts laws, whereas the President, members of Parliament and the Cabinet of Ministers of Ukraine have the right of the legislative initiative. The Parliament is mainly responsible for the formation, i.e. appointment (partly upon the submission of the president) and dismissal of the executive branch. The competence of "determining the principles of domestic and foreign policy" (Art. 85 (5)) authorises the Parliament to pass binding resolutions on the programmes submitted by the Government (Luchterhandt, 2010). The Verkhovna Rada has the right to adopt and amend the state budget and to control its implementation.

[19] This chapter is based on Ukraine's Constitution of 1996 with Amendments through 2004.

The Cabinet of Ministers of Ukraine takes a relatively weak position vis-à-vis the President and the Verkhovna Rada (Bos, 2010). As the highest body of the executive branch, it is composed of the Prime Minister, the first vice Prime Minister and other vice prime ministers as well as regular ministers. The Prime Minister guides the work of the cabinet aiming to implement the programme approved by the Verkhovna Rada. The resignation of the Prime Minister results in the resignation of the entire Cabinet of Ministers. One of the most important tasks of the cabinet is the elaboration and submission of the draft Law on the State Budget to the Parliament for the following year no later than on the 15th of September of each year.

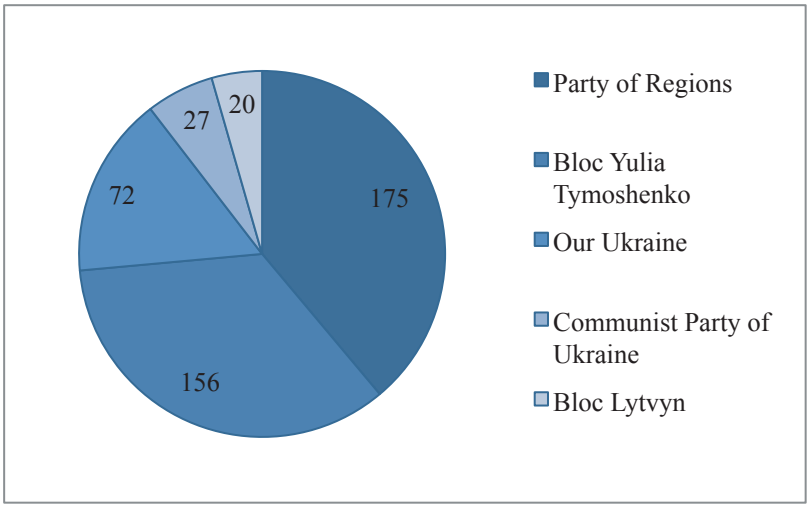
3.3 Main Political Actors during the Study Period

The time following the Orange Revolution was marked by a permanent political and economic crisis. Periods during which the President, Parliament and Government were capable of working were rather limited, whereas the periods in which at least one of these institutions was not fully functional lasted rather long (Simon, 2008). Conflicts between the constitutional bodies determined the political life. Continuing disputes took place not only between the Government and the opposition but first of all within the ruling Orange coalitions (ibid.).

After the parliamentary elections in 2006, it took several months of disputes to form a new Government. The leader of the Party of Regions (PoR), Yanukovych, who managed an astonishing political comeback, became finally Prime Minister (Bos, 2010). Escalating conflicts between President Yushchenko and Prime Minister Yanukovych, who belonged to opposing camps, led to the dissolution of the Parliament and to new elections in September 2007 (ibid.). In these elections, five parties and alliances were able to overcome the required threshold of total votes and enter the Verkhovna Rada of the sixth convocation: the Party of Regions (PoR), the Bloc Yulia Tymoshenko (BYuT), Our Ukraine-People's Self Defence (OU), the Communist Party of Ukraine (CPU) and the Bloc Lytvyn (BL).

After difficult negotiations, former Orange forces, the pro-presidential alliance Nasha Ukraina and the Bloc Yulia Tymoshenko built the governmental coalition with a slight majority of 227, only 2 more than the minimum. Yulia Tymoshenko became Prime Minister in the third voting ballot. The inability of the coalition, however, to find compromises on fundamental questions for domestic as well as foreign policies led to the dissolution of the original coalition. Due to the lack of alternatives, however, the same factions renewed the coalition together with Bloc Lytvyn at the beginning of 2009.

Figure 8 Distribution of seats in the Verkhovna Rada after the 2007 elections



Source: Own presentation.

Three of the most important parties of the sixth parliamentary convocation differed from each other in terms of formal structure and distribution of resources within the parties' leaderships (Kudelia & Kuzio, 2015). While the organisation of the Party of Regions was strictly hierarchical and rather homogenous, the electoral Blocs Yulia Tymoshenko and Our Ukraine were rather unstable alliances of several parties around the charismatic personalities of their respective leaders (Göls, 2009). The Party of Regions managed to practice a consociational decision-making process among the major party leaders and was able to better survive defeats. The personally led Blocs Yulia Tymoshenko and Our Ukraine, on the other hand, had difficulties to absorb defections and suffered from a lack of commitment by the rank- and file (Kudelia & Kuzio, 2015). The Party of Regions, furthermore, made good use of its role as the opposition party and profited from the decreasing popularity of the Orange forces (Stiglbrunner, 2006).

The classification of the Ukrainian political parties along the left-centre-right dimension is rather difficult (Göls, 2009). Since Ukraine's independence, its political party landscape was characterised by high turnover rates, low ability to form party platforms and strong tendencies to focus on patronage. The electoral alliances were rather unstable short-term coalitions of parties with differing political approaches. Given their unclear programmatic orientations, major Ukrainian parties tended to adopt vague positions in the centre of the ideological spectrum (ibid.). According to Åslund (2009), the economic programmes of all three main political parties showed strong tendencies of convergence prior to the 2007 parliamentary elections

and could be described as democratic centre-right. All three parties were calling for more privatisation and deregulation, macroeconomic stabilisation, reduction of taxes as well as the accession to the WTO and the EU (Åslund, 2009).

The parliamentary elections in Ukraine were marked by the regional differentiation of the party support, as the parties failed to establish a nationwide electorate (Whitmore, 2014). In 2007, the Party of Regions received the major part of its votes in the eastern and southern parts of the country. It mainly represented the interests of directors of heavy-industry complexes of the eastern parts of the country (Bos, 2010). From the ideological point of view the party described itself as "centrist" (Meleshevych, 2010). Further important party priorities concerned the political and economic decentralisation of the country and the strengthening of local self-governance. The Party of Regions emphasised the historical and cultural proximity to Russia, aimed at closer relations to the eastern neighbour and supported the introduction of Russian as a second state language. Its position towards the accession of Ukraine to NATO was critical (Göls, 2009). In the agricultural sector, the party programme focused on the formation of a transparent, legalised land market with an annual leasehold amount of no less than UAH 400 (about 60 euros) per hectare. The Party of Regions promised to provide the provision of modern means of communication in rural areas, to double agricultural investments, to establish a national grain exchange and to implement fruit and vegetable auctions in the cities (Kokhan, 2007).

The politics of Bloc Yulia Tymoshenko were tailored to its charismatic leader. Yulia Tymoshenko, as the name giver and founder of the bloc, kept several parties united within the bloc. The bloc was attempting to present itself as down-to-earth and close to the people, often showing populist tendencies (Stiglbrunner, 2006). Lacking coherent ideology, the BYuT included parties representing a wide-ranging political spectrum. The ideological elusiveness of Tymoshenko's bloc was revealed by the fact that, despite its left-populist demands, the party aspired to the membership of the conservative European Peoples Party (Göls, 2009). Concerning the agricultural policy, the party platform of BYuT promised to stimulate the development of an agricultural infrastructure, in particular the creation of an agricultural fund, a stock exchange bank as well as an insurance fund. Furthermore, BYuT envisioned the establishment of a transparent market for Ukrainian producers, the promotion of the products on external markets, the fostering of rural employment and the replacement of unsystematic rural financ-

ing by typical business projects which considered not only agricultural production, but also ecological issues (Kokhan, 2007).

Originally founded in 2001 around Yushchenko as a moderate oppositional party, the electoral coalition Our Ukraine-People's Self Defence Bloc was a very heterogeneous alliance. In changing composition it included parties with nationalist orientation as well as parties with business interests (Bos, 2010). In the 2006 and 2007 parliamentary elections, the bloc remained a rather loose alliance of somewhat different combinations of like-minded parties, which declared their loyalty to Yushchenko (Meleshevych, 2010). The main electorate of the coalition was located in the western part of the country and in Kiev. According to its programme, the bloc aimed to conduct market-oriented reforms, to fight against corruption and to promote Ukraine's economic development (Stiglbrunner, 2006). Among all Ukrainian parties, "Our Ukraine" stood most vehemently for the western integration of Ukraine (Göls, 2009). In view of the agricultural policy, the party's manifest promised the implementation of transparent registration procedures for land titles as well as the right to freely dispose of land ownership. The bloc intended to simplify the privatisation process for owners of divided plots and to reduce the estate tax of land for farmers. In addition, the party guaranteed financial assistance in order to enhance the employment of university graduates in rural areas (Kokhan, 2007).

The Communist Party of Ukraine (CPU), re-founded in 1993 as the unreformed successor of the former Soviet party, remained loyal to the legacy of the Soviet Union (Wilson, 2002). The CPU was by far the largest and the best institutionalised party in terms of organisation and ideology during the 1990s and formed the biggest parliamentary factions until 2002 (Bos, 2010). According to a number of experts, the CPU was among the few political parties in Ukraine with a clear ideological orientation, if not the only one, as it still adhered to the main postulates of communist ideology (Meleshevych, 2010). Throughout the 2000s, the CPU competed with the Party of Regions for electoral support, which could draw on a better endowment with financial resources (Whitmore, 2014). The Party of Regions made massive efforts to target the core electoral constituencies of communists in east and south Ukraine (Meleshevych, 2010). In the 2006 parliamentary elections, the CPU experienced a dramatic defeat. Although the communists managed to enter the Parliament in 2007 with slightly more than 5% of the votes, the leftist parties including the CPU suffered from continuing marginalisation.

Prior to the parliamentary elections in 2007, Wolodymyr Lytvyn founded Bloc Lytvyn, which became the smallest faction of the Verkhovna Rada. The leader of the alliance, former head of the Presidential Administration under Kuchma and former parliamentary speaker, belonged to the most influential politicians in Ukraine. Bloc Lytvyn defined itself as the mediator between the Orange forces and the Party of Regions (Bos, 2010), providing situative support to both sides for tactical reasons. Ideologically, Bloc Lytvyn declared its adherence to the doctrine of the people's centrism in electoral campaigns (Meleshevych, 2010). As supporter of a "multi-vector" foreign policy, Lytvyn favoured balanced politics between the East and the West. His agenda, however, was primarily focused on domestic issues and on increasing social welfare. Bloc Lytvyn, including the People's Party, which for a time was labelled People's Agrarian Party, was particularly concerned about agricultural issues.

3.4 Actors in the Agricultural Policy Domain

The institutional setup in agricultural policy-making in Ukraine is rather centralised with little power delegated to the regional and local authorities. Major political actors on a high level of the decision-making process involve the President and the Presidential Administration, the Prime Minister and the Cabinet of Ministers, the political factions represented in the Verkhovna Rada, the Ministry of Agrarian Policy (MoA)[20] as well as other ministries, primarily the Ministry of Economy (MoE; trade and business regulations issues) and the Ministry of Finance (state support issues). Besides the Verkhovna Rada which can pass laws, the Cabinet of Ministers and the President are authorised to issue decrees. Resolutions of the Cabinet of Ministers or/and decrees of the corresponding responsible ministries are fulfilling the norms of laws (Nivyevskiy et al., 2015).

In the political practice, the central body responsible for the formulation and implementation of agricultural policies is the Ministry of Agrarian Policies. It finances the state budget programmes and support measures, such as tax exemption and preferences as well as partial reimbursement of interest rates for agribusiness credits (FAO, 2013b).

The annual budget laws determine yearly volumes and specified instructions for the budgetary support of Ukrainian agriculture. In general, the budgeting procedure is as follows: the Ministry of Agrarian Policy annually prepares a budget proposal. After a lengthy iteration process

[20] The Ministry of Agrarian Policy was renamed into the Ministry of Agrarian Policy and Food in the course of reorganisation in 2010.

and consultations with the Ministry of Finance and the Ministry of Economic Development and Trade, the MoA delivers a budget proposal to the Ukrainian Government. Finally, the Cabinet of Ministers prepares the draft Budget Law on the basis of the proposals from all ministers and provides it to the Parliament. Following the discussion in the Verkhovna Rada and some further revisions, the Parliament finally issues the Law on the State Budget (FAO, 2013b).

In the first 14 years since its independence, Ukrainian agricultural policy has often been conducted in an uncoordinated manner between the relevant state authorities (Cramon-Taubadel, 2001). According to the constitutional rules, the Presidential Administration exercised the strongest influence on agricultural policy-making. The President issued decrees, allocated duties and associated deadlines to the Cabinet of Ministers and the Ministry of Agrarian Policy. President Kuchma made extensive use of decrees in order to realise agricultural policy changes such as the decree of December 1999, stipulating the distribution of land shares and restructuring the former Collective Agricultural Enterprises (ibid.). In the course of the constitutional amendment of 2004, the influence of the President on agricultural policy-making diminished. Continuing power struggles between President Yushchenko and the changing governments in the aftermath of Orange Revolution paralysed decision-making processes and made the implementation of comprehensive reforms impossible.

Besides political actors, associations representing the interests of agricultural producers and processors are to be considered as relevant stakeholders in the agricultural policy domain. In the first decade of the country's independence, the conservative agrarian lobby managed to exert a significant impact on policy-making. This occurred not only through its influence as party in the Verkhovna Rada, but also as an effectively networked interest group (see Chapter 2.2.2). The power of the conservative agrarian lobby, including sinlge-issue political parties focused on agricultural questions, considerably weakened at the beginning of the 2000s and remained marginal since then. Various types of agricultural producers and processors began to organise themselves in an increasing number of public professional associations (Emerson, 2006).

Interest groups in the agricultural sector of independent Ukraine were formed either through reorganisation[21] of existing associations or transformation of existing administrative struc-

[21] The following assessment of agricultural interest groups is based on Luzhanska (2011).

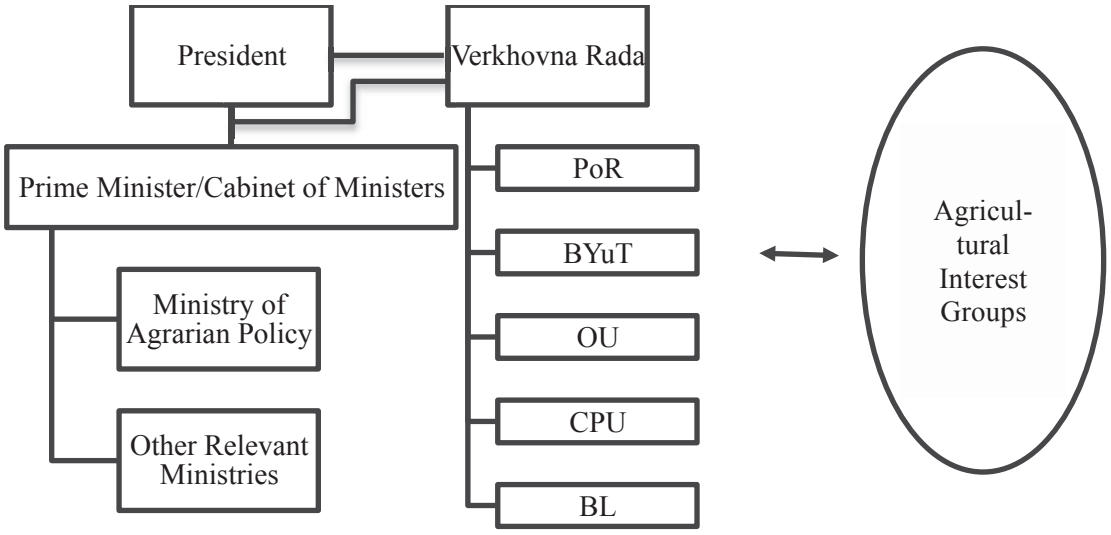
tures. Founded in 1971, the Council of Kolkhozes and Sovkhozes was reformed into the All-Ukrainian Council of Collective Farms in 1993, representing the interest group of conservative agrarians in the first decade of Ukraine's independence. The organisation was renamed first into All-Ukrainian Union of Agricultural Enterprises in 2001 and finally into Agrarian Union of Ukraine. Beside that, new associations were established involving companies which had formerly been part of the agro-industrial sub-complexes. The administrative structures of the latter had been reduced in the course of the reform processes. These interest groups include associations like "Ukroliyaprom", "Ukrmoloko", "Ukrmyaso", "Ukrmolprom" and others. The emergence of new economic and corporate interests based on private property led to the establishment of associations such as the Association of Farmers and Private Landowners of Ukraine, the Ukrainian Association of Tenants and Landlords, the National Union of Agricultural Cooperatives and others. Furthermore, new interest groups were formed as community organisations based on common economic interests, for example the Ukrainian Grain Association (GA), the Union of Poultry Breeders of Ukraine, the Ukrainian Association of Bakers etc. New Non-Governmental Organisations (NGOs) were established upon private initiative of socially active citizens, pursuing exceptional activity or representing populations with a certain status: the Club of Organic Farmers, the Union of Young Farmers, the Ukrainian Association of Agricultural Engineers, the Council of Women-Farmers of Ukraine etc. The association Ukrainian Agribusiness Club was founded with the aim to carry out scientific activities in the field of agribusiness. There is no official statistical information about the number of agricultural interest groups. It is estimated that there were more than 100 agricultural NGOs with a nationwide status in 2011, more than half of which were active. For early 2005, the number of all NGOs was estimated to be 60.

The collaboration between interest groups in the agricultural sector and state actors is carried out through Public Councils in the executive and legislature branches, coordinating and advisory non-governmental bodies in the higher authorities, memoranda between the Government and business as well as business meetings.

In 2001 started the formation process of organisational and legal principles which stipulated the public participation in the policy formulation and implementation. In late 2004, the idea of a dialogue between the Government and the public was realised in the form of Public Councils under the executive branch of the Government. The Public Council under the Ministry of Agrarian Policy encompasses 70 participants and is chaired on the one hand by the Minister

of Agrarian Policy of Ukraine and on the other hand by the representatives of agricultural associations. Within the legislative branch of the Government, public advisory structures were also established. In March 2008, the Committee on Agrarian Policy and Land Relations of the Verkhovna Rada decided to create a Public Advisory Council, which would be composed of representatives of agricultural associations, scientific and educational institutions, international technical assistances etc. The Public Advisory Board consists of the central advisory body, and devisions for land relations, social development of rural areas, economic and financial policies in agriculture, science and education as well as the permanent body, i.e. the secretariat.

Figure 9 Actors of Ukrainian agricultural policy



Source: Own presentation.

Over the years of the independence, an extensive network of coordinative and advisory public bodies was formed in the executive branch. One of the first of such structures was created in 1993. It was a permanent advisory body, the Council of Entrepreneurs under the Cabinet of Ministers of Ukraine, including a commission responsible for agrarian issues. In 2000, the Coordinating Council of Agricultural Policy under the Cabinet of Ministers was established, consisting mainly of agricultural NGOs. The council was directly subordinate to the vice Prime Minister of Ukraine. In 2010, however, work of the Coordinating Council was suspended in the course of a reorganisation of the governmental bodies by decision of the Constitutional Court.

In 2002, the Ukrainian Government and leading associations of the agricultural sector in the markets of grain, sugar, milk, meat, bread and bakery products started to sign annual memoranda on the coordination of activities (Emerson, 2006). This became a regular practice in the contractual relationship between business and Government. However, even though memoranda have the positive effect that dialogue is recorded in a document, it has neither legal power nor controlling mechanisms ensuring its enforcement. Obligations committed in the course of memoranda often remain unfulfilled. Moreover, such actions are sporadic and frequently caused by the need to counteract market imbalances. Besides memoranda, bilateral meetings between the Government and agricultural organisations aiming to address extraordinary occurrences or to discuss the major current topics are quite common (Luzhanska, 2011).

4 Theoretical Framework

4.1 Introduction

Agricultural policy, as a specific subtype of economic policy, is a complex system of interventions intending to address market failures and to redistribute income. It covers a set of domestic and foreign instruments influencing input and output markets, public good provision, regulation of externalities etc. Policy instruments vary substantially over time and across places with regard to their direction, form, extent and impact (Lindert, 1991).

The goal of political economy is to explain economic policies and their outcome by considering the incentives and constraints of the main actors involved. In the process of design and implementation of Government policies, political and economic forces are at play to balance between public and special interests. The main question arising in this context is whether the governmental interventions correct the market imperfections and improve efficiency or if they are just a result of rent-seeking, i.e. influential unproductive activities of organised interest groups. In the literature on agricultural policy distortions, there is a general distinction between public good policies intending to improve the conditions for maximising the economic pie, known as Political Economic Research Transactions (PERTs), and the predatory redistributive policies leading to deadweight losses and wasteful activities, described as Political Economic Seeking Transfer policies (PESTs) (Rausser, 1982, 1992). However, the conceptual frameworks which attempt to unilaterally emphasise either the political forces as the perfect pursuer of public policy or the interest groups as the only power manipulating political decision-making have only limited explanatory, predictive or prescriptive power (Rausser & Zusman, 1992).

The purpose of this chapter is to give an overview about the most important approaches of political economy applicable in the agricultural policy analysis. The models of political economy offer insights on how and why policies evolve and can help to indicate more efficient ways for the maximisation of social welfare. The endogenous inclusion of policy-making processes is a useful tool for estimating effects of policy instruments. Depending on the objectives of the research design, there is a wide range of models related to the interest group perspectives on the one hand and to the voting dynamics on the other hand.

The chapter at the beginning outlines essential concepts, assumptions and behavioural patterns of the political economy. The reviews of classical and modern approaches regarding the aggregation and enforcement of special interests follow. The discussed models include theories dealing with collective action and rent-seeking, approaches subsumed under the Chicago School framework as well as the political market model on agricultural distortions. Thereafter, political economic models relevant for voter-politician interactions are analysed. Besides the traditional median-voter theorem, some theoretical concepts are depicted concerning decisions under multiple policy dimensions. Furthermore, the Political Preference Function (PFF) model, as one of the most widespread concepts for the agricultural policy analysis, is illustrated.

The chapter finally comprehensively describes the methodological approaches applied empirically including the trade policy concept of Grossman and Helpman (1994), the model of political exchange by Coleman (1966, 1990) and Henning (2000) model of political exchange as well as the network approach developed by Henning (2000).

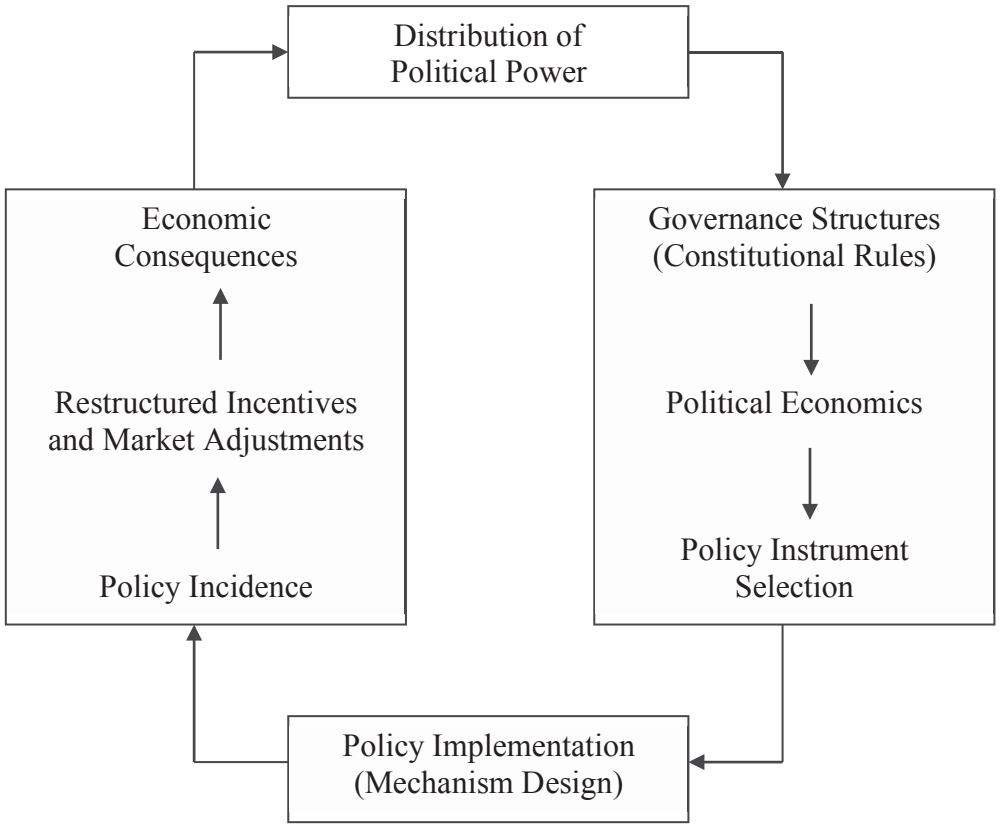
4.2 Basic Theoretical Framework

The active role of the Government in agricultural policy-making is undisputable. From the perspective of conventional economics and the Benthamian social welfare function, the state is regarded as a benevolent dictator without any own interests. Until the last few decades, a vast majority of the relevant studies, the so-called incidence analysis, have evaluated the impact of the policies on the welfare of different social groups from the viewpoint of cost-benefit considerations (Rausser & Goodhue, 2002). The analytical framework of the policy incidence hereby merges the Perfect Implementation (PI), the No Feedback Effect (NF) from the interest groups as well as the Given Governance structure (GG) (ibid.). A number of empirical investigations within the incidence dimension have been mainly conducted by partial equilibrium analysis (Alston & James, 2002; Karp & Perloff, 2002).

An alternative analytical framework on public policies does not merely address the questions of economic interventions, for example the size and form of redistributive or regulative programmes, but analyses the decision-making processes as well. Furthermore, it attempts to understand how the economic consequences feed back into the preferences of private actors and how they are aggregated back into the public policy (Persson & Tabellini, 2000). The schematic representation of the policy-making processes in Figure 10 illustrates the basic structure of the interdependences between these political and economic forces (Rausser &

Roland, 2009). Traditionally, the right-hand box has been the domain of the political sciences, the left-hand box the one of economic sciences. In recent decades, researchers from different disciplines began to make significant progress to build links between governance structures, political economies and a selection of current policies (ibid.).

Figure 10 The policy-making process and economic consequences



Source: Rausser, Swinnen & Zusman, 2012.

The literature on "public choice" has started employing economic tools on political processes and treating them like any other economic activity. The citizens, political actors and interest groups are considered to be rational, self-interested agents maximising their objective functions in accordance to their incentives and restrictions (de Gorter & Swinnen, 2002). Political economy relaxes the No Feedback Effect dimension (NF) and aims to explain the selection and implementation of public policies by endogenising the instrument choice as a function of agent's actions (Rausser & Goodhue, 2002). The focus lies in the simultaneous modelling of economic decisions within the political system and their implications for the economic system (Schneider et al., 1981).

In representative democracies, the incumbent Government is assumed to be interested in the political support *S* from voters and interest groups. The welfare of the latter agents depends on the conditions of the economic system *z*. Thus, the political support function can be formulated as $S=S(z)$. Government interventions α involve certain economic consequences which, in turn, lead to a distribution of political power, represented at the top of Figure 10 (Rausser & Roland, 2009). The preferences of political agents $U(\alpha)$ can be endogenously derived from maximising political support under the given interrelation between policy instruments and the economic conditions. This interrelation $T(z,\alpha)$ is described as the political technology (Krause 2005 after Rausser & Freebairn, 1974; Zusman, 1976).

Due to market failure, the implementation of public policies can only be carried out in an inefficient manner and thus leads to unintended results (Rausser & Roland, 2009). The literature emphasising the mechanism design relaxes the assumption of the Perfect Implementation (PI) and, by scrutinising potential strategic actions of the public and private agents, focuses on concepts like asymmetric information which is divided into the problems of hidden action and hidden information. Hidden actions are typically associated with moral hazard, while within hidden information one can distinguish between adverse selection and signalling problems. Despite the fact that the mechanism design models cannot be translated into the clear-cut testable hypothesis, this theoretical dimension offers the valuable ex ante policy analysis (ibid.).

At the top of the right-hand box in Figure 10, the governance structure forms the legal framework for voting rules, property rights, bargaining conditions among stakeholders etc. (Rausser & Goodhue, 2002). By abandoning the Given Governance (GG) assumption, this analytical dimension draws boundaries for the political-economic link. Insights from this analysis shed light on the relationship between constitutions and the distribution of political power (ibid.).

4.3 Special Interest Politics

Agricultural policy is a classical example of policy interventions creating concentrated benefits for well-defined groups, imposing at the same time the costs diffused in society at large (Persson & Tabellini, 2000). The role of organised interest groups and the prevalence of rent-seeking activities is one of the crucial ideas within the public choice analysis and still highly relevant in today's research (Alesina, Persson, & Tabellini, 2006). Given the importance of farmers for political decision-makers in the industrialised countries as a relatively homogenous voter group with high lobbying potential, the implications of the conceptual background

discussing the logic of the interest aggregation via collective action becomes interesting in a special way.

4.3.1 Logic of Collective Action and Rent-Seeking

The explanation, why the relatively small group of agricultural producers obtain such a preferential treatment, dates back to the ground-breaking work of Mancur Olson: "Logic of Collective Action" (1965). The study focuses on the economic analysis of the relationship between group size and provision of collective goods. According to this theory, small special interest groups have an organisational advantage compared to large and inclusive interest groups. Within small groups, the benefits of membership for individuals are identifiable as the retrieval of collective goods depends directly on their contribution. The gain from the cooperation in small, "exclusive" groups (for example profits from a cartel) is mostly limited to the members. Furthermore, the close contacts in the small groups offer not only economic factors but also social incentives for the commitment. In the large, latent groups, individual costs and benefits are largely decoupled from each other. The public goods provided by those "inclusive" groups (such as favourable tariffs achieved by trade unions) are usually accessible for non-members as well. In such situations, it is prudent for an individual to choose the free riding strategy. Such behaviour is more likely the larger the group is and the broader their goals. Only negative or positive "selective" incentives or coercion can stimulate the members of the latent groups to act collectively. Olson concludes that the consequence of such group size dynamics can be the exploitation of general interests by the special ones and the accumulation of social distribution coalitions at the expenses of unorganised needs (Olson, 1965).

With the classical contributions of Tullock (1967), the school of thought highlighting rent-seeking in connection with monopolies emerged. His work extended the deadweight losses of the Harberger "triangle" to the profit "rectangle" representing the income transfer from the consumers to the monopolists. Tullock argues that the rational entrepreneurs would be willing to invest resources in an attempt to gain the monopolist position until the marginal costs would equal the marginal returns (Tullock, 1967). While in competition, outlays to establish the monopoly would equal the present value of the rectangle, which consequently should be added to the triangle when calculating welfare losses. Krueger (1974) extended Tullock's approach, presuming that all rents would be dissipated among the competitors.

The researchers of this early public choice tradition made valuable contributions to the development of political economy models. Persson and Tabellini (2000) criticise the researchers for being reluctant to use formal game-theoretic tools and to rely on the non-derived influence and political support functions with a rather weak micro-foundation.

4.3.2 Chicago School

One of the most significant schools of thought in the framework of political economy has been developed at the University of Chicago (Becker, 1983; Becker, 1985; Peltzman, 1976; Stigler, 1971). The Chicago School deals with the activities of industrial groups as demanders of regulatory policies in order to capture the market rents (Faulhaber, 1997).

Stigler's Theory of Economic Regulation

The conceptual framework of the Chicago School emerged with George Stigler's "theory of economic regulation" (1971). Within this positive theory, Stigler clarifies why, contrary to the economic rationale, it comes to the introduction and maintenance of regulatory exemptions. Stigler analyses the use of public resources under the point of view of a market where the demand for the regulation from the side of the economic groups meets the supply in the form of the coercive power of the state. Stigler investigates the market for regulation, its forms, implied benefits and burdens as well as effects on the allocation of the resources. His central thesis says that of all groups, regulations are mainly required by the industry and thus are established and operated for its benefit. The level of the effective demand of a group is a question of the numbers. "Producer protection" is reflected by the dominance of small, relatively homogenous groups with less organisational costs and high per-capita stake over large groups (consumers) with more diffused interests (Peltzman, 1976). Stigler specifies several ways the Government can use to assist the producers, among them direct subsidies, control over the market entry for new competitors, regulation of substitutes, complements and price-fixing. Stigler's approach has been criticised for not sufficiently addressing the question why particular instruments are chosen from this set (Rasmusen & Zupan, 1991). Besides pointing out that the policy-makers are interested in political support and resources for campaign contributions, the supply side of the regulation market is left as a black box.

Peltzman's Model

In his work "Toward a More General Theory of Regulation", Peltzman (1976) formalises the approach of Stigler and extends it by giving more attention to the motivation of the supply

side, i.e. legislators. In this model, the interest groups are contending with each other for the wealth redistribution through the regulatory process so that each group bids for the right to tax the rest of the society (Hirshleifer, 1976). Elected politicians or regulators interested in political support act as arbitraries. Each additional amount of favourable regulations for the producers brings their support on the one hand. The marginal gains of the policy-makers are weighted by the probability of such support in the future. On the other hand, due to the implicit taxation, the consumer will be eager to vote against the regulators in the future. Resulting marginal costs of the regulators are also weighted by the probability of the vote withdrawal. The regulators will balance the interests with the aim of finding an equilibrium, which maximises their chances of re-election (Peltzman, 1976).

Becker's Theory of Competition among Pressure Groups

Becker (1983, 1985) shares Olson's argument, that small groups can better avoid free riding and can solve organisation problems. However, unlike Olson in his game-theoretical framework, Becker argues that due to the competition between different pressure groups, the Government pursues more efficient redistribution policies (Becker 1983, 1985). The model deals with the "political influence functions", which relate the interest group pressure to taxes, subsidies and other variables. The competition between different groups is connected with each other by the equality between total tax collections and total subsidy payments. As an example, Becker introduces two interest groups. One of them is a typical "rent-seeking" association the other one is a rather weakly organised group such as a taxpayer union. The amount of the redistributive policy outcomes depends on the pressure each group exerts on the Government. More efforts in the rent-seeking activities induce more subsidies for the first group, however with diminishing marginal returns. The opposite is the case for the second group. The exercise of pressure is associated with the costs of the free riding containment for both groups. In the course of intensifying the lobbying activities, those are increasing marginal costs. Additionally, rent-seeking costs incur due to distortions of the relative prices or deterioration of the incentives as a result of redistribution etc. (Erlei et al., 2007). Both groups face these societal welfare losses. Thus, in the case of the first, "rent-seeking" association, the increasing pressure implies more subsidies, but at the same time rising organisational costs and deadweight losses. This group will continue to exercise additional units of pressure as long as the achieved marginal subsidies exceed the marginal costs. Analogously, another group will continue to apply political pressure, as long as the produced tax reduction is higher than the additional expenditure. These optimal conditions are based on the simplifying Cournot-Nash as-

sumption that additional pressure does not affect the political costs of the other group. Rising lobbying activities with its consequences induce the counter-pressure on the other group. The game of the mutual adjustment of the political pressure ends, when for both groups the optimal conditions are fulfilled and a Cournot-Nash equilibrium is reached. In Becker's point of view, all groups prefer and lobby taxes with less deadweight costs because this improves the welfare of all since the taxpayers exert less pressure. This gives the taxpayers an intrinsic advantage in the competition for influence. Based on these considerations, the policies that raise welfare are more likely to be applied (Becker, 1983, 1985).

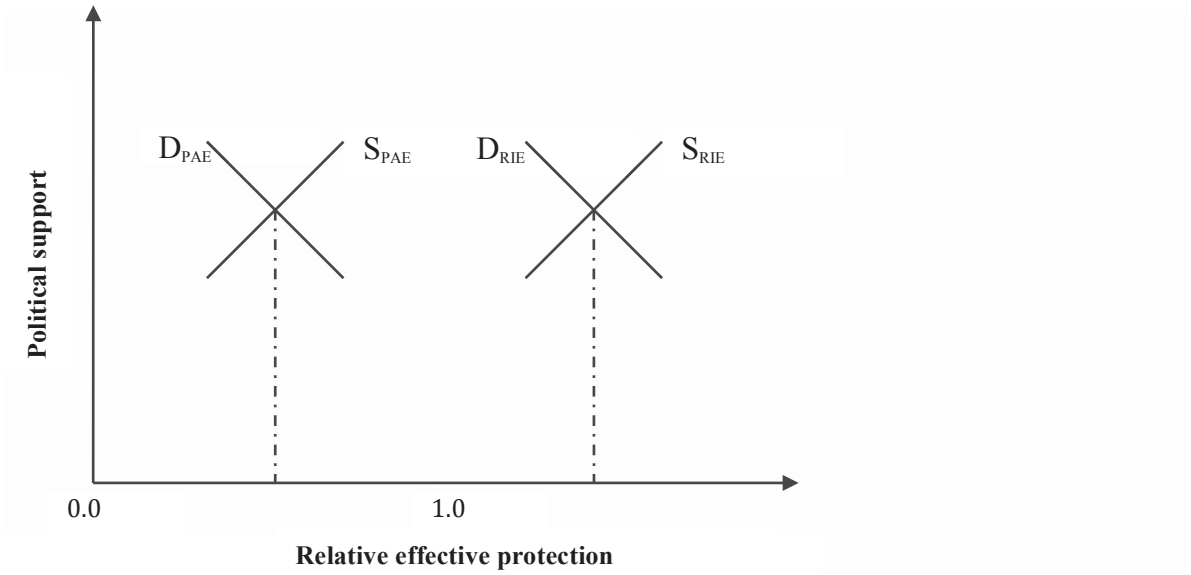
In all models of the Chicago School, the Government has a rather limited autonomy and acts just as a broker for the redistribution among interest groups. For these models, the public policies are a result of the competition between different stakeholders without any significant self-interest of the Government (Rausser & Goodhue, 2002). This assumption seems to be at odds with the rationality notion of the political economy according to which political actors pursue their own goals.

4.3.3 The Tyers and Anderson Model on the Political Market for Price-Distorting Policies

In their book "Disarray in World Agricultural Markets", Tyers and Anderson (1992) aim to explain the differences of agricultural policy patterns in high- and low-income countries. While rich countries tend to provide assistance to their farmers, developing countries rather demonstrate a pro-urban bias and tax the farm production. This stylised fact about the so-called development paradox has been an issue in the contributions of several authors (Anderson et al., 1986; Krueger et al., 1988; Lindert, 1991). Building on the theory of Stigler and Peltzman, Tyers and Anderson developed a model of a political market for price-distorting policies in which various interest groups affect the demand for and the supply of both agricultural and industrial price and trade interventions. With increasing protection, marginal willingness of a group to political support is assumed to decrease. The rising incentive to enter the market as a result of more assistance leads to the spreading of the benefits and the aggravation of the free riding problematic. On the other hand, at a higher level of intervention, the Government loses support from disadvantaged groups for whom the negative effects exceed the costs of collective action for the opposition. The point where the marginal political support of the favoured group equals the marginal political cost in terms of reduced support by the taxed group determines the amount of assistance. One way to quantify the level of assistance to a sector is the Effective Protection Coefficient (EPC), which is defined by one plus

or minus the proportion by which the policy instruments directly raise or lower the value added in the given sector. The political market for the assistance to agriculture in ideal-typical poor agrarian and rich industrial countries is illustrated in Figure 11. The vertical axis measures the marginal costs of the political support to the agricultural sector depending on the unit of protection. The horizontal axis measures the Effective Protection Coefficient of the agriculture relative to the industry. It is conjectured that the policy-makers offer a negative protection to agriculture in developing countries and positive protection in the industrial economies (Koester, 2005).

Figure 11 Political market for governments assistance to agriculture



D and S refer to the demand and supply curves; PAE and RIE refer to Poor Agrarian Economy and Rich Industrial Economy.
The relative protection index is defined as the Effective Protection Coefficient (EPC) for agriculture relative to a given EPC for the industrial sector. The index exceeding or less than 1.0 indicates that the policy is effectively assisting or taxing agriculture relative to industry.

Source: Tyers & Anderson (1992).

Tyers and Anderson analyse the systematic determinants of the agricultural protection patterns in low-income and high-income countries. The authors identify five sets of parameters whose changes have important effects on the price and trade policies. The first one is the relative importance of agriculture in terms of employment. In a typical poor country, the share of the working population engaged in agriculture is much higher than in industrial countries. Another difference in concern is the consumption pattern. As demonstrated by Engel's law,

the proportion of food expenditure declines with increasing income. In poor countries, food accounts for around half of the household expenditure. Consumers in developing countries are more sensitive to the level of the food prices and their dependence of the political influence is higher (Koester, 2005). The third central parameter relates to the importance of the use of purchased inputs and capital items. The share of intermediate inputs of predominantly subsistence farming in low-income countries is substantially smaller than in high-income countries where agriculture tends to be more intensive than the other sectors in terms of purchased inputs and physical capital (Tyers & Anderson, 1992).

Thus, the positive income effect as a result of a 1%-increase of the agricultural price level is higher in advanced industrial countries where the intermediate inputs contribute considerably more to the product value. The fourth typical feature distinguishing the Poor Agrarian Economy (PAE) from the rich one is the difference in trade specialisation. The change of the relative factor endowment in the course of economic development (i.e. the accumulation of capital and the relative declining of land value for the entire capital stock) decreases the comparative cost advantage of agriculture, which becomes a shrinking sector. In this case, the state interventions in favour of farmers can be justified more easily from the viewpoint of distributional policy. Finally, rural population in developing countries is only marginally taxed directly due to the difficulties to detect the income of predominantly subsistence farmers. The costs of tax collection would exceed the revenues raised. The rather small urban sector in these countries is sensitive to changes of the tax burden (Koester, 2005).

Given these assumptions, Tyers and Anderson generate the representative effects of the agricultural policy interventions on factor rewards, output, employment, tax revenue and real income of different groups in the typical low-income and high-income economies.

These effects can shed light on the rationale of the political economy and explain why the marginal rate of transformation, i.e. the level of income loss in one sector which is needed to raise the real income of another by an additional unit, systematically varies in archetypical rich and poor economies. All in all, the level of agricultural protection is explained by the differences in economic structure and in the efforts and expenditures of the interest representation. The institutional framework and the processes of political decision-making are neglected.

4.4 General Interest Politics

Another type of political economy models focuses on the interrelations of voters (or citizens in non-democratic countries) and political decision-makers instead of the interest groups. The basic model evaluating public policy issues on an economy-wide basis is the median-voter theorem of Downs (1957), originally formulated by Black (1948). According to the theorem's predictions, the rational policy-makers would commit themselves to the position which corresponds to the preference of the median voter. The equilibrium can be reached only under the following necessary conditions: single-peaked distribution of preferences, one policy dimension, only two competing parties and fully informed politicians and constituencies. In the literature on agricultural policies, the median-voter model has been extended and formalised (de Gorter & Swinnen, 2002). De Gorter and Tsur (1991) as well as Swinnen (1994) and other researchers specified political support as a function of change in utility induced by policy.

Apart from the traditional median voter approach, a number of concepts were elaborated which generated additional insights. These models incorporate institutional settings and, in tradition of Buchanan and Tullock (1999), emphasise the role of the political system for policy-making (Swinnen, 2010). The institutional characteristics include the importance of electoral rules (Persson & Tabellini, 2000, 2005), different rules for electing and dismissing the executive (Aghion et al., 2004) as well as the role of ideology (Dutt & Mitra, 2005). There are studies which deal with systematic differences between democratic systems and autocracies with regard to the economic (Acemoglu & Robinson, 2006) and agricultural policies (Olper, 2001, 2007).

4.4.1 Political Preference Function (PFF)

By deciding about certain measures, the policy-makers manifest that, in consideration of all relevant aspects, these decisions have the highest "policy value" for them. The weighting between different objectives can be expressed more precisely if one regards the "policy value" as Political Preference Function (PPF) W, which describes the role of particular objectives and is seen as the outcome of a political decision-making process (Henrichsmeyer & Witzke, 1994):

$$W = W(Y_1, Y_2 \ldots Y_n)$$

W= policy value

Y_i = objective or objective variable ($i=1, 2,..., n$)

The PPF approach assumes that the policy measures represent the political economic equilibrium summarising all relevant influence of political agents and groups (Swinnen & Van Der Zee, 1993). Depending on their relative political power, social groups have different weights. The arguments appearing in the PPF should relate to the key factors, which are on the agenda of the bargaining process and reflect the well-being of each pressure group. The number of arguments can in principle be unrestricted. Usually, differentiation between groups is similar to the one in welfare economics: consumers, producers and taxpayers (ibid.). There are three possible ways to obtain the weights of the PPF (Rausser & Freebairn, 1974). Firstly, the direct approach foresees the interviews with the central decision-makers. Secondly, by the indirect "revealed preference" approach, the set of the Political Preference Functions is inferred from past decisions. The choice of the policy instruments is constrained by the economic structure, which is reflected by the surplus possibility or the transformation frontier (de Gorter and Swinnen, 2002). Bullock and Jeong (1994) differentiate between two "sides" of the PPF methodology. The "substitution" side shows how the Government is willing to substitute one group's welfare for the welfare of another group. The "transformation" reflects the set of technically feasible outcomes and is the only observable side. From its characteristics, the PPF methodology infers the function of the unobservable "substitution" side. The third approach involves the researcher's arbitrary estimation of the coefficients. The determination of the mathematical structure allows different forms. It should formalise the assumptions regarding the marginal social preference or utility of individual arguments and the rate of substitution between different arguments (Rausser & Freebairn, 1974).

The PPF approach has been widely applied in agricultural economics research with the aim to explain the causes of governmental policy-making. There are, however, some critical voices regarding the shortcomings of the model. Gardner (1989) identifies the necessity of the research agenda concerning the stability of political preferences. Thereby, he draws the analogy with consumer theory. In the latter, the demand functions are derived from a utility function, which is assumed to be stable and exogenous. With regard to the logic of the consumer theory, the preference function should reflect people's goals, values and beliefs. Gardner (1989) argues that the weights in the preference function are endogenous. It has similar consequences like the diminishing marginal utility in the consumer theory and generates convex political

indifference curves. However, due to mathematical simplicity, most empirical investigations use fixed weight Political Preference Functions, which imply linear indifference curves. This underlines the weakness of the PPF for the evaluation of policy scenarios (Gardner, 1989). Cramon-Taubadel (1992) makes a distinction between positive and normative research with the PPF concept. Regarding the positive concept of revealed preferences, he questions the specification of the PPF and the deduction of the parameters because of highly aggregate groupings and neglects the upstream and downstream industries. Furthermore, the passive role of the policy-makers, the neglected bureaucracy, the inappropriate reflection of institutional change as well as the deficient attention to the policy interaction itself are the objects of the criticism. Additionally, Cramon-Taubadel (1992) shows scepticism towards the interpretation of the PPF weights. As the surplus transformation curve is constantly shifting, the change of the weights cannot be explained only by the political preferences. The problem with the use of PPF in the normative framework is the misleading assumption that the observed policies are optimal. Also, the danger of overlooking the possible differences between PPF and the social welfare function should be taken into consideration (Cramon-Taubadel, 1992). Another critical point concerns the interpretation of the PPF weights as indicators of the political significance of the interest groups. The political influence is not perceived as an independent variable, but directly equated with the politically induced net welfare of the interest groups (Henning, 1996).

4.4.2 Models for Multi-Dimensional Policy Decisions

The restrictive assumptions of the median voter model, especially its requirement of the normally distributed one-dimensional police preference, set limits to its applicability. As Condorcet's paradox implies, even the existence of the transitive individual preferences cannot guarantee collective decisions in the case of multidimensional policies due to cyclic majorities. Thus, there are no Nash equilibria and the democratic decision-making processes are unstable from the theoretical point of view (Grüner, 2001). Bearing this problem in mind, probabilistic voting models (Hinich, 1977; Coughlin & Nitzan, 1981; Ledyard, 1981, 1984) attempt to forecast the result of the competition between political parties. The models introduce uncertainty into the equation which is inherent to voter behaviour. By the determination of the political programme, parties can only influence the probability to be elected. Although the probabilistic voting became an important tool for posing positive and normative questions in voting theory (Persson and Tabellini, 2000), there are very strong assumptions concerning the stochastic distribution and utility function which have not been yet empirically verified

(Grüner, 2001). Other approaches, which try to generate the stable equilibria of multidimensional decisions, are the agenda-setter models (Romer & Rosenthal, 1978, 1979; Shepsle, 1979; Shepsle & Weingast, 1981). They imply that, in many political decisions, specific actors have influences on the selection of one proposal among various alternatives. The theory of non-cooperative bargaining games (Baron & Ferejohn, 1989) assumes that, even under open agendas, there is an equilibrium in the case that the delay of the final agreement incurs costs (Persson & Tabellini, 2000). The political decisions are made through sequential voting games. The problem with these models is the fact that they usually do not lead to explicit equilibria. In addition, they are formulated relatively abstractly. The number of actors is limited and they are fully informed about both the control endowment and the preferences of the other actors. These assumptions make the empirical application of such models on political decisions difficult (Krause, 2005).

4.5 The Political Exchange Model of Coleman and Henning

Political exchange models also aim to explain multidimensional collective decisions. One of the most influential theoretical approaches in the field of vote exchange is a theory originally developed by James Coleman (1966). The starting point of the model are rational actors which, being faced with a sequence of social choices, exchange their partial control over issues that interest them only a little for greater control of those that interest them more. This interest-balancing system contradicts the impossibility theorem of Arrow (1951) who indicated that no voting decision rule could give a socially "reasonable" outcome under all distributions of individual preferences (Coleman, 1966). Coleman, however, circumvents this theoretical objection by referring its decision rule to several events that are to be decided at the same time or in the same social context (König, 2013). Based on the principle of logrolling, a balance of interests is achieved without a central coordinating body by the exchange of control through collective decisions. The invisible hand of the market bundles a number of individual interests to a common good. The exchange of the control resources takes place on the perfect market (Kappelhoff, 1993). Thus, Coleman applies the microeconomic model of the market equilibrium in the context of political science where the negotiation system represents the analogy to the market and policy issues substitute the economic goods (Linhart, 2006).

The collective decision of political actors is modelled as follows. A set of political agents $(i = 1,...,n)$ decides upon several policy issues $(\alpha_j = 1,...,m)$. Hereby, the agents either agree on or reject the suggested proposals. The institutional rules determine the political power or control

C_{ij} of each player. The sum of the control resources of all actors in one political dimension equals 1. The agents have furthermore different interest intensities X_{ij} with regard to the various policy issues. Again, X_{ij} is scaled so that the interests of actor i sum up to 1.

According to the central behavioural maxim of the Coleman model, i.e. proportional resource allocation, the political actors deploy their resources proportionally to their interest intensities within the available budget and given market prices (Kappelhoff, 1993). If v_j is denoted as the market price of an issue, the budget or the total recourse income p_i of the actor reflects the sum of his or her entire initial control endowment, weighted with market prices:

(4-1)

$$\boldsymbol{p_i = \sum_{j=1}^{m} c_{ij} v_j}$$

c^*_{ij} represents demand for political control in dimension j under consideration of the respective market price. The proportional allocation of resources is thus the precondition for the market equilibrium (Coleman, 1990):

(4-2)

$$\boldsymbol{c^*_{ij} = \frac{x_{ij}}{v_j} p_i}$$

Coleman derives the actors' individual demand for control from the utility function of the Cobb-Douglas type for divisible private goods. The utility of an actor U_i can be specified depending from his or her control endowment and interest structure as follows (Kappelhoff, 1993):

(4-3)

$$\boldsymbol{U_i = \prod_{j=1}^{m} c_{ij}^{x_{ij}}}$$

The assumption that the legislators can exchange their votes like commodities would not make sense under a discontinuous decision rule where additional votes lose meaning once the majority for a decision is reached (Knoke, 1996). Coleman deduces that the actors do not know the preferences of the others and have no expectations regarding their future behaviour (Krause, 2005). The underlying decision rule of the Coleman model, which determines the outcome of collective decisions, is referred to as the probabilistic decision rule. It means that

each control share c^*_{ji} can be understood as a random lottery ticket. The probability that the proposal of the issue *j* will be accepted results from the sum of control shares of the actors who support the adoption of the given proposal. Accordingly, the same applies to the probability of a negative decision (Linhart, 2006):

(4-4)

$$c_{ji}^{+} = \sum_{\{i=accept\}} c_{ji}^{*}$$

$$c_{ji}^{-} = \sum_{\{i=reject\}} c_{ji}^{*}$$

The probabilistic decision rule turns collective decisions into divisible private goods. The possible external effects, which other decision rules would involve, are thus eliminated (Kappelhoff, 1993).

The total supply regarding issue *j* results from the sum of initial control resources multiplied by the respective market price v_j. As the overall control is standardised, the total supply corresponds to the value or the relative price of the issue:

(4-5)

$$S_j = \sum_{i=1}^{n} c_{ij} v_j = v_j$$

The overall assessed demand *D* for the issue *j* results from the rule of proportional resource allocation and is formally expressed as:

(4-6)

$$D_j = \sum_{i=1}^{n} c_{ij}^{*} v_j = \sum_{i=1}^{n} x_{ij}\, p_i$$

Through the equalisation of supply and demand, the market equilibrium can be achieved:

(3-7)

$$v_j = \sum_{i=1}^{n} x_{ij}\, p_i$$

On the basis of the information about the actors' interests and the initial distribution of power, all necessary coefficients can be determined by means of the equation for the budget or total resource income p_i. Thus, the equation (3-7) can be rewritten as:

(4-8)

$$v_j = \sum_{l=1}^{m} v_l * \left(\sum_{i=1}^{n} c_{il} x_{ij} \right)$$

In matrix notation, the relative price can be determined as the left eigenvector of the control and interests' intertwining matrix (CX) which is right stochastic as are C and X matrices:

(4-9)

$$v = vCX$$

After determining the price vector, the budget or total resource income *p* can be calculated trough the switching of the equation (4-1) into matrix notation:

(4-10)

$$p = vC$$

Through calculation of the prices *v* and the budgets *p*, the equilibrium control demand *C** problem from the equation (4-2) can be solved.

The Coleman model has been criticised, extended and modified into a number of new models.[22] While the Coleman model, for instance, assumed that the exchange possibilities are unrestricted, later models introduced the notion of unequal exchange opportunities by relating Coleman's exchange model to networks (Marsden & Laumann, 1977; Knoke et al., 1996; König, 1997; Laumann, Knoke, & Kim, 1987; Pappi & Henning, 1998). In these models, structural limitations force actors to an exchange with certain other actors (Stockman et al., 2013). Despite extensions, however, these models accept the central assumption of the original Coleman model. Henning, on the other hand, developed a modified model in which he addressed the critical points, in particular the axiomatic assumption of proportional resource allocation, a probabilistic decision rule and a dichotomy of decision outcomes (Arndt, 2008). The latter relates to the problem that the ideal positions in the Coleman model allow only acceptance or denial of proposals. Henning (2000), in contrast, argues that the negotiation of objects may have a multi-optional character in reality. Henning modelled the exchange as a two-stage process, where at first a finite number of proposals are suggested (ideal positions of the actors and compromise proposals). One of these proposals becomes the outcome of the

[22] Pappi et al. (1995) offer a comparison between the original Coleman model and the modified exchange models.

negotiations at the second stage (Linhart, 2006). With regard to the proportional resource allocation and the probabilistic decision, Henning takes on the critical point of Kappelhoff (1993), according to which the Coleman model as a market model for divisible private goods is hardly applicable for collective decisions. Thus, instead of the probabilistic decision rule, Henning (2000) introduced the mean-voter theorem, initially developed by Pappi and Henning (1998), as the basis of collective decisions. The mean-voter theorem reflects the negotiation process in a more realistic way and allows utility maximisation based on individual rationality (Arndt, 2008).

According to the mean-voter theorem, the final outcome α_j^* corresponds to the weighted mean of overall positions preferred by the agents Y_{ij}. The weights of the preferred position correspond to the amount of political control demand in equilibrium C^*_{ij}:

(4-11)

$$\boldsymbol{\alpha_j^* = \sum_{i=1}^{n} C_{ij}^* Y_{ij}\,, \quad with \sum_{i=1}^{n} C_{ij}^* = 1}$$

The utility of each agent depends on the distance between the ideal position and the actual decision in the policy issue, weighted by the according interest intensity. Henning (2000) introduces a two-stage utility function:

(4-12)

$$\boldsymbol{U_i(\alpha) = \prod_{j=1}^{m} \left(d_{ij}(\alpha_j)\right)^{x_{ij}}\,, \sum_{j \in M} x_{ij} = 1}$$

$$\boldsymbol{with \;\; d_{ij}(\alpha_j) = 1 - \sqrt{(Y_{ij} - \alpha_j)^2}}$$

Given this utility function, every actor *i* has a special single-peaked part utility function for each dimension *j*. On the second stage, the part utilities of all dimensions are summarised to an overall utility in accordance with the Cobb-Douglas function (Henning, 2000).

Henning determines the political control demand beyond the proportional resource allocation under consideration of the external effects of vote exchange. To this end, he introduces the term of political commitment. Commitments imply that the control demand of the agents is adjusted to the demand of the other actors. The smaller the gap between the expected outcome and the preferred position of the actor, the lower is his or her control demand (ibid.). Consid-

ering the external effects, the application of the model is connected with operational difficulties (see Henning (2000) as well as Stoiber (2003) for more information). For this reason, empirical applications of the Henning model were conducted in its reduced form. This reduced form operates with continuous proposal options per issue, uses the mean-voter decision rule and the two-stage utility function but does not consider external effects and thus holds on to the proportional allocation of resources (Linhart, 2006).

4.6 Influence of Interest Groups and Policy Networks

Instead of being exclusively made by central legislative or executive authorities, policies in modern societies arise as the result of processes involving a number of public and private organisations (Mayntz, 1993). “Policy networks” are entities, within which policies are formulated, decided and implemented. They consist of public and private actors interested in specific policies and regarded as players by the others. While the policy network analysis as a concept of political science describes new the governance form as a metaphoric concept, it is a tool of quantitative sociology and maps the relations between the actors. In order to further develop the explanatory power of the policy networks beyond both of these concepts, Pappi and Henning (1998) developed a formal theory of networks. It allows the theoretical derivation of relation patterns of actors’ relations and interest mediation and, by introducing network characteristics, prediction of policy outcomes (Pappi & Henning, 1998).

Henning explicitly incorporates interest groups into the political processes of the legislative voting model. According to the model assumptions, political actors are interested in re-election for which they need support from interest groups in terms of votes or financial donations. Moreover, political institutions rely on the expertise of relevant organisations in order to assess the consequences of complex policies. The interest groups, on the other hand, strive to get involved in the policy-making process and exert political influence. They also need information about the proposals at the earliest possible stage of the political process. Given these prerequisites, there are incentives for both sides to exchange resources. Specifically, policy decisions are modelled as a result of the exchange of control and influence resources between different actors within the networks. Using quantitative network analysis, the respective lobbying strategies can be detected and the influence of interest groups on political decisions determined (Henning, 2000, 2004).

Contrary to the transfer of commodities, the transfer of politically valuable influence resources is made complicated by the fact that they are not alienable. Hereby, promises are be-

ing exchanged to use part of one's resources for the other actor. So, transaction is beset by the potential problem of opportunistic behaviour (Henning, 2004). The transfer has to be embedded in a trust relationship, which guarantees that promises will be held (Henning, 2002; Kappelhoff, 1993). As Henning (2002) has demonstrated, trust between two players emerges, when actors have the possibility to punish deviating behaviour. The resulting transaction costs of resource exchange between policy-makers and interest groups are minimised by the fact that the exchange takes place in policy networks. Networks are based on long-term communication relationships and exchange of organisational resources between the involved actors. The less the actors are embedded in the social network, the higher are their transaction costs for resource exchange. Thus, transaction costs imply restrictions on the supply of an actor's resource. The actors can only gain from the exchange if the price for the additional unit supplied to another actor is higher than the sum of the marginal consumption value of that unit minus the disutility of the transaction itself (Henning, 2000, 2004). Empirically, it is complicated to individually assess the disutility of overcoming social distances. Therefore, in the framework of the applied reduced model, transaction costs of exchange are measured not directly, but indirectly on the basis of empirically observed resource transfer nets.[23]

As described above, the starting point for the modelling of resource exchange with transaction costs is the fact that there are actor- and resource-specific transfers in the exchange equilibrium. The political exchange equilibrium corresponds to the interregional exchange equilibrium with transport costs, every individual actor representing one region of its own. The regional market equilibrium can be presented as a linear equation system with regional specific resource prices $\boldsymbol{V^*_{ik}}$.

(4-13)

$$\boldsymbol{V^*_{ik}}\left(\boldsymbol{C^a_{ik}} + \sum_{\boldsymbol{e\in N}}(\boldsymbol{T^*_{eik-}}\,\boldsymbol{T^*_{iek}})\right) = \boldsymbol{X_{ik}P_i}$$

$$\forall \boldsymbol{i \in N}, \forall \boldsymbol{k \in R}$$

with

$$\boldsymbol{P_i} = \sum_{\boldsymbol{k\in R}}(\sum_{\boldsymbol{e\in N}}\boldsymbol{T^*_{iek}V^*_{ek}} + \left(\boldsymbol{C^a_{ik}} - \sum_{\boldsymbol{e\in N}}\boldsymbol{T^*_{iek}}\right)\boldsymbol{V^*_{ik}})$$

[23] The following description of the theoretical model is based on Krause (2005) as well as Henning (2000, 2004).

($\boldsymbol{T^*_{eik} - T^*_{iek}}$) represents the transfer between the actors *i* and *e*. P_i indicates the total income or the power of the actor *i* in the equilibrium. It results in the sum of control endowment of the actor multiplied with the respective resource prices. Empirically, however, it is difficult to quantify the transfers exactly. Furthermore, there are so-called broker relationships as the actors with better access to possibilities act as middlemen for the resources they are not interested in themselves. With this in mind, the transfer networks are regarded to be binary. $\boldsymbol{T_{iek}}$ does not measure the exact quantity, but indicates that the transfer takes place. Transaction costs within a region as well as between political agents at the core of the policy domain network are neglected.

The regional supply of resource *k* of one actor within one region results in:
(4-14)

$$\boldsymbol{C'^{ab}_{ik}} = \sum_{e \in b} \boldsymbol{T'_{iek}} \Big/ \sum_{h \in N} \sum_{e \in b} \boldsymbol{T'_{hek}}$$

with

$$\boldsymbol{T'_{iek}} = \boldsymbol{T_{iek}} \Big/ \sum_{h \in N} \boldsymbol{T_{hek}}$$

In this equation $\boldsymbol{T'_{iek}}$ states how much competition the actor *i* faces on the sales market *e*. Supply from the actor *i* to *e* ($\boldsymbol{T_{iek}} = \mathbf{1}$) is set as a share of the sum of all deliveries the actors *e* receives from all other actors *h*. Less competition on sales market implies a larger $\boldsymbol{T'_{iek}}$.

The equation (4-14) considers only the direct supply of resources between the actors. However, centrally positioned actors often act as middlemen, i.e. as brokers. They offer not only their own resources but forward resources of actors with less favourable access possibilities to the final market. Following that, the total supply of a resource *k* by the actor *i* occurs not only from his or her direct resource supply but also from the indirect resource delivery via a broker *g*:

(4-15)

$$\boldsymbol{C^{Hb}_{ik}} = \boldsymbol{C'^{ab}_{ik}} + \sum_{g \in N} \boldsymbol{T'_{igk}} (\mathbf{1} - \boldsymbol{S^B_{gk}}) \boldsymbol{C^{Hb}_{gk}}$$

While $C_{ik}^{'ab}$ shows the direct delivery by the actor *i*, the second term of the equation represents the indirect delivery from the actor *i* via the broker *g*. S_{gk}^{B} denotes the broker's share *g*. It can be calculated as:

(4-16)

$$S_{gk}^{B} = \frac{T_{gek}V_{ek}^{*} - T_{igk}V_{gk}^{*}}{T_{gek}V_{ek}^{*}}$$

The broker's share lies between 0 and 1. The first product in the counter reflects the value of the total transfers of the brokers *g* to the final customer *e*. V_{ek}^{*} is hereby the price which the broker *g* receives from the actor *e* for the resource *k*. The second product in the counter is the value of the preliminary transfer of the actor *i* to the broker *g*. The broker's share is the part of total delivery which originates from the broker himself or herself. Accordingly, *(1-* S_{gk}^{B}) is the share of the total delivery from the broker *g* which he or she originally received from the actor *i*.

In the equation (4-15), the term $(1 - S_{gk}^{B})C_{gk}^{Hb}$ is the part of total supply which the broker *g* receives from his or her original supplier(s). $S_{gk}^{B}C_{gk}^{Hb}$ on the contrary, is the part of total supply which stems from the broker him- or herself. This part of total supply corresponds to the original resource endowment of the broker (C_{gk}^{a}).

Since basically every agent can act as a broker, the brokers' share shown in the equation (4-16) can be formulated more generally for all actors:

(4-17)

$$S_{ik}^{B} = \frac{\sum_{e\in N}(T_{iek}V_{ek}^{*} - T_{eik}V_{ik}^{*})}{\sum_{e\in N}T_{iek}V_{ek}^{*}} = 1 - \frac{V_{ik}^{*}}{\frac{1}{\sum_{e\in N}T_{eik}}\sum_{e\in N}T_{iek}V_{ek}^{*}} =$$

$$= 1 - \frac{V_{ik}^{*}}{\sum_{e\in N}\frac{T_{iek}}{\sum_{e\in N}T_{eik}}V_{ek}^{*}} = 1 - \frac{1}{TOT_{ik}}$$

$$TOT \approx exp\left(\frac{1}{\sum_{e\in N}T_{iek}}\sum_{T_{iek}=1}\frac{\sum_{e\in N}T_{eik}}{\sum_{h\in N}T_{hek}}\right) =$$

$$= \exp\left(\frac{1}{Number\ of\ sales\ markets\ accessed\ by\ i}\sum_{T_{iek}=1}\frac{Number\ of suppliers\ on\ the\ input\ market}{Number\ of\ suppliers\ on\ the\ sales\ market}\right)$$

The Terms of Trade (TOT) and the broker's share $\boldsymbol{S_{gk}^{B}}$ are higher, the larger the number of suppliers on the input market and the smaller the number of suppliers on the sales market. Broker shares are determined by considering the structural embeddedness of actors. The amount of the broker's share depends not only on the number of the direct relations to the actor *i* but also on the embeddedness of the rest of the actors. The broker's share of the actor, as he can select from a variety of actors on the input market and at the same time faces little competition on the sales market, is relatively high.[24]

The total supply of the resource *k* of the actor *i* can be calculated in the matrix form as:
(4-18)

$$\boldsymbol{C_k^{Hb} = c'^{ab} + T^k(1 - s_k)_{diag} C_k^{Hb}}$$

$$\boldsymbol{C_k^{Hb} - T^k(1 - s_k)_{diag} C_k^{Hb} = c'^{ab}}$$

$$\boldsymbol{\left(1 - T^k(1 - s_k)_{diag}\right) C_k^{Hb} = c'^{ab}}$$

$$\boldsymbol{c_k^{Hb} = \left[1 - T^k(1 - s_k)_{diag}\right]^{-1} c'^{ab}}$$

The original resource endowment (endowment before exchange) of the actors ($\boldsymbol{c_k^{ab}}$) can be calculated through their broker shares and the total supply. The original resource endowment in the matrix form can be formulated as:
(4-19)

$$\boldsymbol{C_k^{ab} = [s_k]_{diag} C_k^{Hb}}$$

The exchange equilibrium for the model in the reduced form can be calculated analogically to the model of Coleman. The equilibrium prices *v** can be calculated as a left eigenvector of overlapping control and interests matrices ($\boldsymbol{C^a X}$).

4.7 Protection for Sale

The observed discrepancy between the economically desirable "free trade" and the prevalent protectionist policies worldwide has been often attributed to "politics". The vast amount of

[24] For the case when the actor only supplies resources without demanding them the broker only acts on his or her own. The broker share is set to 1.

literature dealing with the political economy of trade was literally transformed by the model of Grossman and Helpman (1994), which became an almost standard theoretical framework on trade policies, even though its major projections seem to be inconsistent with what is assumed to be the basic empirical experience [25](Swinnen, 2010,). Grossman and Helpman (1994) developed an equilibrium model delivering predictions about the cross-sectional structure of trade protection in accordance with lobbying efforts of interest groups. The model provides a clear-cut micro-foundation for the behaviour of organised lobbies and politicians (Rodrik, 1995) and derives the protection level, i.e. trade taxes and subsidies, from the characteristics of industries. Another advantage of the model is its empirical application, which, according to Gawande and Krishna (2003), is closely related to the theoretical model. The tightness of the model forecasts makes it appropriate for cross-sectional data (Gawande & Hoekman, 2006).

The incumbent Government is assumed to care for the maximisation of a weighted social welfare W on the one hand and for the total level of political support C provided by lobbying groups on the other hand (ibid.)[26]:

(4-20)

$$\boldsymbol{G = aW + C}$$

Where a is the weight, the Government puts on a unit of aggregate society welfare relative to a unit of lobbying support. If policy-makers were concerned about the welfare maximisation alone, free trade would be the efficient outcome (Gawande & Hoekman, 2006). Trade policies of the Government drive a wedge between domestic and world prices. Grossman and Helpman assume that the individuals get their income from wages, Government transfers and the possible ownership of the sector-specific input. State revenues from import tariffs are redistributed to the population as a lump sum payment. The owners of the input factor used in the industry i will view their income as being closely related to the domestic prices of the given industry. Given their common interest in protection (or export subsidies), they will pursue lobbying activities. Protection across sectors is measured as a vector of the trade policies on n goods. In the equilibrium, the Government chooses trade taxes and subsidies which satisfy (ibid.):

[25] For more details see Chapter 6.6

[26] The model has been initially developed in the context of the United States of America, where support takes the form of financial contributions. The data on lobbying can be obtained through the Political Action Committee (PAC).

(4-21)

$$\frac{t_i}{1+t_i} = \frac{I_i - \alpha_L}{a - \alpha_L} * \left(\frac{z_i}{e_i}\right) \quad for\ i = 1, 2, \ldots . n$$

In this equation, t_i is the ad valorem tariff or subsidy for good i. I_i is the political organisation indicator of a given sector and equals 1 if producers are engaged in lobbying and 0 otherwise. α_L represents the fraction of the total population organised as interest groups. The $z_i = y_i/m_i$ stands for the equilibrium ratio of domestic output to imports. In the case of exports, it is negative. e_i is the absolute elasticity of import demand or of export subsidy (ibid.). The policy equilibrium result describes a modified Ramsey rule, indicating that industries with high absolute import demand or export supply elasticity will be relatively less protected due to the higher deadweight losses. Furthermore, Grossman and Helpman argue that, in the course of the protection policies, income of the specific factor owners in sectors with large domestic output in relation to the imports can increase more and the economy as a whole loses less. Thus, the Grossman-Helpman Model predicts the level of trade protection as a function of the existence of lobbying groups, inverse of import-to-output and export-to-output ratios and import demand and export supply elasticities (ibid.).

The Grossman-Helpman Model has been applied in a number of empirical studies, which at least qualitatively confirmed its predictions (Goldberg & Maggi, 1999; Gawande & Bandyopadhyay, 2000; Eicher & Osang, 2002; Mitra et al., 2002; McCalman, 2004; Cadot et al., 2004; Lopez & Matschke, 2006; Belloc & Guerrieri, 2008; Hagemejer & Michalek, 2008). These results are striking, as they are at odds with the commonly believed but theoretically unproven conviction that protection increases with the import penetration ratio (Gawande & Bandyopadhyay, 2000). However, the surprising result of most empirical investigations is the fact that the domestic aggregate welfare weight in the political objective function is unrealistically large.

5 Quantitative Empirical Policy Analysis

5.1 Measurement of Institutional Power

In the framework of game theories, approaches have been developed aiming at measuring the power of political actors in different institutional settings. Power indices quantify the capability of political representatives to influence decisions. This capability is determined by constitutional rules and the distribution of votes in a given decision-making body. The classical power indices include the Banzhaf and Shapley-Shubik indices. Both power indices provide a "preference-neutral" analysis by considering the occurrence of any coalition among players equally likely (Holler & Owen, 2001). They are, however, addressing different aspects concerning the roles of decision-makers (Krzywdzinski, 2008). The Banzhaf-index of an actor's power indicates the number of all potential winning coalitions, in which his or her participation is critical in order not to lose the decisive power. The Shapley-Shubik index specifies the relative pivotal power, i.e. the significance of a voter to build a winning coalition. The power index examines all possible voting sequences and calculates the cases in which the coalition casts the deciding vote for every actor. The share of the decisive positions of an actor is then divided by the total number of sequences in which all voters are pivotal. The Shapley-Shubik power index can thus be interpreted as power fraction of a voter and is normalised between 0 and 1. Since the ability to enforce decisions appears to be more relevant and appropriate than the power to form blockades, the following considerations are based on the Shapley-Shubik index (Krzywdzinski, 2008). Formally, the index is calculated as:
(5-1)

$$\boldsymbol{\varphi i} = \sum_{\substack{\boldsymbol{i \epsilon S} \\ \boldsymbol{S \subset N}}} \frac{(\boldsymbol{s-1})!\,(\boldsymbol{n-s})!}{\boldsymbol{n}!}[\boldsymbol{v}(\boldsymbol{S}) - \boldsymbol{v}(\boldsymbol{S} - \{\boldsymbol{i}\})]$$

Here, *s* indicates the number of members in a coalition *S*, *n* – the total number of players and $[\boldsymbol{v}(\boldsymbol{S}) - \boldsymbol{v}(\boldsymbol{S} - \{\boldsymbol{i}\})]$ indicates the marginal value that member *i* attributes to the coalition *S* (Holler & Owen, 2001).

The voting power in the legislative procedures of the actors can be calculated with regard to institutional settings and specific legislative schemes. According to Pappi et al. (1995), three

types of formal collective political decision-making procedures can be distinguished: the legislative system, the policy leadership and the party government. The legislative system depicts only constitutionally defined decision-makers with intrinsic legislative powers: the Parliament, i.e. the factions in the Parliament, and the President without taking into account the agenda-setting power.

Table 5 Shapley-Shubik Power Indices under different scenarios

Political actors	Institutional Scenarios			
	Legislative	**Policy Leadership**	**Party Government**	**Two Chambers**
President	0.164	0.096	0.004	0.099
Verkhovna Rada	0.836	0.473	0.9842	Senate
Party of Regions	0.325	0.184	0	0.242
Bloc Yulia Tymoshenko	0.290	0.164	0.328	House of Representatives
Our Ukraine	0.134	0.076	0.328	0.248
Communist Party of Ukraine	0.050	0.028	0	-
Bloc Lytvyn	0.037	0.021	0.328	-
Government	-	0.430	0.012	0.409
Prime Minster	-	0.168	0.0048	0.163
Ministry of Agrarian Policy	-	0.168	0.0048	0.163
Ministry of Economy	-	0.095	0.0024	0.082
Total	1.000	1.000	1.000	1.000

Source: Own calculation based on Bräuninger & König (2005).

In contrast, the procedure of policy leadership additionally considers actors, as a rule the Government, who have the ability to exert decisive influence on the political agenda by proposing and even enforcing solutions in the form of legislative initiatives. The third type of the low-making procedure, the party government, assumes the existence of strong governmental majority coalitions. The gains are distributed among the governmental coalition partners. The decision-making authority of the opposition is reduced to zero (Pappi et al., 1995).

Table 5 depicts the voting power of Ukrainian political actors in the legislative procedure according to the Shapley-Shubik index in four institutional scenarios. In addition to the policy types presented by Pappi et al. (1995), the power indices of the bicameral parliamentary sys-

tem have been estimated. The power shares are calculated by the Indices of Power (IOP) 2.0-programme developed by Bräuninger and König (2005). The calculation of the voting power in Parliament is based on the number of deputies of each faction and, thus, their ability to build majorities and overrule the presidential veto by 2/3 of the votes in the Verkhovna Rada. The voting weights of the members of Government reflect their relevance in agricultural policy formulation. In the context of the Ukrainian policy-making practice, the procedure of policy leadership approaches the Ukrainian political circumstances in the most appropriate way. Especially with regard to the formation of the annual state budget, which is particularly important for agricultural policy-making, it has to be considered that the governmental authority initiates the legislation. Therefore, the power distribution of policy leadership has been applied for the calculation of the reference scenario, i.e. the status quo. The procedure of party government and bicameral parliamentary system were calculated in order to examine the orientation of agricultural policy-making under these alternative institutional settings (see Chapter 5.6). The legislative type is outlined only for comparative purposes.

5.2 Empirically Identified Policy Networks

In order to empirically measure the density of access of interest groups to political decision-making, a policy domain network tool has been applied. Questions about network relations in interviews delivered data about supply and demand of expert as well as monitoring information between agents and the demand of political support by political actors. Personal interviews were carried out with relevant political actors and interest groups in the Ukrainian agricultural policy domain. As in previous comparable studies (Henning, 2000; Krause, 2005), the identified institutions were perceived as corporate actors. The respondents were selected as the representatives or experts on behalf of the institutions or organisations in question. The positions of Presidential Administration, the Prime Minister as well as the factions of the Verkhovna Rada were surveyed through expert interviews in cooperation with the Institute of Economics and Forecasting of the National Academy of Sciences of Ukraine. Representatives of the Ministries of Agrarian Policy and Economy as well as associations were interviewed directly.

Following the questionnaire design of previous similar studies (Pappi & Henning, 1999; Henning, 2000; Krause, 2005), the interviewed persons were asked to choose all political actors and associations from a list with which their organisation maintains a certain type of relations, i.e. transfers resources, such as information and political support. The design of the

questionnaires varied for political actors and interest groups as it took into account the different supply or demand perspectives. Politicians as the suppliers of monitoring information had to indicate to whom they send this kind of information and from whom they receive expert information and political support. Concerning expert information, politicians were asked for example: “interest groups (and/or other political organizations) can frequently provide expert knowledge to political organizations, especially when consequences of complex policies have to be evaluated. Using the list of organizations again, please check all organizations from which your organization receives expert information.” (Pappi & Henning, 1999). Questions about public support were included only in the questionnaire for political institutions: “In democracies, political agents can be considered as representatives of their electorate. Therefore, political agents are interested to find political solutions supported by a majority of their electorate. Here, we have a list of organizations again, please check for those organizations which are important for you regarding the intermediation of political positions supported by voters.” (ibid.) Interest groups, on the other hand, could name the actors to which they send expert information and from which they receive monitoring information. The question regarding the expert information for the interest groups, for example, was formulated as follows: “Interest groups (and/or other political organizations) can frequently provide expert knowledge to political organizations, especially when consequences of complex policies have to be evaluated. Using the list of organizations again, please check all organizations to which your organization provides expert information.” (ibid.) Furthermore, respondents indicated their relative interest in different resources: political control, expert and monitoring information as well as political support.

After analysing the collected data, confirmed information exchange networks could be derived. If an organization “A” indicated that it demanded information from an organization “B” and the organization “B” verified that it supplied information to the organization “A”, the existence of the exchange relation was confirmed (Henning, 2000; Krause, 2005; Pappi & Henning, 1999; Pappi et al., 1995). The network of political support was based only on statements provided by political agents. Respondents were able to choose from a list of all organisations, regardless whether political institutions or interest groups. Owing to this design, it was possible to empirically derive even those transfer relations which were unforeseen by preliminary theoretical considerations. Thus, information transfer relations and provision of political support within the group of political agents could be observed. The confirmation of such kind of transfer networks took place through the crossing of monitoring and expert in-

formation networks. If a political agent reported to have sent monitoring information to another political agent, the transfer was considered as confirmed if the latter verified to have received expert information from the first one (Krause, 2005). Due to this necessity, monitoring and expert information networks were combined to one information network, unlike in the previous studies.

Based on Henning (2000) and Krause (2005), confirmed policy networks could be interpreted as empirically observed transfer exchanges among different players. By means of confirmed networks, the direct supply of resources was calculated and the original endowment with resources was measured. On the basis of the estimated reduced form of the general political exchange model, specific equilibrium prices of the resources were calculated. Finally, through equilibrium prices, total income, individual demand for influence and political control, resources of actors as well as resource transfers among actors were computed. The latter included not only transfers to final recipients but also intermediate transfers among actors and brokers. Information resources have been assumed to be homogenous, whereas political support has been interpreted as heterogeneous, which could not be further transmitted between different political agents. Thus, relations regarding political support have been abstracted from any broker relationships, i.e. all broker shares were exogenously set to 1 (Henning 2000; Krause, 2005, for further details).

Before presenting the results of the resource and power flows in terms of fractions of controls finally held by different players in the equilibrium, it is insightful to have a look at the descriptive information about the interaction channels. Hereby, the densities of relations are used as network indices to assess the importance of channels and the network position of the actors. The density represents the ratio as a percentage of all possible ties (Pappi et al., 1995; Pappi & Henning, 1999).

Within the information network, 15 confirmed exchange relations were found. Given that there are altogether 13 actors, the relation density is equal to 0.096. Compared to the density of information networks in the agricultural policy domain of Hungary, Poland, Czech Republic and Slovakia with 0.04 for monitoring and 0.05 expert information (Krause, 2005), the Ukrainian result is rather high.

In order to construct a clearer picture about the communication relations, Table 6 compares the amount of received and sent information by the different actors. The data in percentage terms represents the share of realised relations out of the potentially possible total number. In brackets, the received and transferred information are indicated in absolute terms (Krzywdzinski, 2008).

Table 6 Relevance of different actors as senders and receivers of information within the information network

Actors (n=13)	Number of confirmed information transfers		Share of realised transfers out of all possible ones	
	Received by	Sent by	Received by	Sent by
Ministry of Agrarian Policy (MoA)	7	5	58%	42%
Prime Minister (PM)	4	2	33%	17%
Ministry of Economy (MoE)	2	2	17%	17%
President (P)	0	4	0%	33%
Factions in the Verkhovna Rada, (n=5)	3	2	5%	3.3%
Interest Groups, (n=4)	7	8	15%	17%

Source: Own calculation.

The Ministry of Agrarian Policy (MoA) exchanges information with the highest number of actors. All surveyed interest groups send information to the MoA and, with only one exception, all of them receive information from the MoA as well. Generally, the Government, besides the Ministry of Agrarian Policy and also including the Prime Minister and the Ministry of Economy, is relatively well integrated. The confirmed resource and power flow occurs to a considerable extent internally between the bodies of the Government. The Presidential Administration sends information to a number of mainly political actors. However, it does not confirm to be receiving any information from the listed players. The factions in the Verkhovna Rada seem to be rather marginally involved in the information exchange network. Hardly any actor indicated that he or she receives or sends information to them. The possible explanation for the rather poor participation of the parliamentary factions may lie in the fact that the other players in the policy domain do not perceive the factions as individual actors. Presumably, the communication takes place with the Verkhovna Rada, or more concretely with

the Agrarian Committee as a homogenous actor. The interest groups are actively engaged in the information exchanges processes. There are eight actors to whom they send information and seven which confirm to have received information from them. Not surprisingly, the most important information exchange partner for the interest groups is the Ministry of Agrarian Policy. Exchange of information with other political agents occurs to a rather limited extent. The information exchange among the interest groups has not been confirmed.

The data about the sent information within the political support network is presented in Table 7. As in the case of the information exchange network, the data in percentage terms represents the share of the realised relations out of the total number of potentially possible interactions, while the absolute number of sendings is given in brackets. Contrary to the communication network, the number of potential receivers of political support is limited to nine, since only political actors are considered.

Table 7 Relevance of different actors as sources of political support

Providing actors N=13	Number of support transfers	Share of realised transfers out of all possible ones
Ministry of Agrarian Policy	5	63%
Ministry of Economy	5	63%
Prime Minister	4	50%
President	3	38%
Factions in the Verkhovna Rada (n=5)	12	30%
Interest Groups (n=4)	16	44%

Source: Own calculation.

In the field of political support, there were 45 relations, which corresponds to a density of 0.29. The comparable density in Hungary, Poland, Czech Republic and Slovakia amounted to 0.03 (Krause, 2005). The relatively high density in the Ukrainian support network is surprising and at odds with the assumption that the respondents are reluctant to reveal their sources of political support. Some researchers therefore have a rather sceptical stance towards using political support as a type of relationship permitting the access to political decision-making. According to Pappi et al. (1995), the answers to the questions about political support are culture-specific. Therefore, studies applying methodologically related approaches limit their research on information flows, as the answers to the according questions prove to be most ro-

bust (Pappi et al., 1995; Krzywdzinski, 2008). In this study, however, the resource exchange with regard to political support was applied despite these concerns, since it was encouraged by survey results.

The results imply that political support is provided not only by interest groups but also by political agents. The mean number of sendings delivered by interest groups is at 4.75 higher compared to 3.2 of sendings provided by political agents on average. Nevertheless, political actors as suppliers of political support, including first of all governmental bodies like the Ministries of Agrarian Policy and Economy, the Prime Minister, the President and, to a lesser degree, the factions in the Verkhovna Rada, proved to be also important for the intermediation of the political positions supported by voters. The higher denominator with nine possible political recipients instead of eight explains the relatively low percentage of realised relations in the case of the interest groups.

The results of the network position analysis can be summarised as follows. The Ministry of Agrarian Policy plays the role of most important gateway in the policy domain according to the absolute number and density of sent and received information. Formally, the interaction between the Ministry of Agrarian Policy and the interest groups takes place within the Public Council, which was created in 2001, as described in Chapter 3.4. The governmental bodies as well as the interest groups are relatively well integrated in the information exchange network. Besides the mentioned Public Council under the Ministry of Agrarian Policy, the executive branch maintains a permanent advisory body, created in 1993 as the Council of Entrepreneurs under the Cabinet of Ministers of Ukraine, including a commission responsible for agrarian issues. This body, additional to the annual memoranda between the Government and the agricultural associations, represents the supplementary channel of information and support exchange. The involvement of the President is one-sided, since he quite actively supplies information without explicitly demanding it. The reason for the rather poor nomination of parliamentary factions as partners regarding information exchange may be the diverging perception of the actors involved. On the other hand, the Public Advisory Council of the Committee for Agrarian Issues and Land Resources was only created in 2008 within the legislative power. Thus, compared to the Public Council under the Ministry of Agrarian Policy, it was a relatively new institution at the time the survey was conducted. Furthermore, this Council encompasses a broader range of participants including academic advisors and international technical

assistance. Therefore, the exchange between interest groups and legislative power is presumably less tight and intensive.

Within the policy support network, interest groups are the most important source for the intermediation of the solutions supported by the electorate. However, provision of such kind of political support occurs also between political agents. Especially the Ministries of Agrarian Policy and Economy play an important role in the intermediation of the voters' preferences.

5.3 Power and Influence Structure in the Ukrainian Agricultural Policy Domain

There are different concepts and perceptions of power and influence. A negotiation situation may have various outcomes depending on the actions of the individuals involved. In this context, power can be precisely defined as the capacity of an individual actor to ensure that the actual outcome will match his or her preferred position. This ability is defined as continuous, which means that the greater it is the higher is the probability that the output corresponds exactly to the situation targeted by him or her (Henning, 2000). In a similar way, another approach frequently used to empirically explore influence is based on the comparison of the decision results with the interests and preferences of the actors. In order to determine the influence potential of an actor, relations between the relevant actors of a decision-making system are analysed (Krzywdzinski, 2008). Within the network analysis, the influence is formulated as potential and is constructed as a relational concept (Laumann & Knoke, 1987). Thus, according to Coleman (1990), an actor's power or influence within the system depends not only on his or her own resource endowment but also on the resource power of all the other actors and their interests (Matiaske, 2013).

Based on his theory of political exchange, Henning (2000)[27] distinguishes between different operational definitions of power and/or influence: *institutional voting power, political control demand* and *total power.* The institutional voting or original legislative power structure is determined constitutionally and measured by the Shapley-Shubik index. The legislative power of the actor can be conceptualised as the probability that his or her ideal position will represent the final outcome. Power or control plays the role of common currency. The institutional

[27] The following theoretical and formal considerations originate from Henning (2000) and Krause (2005).

power $\boldsymbol{P_g^{inst}}$ of a political agent *g* results from the sum of its political control resource endowments $\boldsymbol{C_{gj}^{aP}}$ across all dimensions *j* weighted with equilibrium prices $\boldsymbol{v_{jP}^*}$:

(5-2)

$$\boldsymbol{P_g^{inst} = \sum_j^m C_{gj}^{aP} * v_{jP}^*}$$

The political exchange model makes it possible to operationally define the power not only based on the voting indices but also in consideration of influence resources. Based on the original concept of Coleman (1990), the power of a certain actor in social exchange systems corresponds with his or her control of exchange resources. Thus, the total power $\boldsymbol{P_i^T}$ of an actor *i* represents the system power or total budget. It is the sum of all resources (political control *P*, information *I* as well as political support *S*) an actor owns or controls $\boldsymbol{C_i^{ak}}$, weighted with the respective equilibrium prices $\boldsymbol{v_k^*}$:

(5-3)

$$\boldsymbol{P_i^T = \sum_j^m C_{ij}^{aP} * v_{jP}^* + C_i^{aI} * v_I^* + C_i^{aS} * v_S^*}$$

Last but not least, the political control demand or political influence describes the capability of an actor to determine political decision-making when the influence resources are taken into account. Contrary to the institutional power, not only political agents can have political influence but also interest groups which exchange influence resources against political control. The political influence $\boldsymbol{P_i^{PI}}$ of an actor *i* results from the sum of political control demand in exchange of equilibrium $\boldsymbol{C_{ij}^*}$ weighted with equilibrium prices $\boldsymbol{v_{jP}^*}$:

(5-4)

$$\boldsymbol{P_i^{PI} = \sum_j^m C_{ij}^* * v_{jP}^*}$$

Table 8 presents the power indices of different actors. The sum of institutional voting power, of political control demand in equilibrium as well as of total power of all involved actors adds up to 1 respectively. The first important outcome is the level of political control outflow from politicians to the interest groups in exchange of influence resources. The sum of the political influence, which the interest groups gain in the exchange of the expert information and political support, is equal to 0.165. The gained political influence of the Farmers Association is at

0.030 the lowest among the interest groups, while those representing agribusiness earn 0.045 on average. Interestingly, beyond the interest groups, political actors, first of all the Ministry of Agrarian Policy and the President but also the Ministry of Economy, are able to increase their political influence compared to their original institutional power. As a result, the Ministry of Agrarian Policy represents by far the most powerful organisation in the policy domain. The power outflow of political actors amounts to approximately 0.304. At -0.107, the Prime Minister experiences the highest negative net political influence. However, the power outflows of the factions in the Verkhovna Rada reach relatively high negative values, too.

The total power is to a certain degree correlated with political control demand. However, due to different intensities of interests in influence resources, the relative political control demand is not identical with the relative total power (Henning, 2000). For example, the total power of the President is clearly higher than his political control demand. This can be explained with relatively high interest of the President in the influence resources of information and political support.

Table 8 Institutional power, political influence and total power in the Ukrainian agricultural policy domain

Actors	Institutional Power (Shapley-Shubik Index)	Political Control Demand	Net political Influence	Total Power
Party of Regions	0.184	0.121	-0.063	0.117
Bloc Yulia Tymoshenko	0.164	0.106	-0.058	0.096
Our Ukraine	0.076	0.022	-0.054	0.043
Communist Party of Ukraine	0.028	0.018	-0.01	0.017
Bloc Lytvyn	0.021	0.009	-0.012	0.014
President	0.096	0.160	0.064	0.219
Prime Minster	0.168	0.061	-0.107	0.119
Ministry of Agrarian Policy	0.168	0.241	0.073	0.166
Ministry of Economy	0.095	0.096	0.001	0.073
Farmers Associations	0	0.03	0.03	0.045
Agribusiness Associations	0	0.135	0.135	0.090
Sum	1	1	1	1

Source: Own calculation.

The composition of the total power presented in Table 9 depicts how various actors generate their power from different resources. The components of total power include political influence, information power and political support power. The row of relative prices shows that political control or institutional decision-making authority is the most valuable resource in the system. However, influence resources like information and political support are also relevant in the agricultural policy domain. The added-up value of relative prices for information and political support even exceeds the value of political control.

Table 9 Power generation of individual actors from different resource categories

Actors	Political Influence	Information Power	Political Support Power	Total Power (Sum)
Relative Prices	0.483	0.301	0.216	1
Party of Regions	0.761	0.110	0.128	1
Bloc Yulia Tymoshenko	0.826	0.134	0.040	1
Our Ukraine	0.855	0	0.145	1
Communist Party of Ukraine	0.777	0	0.223	1
Bloc Lytvyn	0.703	0	0.297	1
President	0.212	0.673	0.115	1
Prime Minster	0.683	0.085	0.232	1
Ministry of Agrarian Policy	0.490	0.365	0.145	1
Ministry of Economy	0.625	0.047	0.327	1
Farmers Associations	0	0.233	0.767	1
Agribusiness Associations (n=3)	0	1.516 (Ø 0.505)	1.484 (Ø 0.495)	

Source: Own calculation.

From the point of view of individual actors, the relevance of different resources as basis of power generation varies considerably. As expected, interest groups gain their total power through information power and political support resources. Especially the Farmers Association seems to be influential when it comes to mediation of voters will and generates over 70% of its (generally modest) power through this type of influence resource. The main source of power gain of interest groups in agribusiness is their expert knowledge, the weight of which is slightly higher than the average power in the political support. As in previous studies (Henning, 2000; Krause, 2005), differences regarding the individual resources for power genera-

tion, however, go well beyond the expected variance due to the classical resource endowment of the political agents and interest groups. For example, the President generates at 0.673 the biggest share of his total power through expert and monitoring information. The Ministry of Agrarian Policy profits from its central position in the agricultural policy domain network as well and gains a considerable part of the total power through information exchange or brokerage. All political agents also act as providers of political support albeit with varying degrees. Particularly the Ministry of Economy produces almost one third of its total power from the political support resource. The main power source of political agents, however, remains the political control, which, with exception of the President and the Ministry of Agrarian Policy, constitutes by far more than half of their total power. As already implied by the relationship density, especially the factions in the Verkhovna Rada own hardly any information and political support power.

5.4 Ideological Dimensions

As described in Chapter 3.3, the Ukrainian political actors in the study period lacked clear, coherent and stable ideological profiles. Particularly in the agricultural policy domain, most of the political players failed to communicate distinctive programmatic commitments. In political sciences, ideology is generally presumed to be incapable of direct empirical observation. This latent variable, however, can be conceptualised and constructed through its relation to manifested positions of actors on different relevant items. The aim of this chapter is to identify the ideological spectrum of the main players in the Ukrainian agricultural policy domain, explore the main differences and possible conflict lines. To this end, the exploratory factor analysis (Principal Component Analysis, PCA)[28] is applied. The PCA converts a set of indicators into linearly uncorrelated latent variables or factors with the aim of capturing as much common variance between the indicators as possible. As a method for the estimation of ideological dimensions and the positioning of the respondents, the factor analysis or Principal Component Analysis has been widely used in the relevant literature (Ansolabehere et al., 2008; Ansolabehere et al., 2001; Carsey & Layman, 2006; Heckman & Snyder, 1997; Henning, 1998; Hinich & Munger, 1996; Pan & Xu, 2016; Pappi & Shikano, 2004).

The data used for the analysis has been collected through expert interviews representing the relevant corporate actors of the agricultural policy domain in Ukraine. The interviewed re-

[28] In contrast to the FA, the PCA is not based on assumed underlying factors, but takes into account all variance of data and creates an "empirical summary of the data set" (Tabachnick & Fidell, 2007).

spondents (n=13) included five factions of the Verkhovna Rada, the Presidential Administration (P), the Prime Minister (PM), the Ministry of Agrarian Policy (MoA), the Ministry of Economy (MoE) as well as four agricultural associations. The survey questions included the preferred policy position concerning the share of state budget expenditure on agricultural issues, the welfare of the agricultural producers (PSE), the development of the land market (land market liberalisation), the welfare of consumers (Consumer Support Estimate, CSE), the reinforcement of international trade, the welfare of the agro-processing sector, the level of environmental protection, the level of animal protection, the level of the quality and the safety of foodstuffs as well as the rural development. The positions to most of these agricultural policy issues were collected based on a Likert scale from 1 to 7, whereas concrete real values were assigned to the two "poles". The aspired share of agricultural expenditures as well as PSE and CSE levels were indicated directly, though. The preferred positions concerning the land markets were specified by the desired speed of the abolishment of the moratorium of land sales which ranked from 1, corresponding to the "prolongation of the moratorium on agricultural land sales until the establishment of the fully functioning institutional arrangements", to 7, corresponding to the "immediate removal of the moratorium". Similarly, the respondents could choose the desired extent of agricultural trade liberalisation regarding imports and exports on the 7-point scale. The attitudes towards environmental issues, rural development, food safety and animal protection were indicated on the basis of an acceptance of cost increase related to the higher standards is these aspects. Furthermore, the respondents could specify their preferred level of the average profit margin in the agro-processing industries.

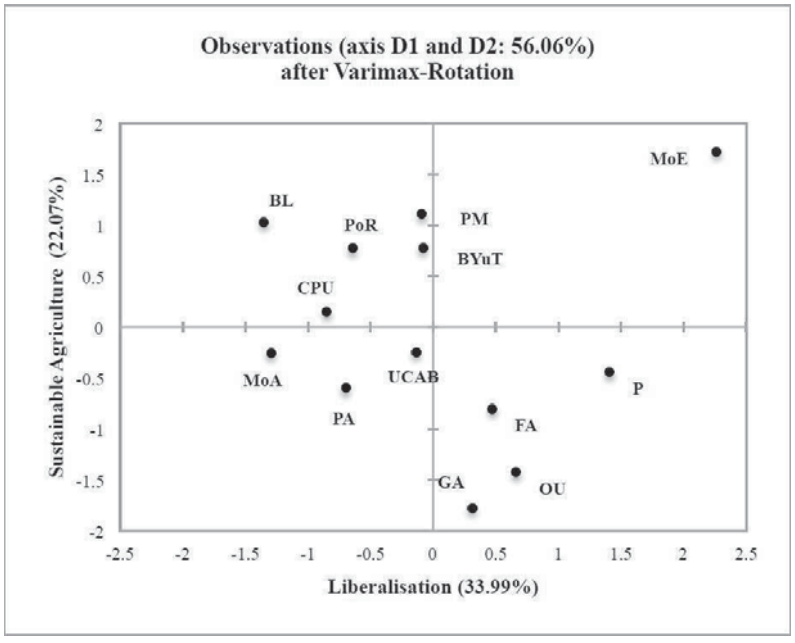
Strictly speaking, the multiple variables in a PCA should be interval-scaled. However, ordinal variables are also frequently used in the PCA since the social science variables are usually regarded as continuous, normally distributed latent variables measured by indicators with low measurement errors (Schnell et al., 1999).

When running a PCA with all eleven variables, the overall Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (MSA) is equal to 0.428 (Bartlett significance level 0.022). Looking at the anti-Image correlation revealed a very low KMO measure for the variable "agribusiness" (0.152). As recommended in the relevant literature (Backhaus et al., 2016), this variable has been excluded. The PCA with the remaining ten variables extracted three components (KMO 0.552; Bartlett significance level 0.017, see Table A1 in the appendix). The

"elbow" criterion of the scree plot (see Figure A1 in the appendix) shows a kink at factor three, suggesting that there are two substantial components. However, according to the Kaiser criterion, referring to the number of factors with eigenvalues higher than 1, three factors are to be retained. The communalities are better represented by the three-dimensional solution (see Tables A2 and A3 in the appendix). The three-dimensional solution explains over 76% of the common variance. The proportion of variance explained by two components still amounts to a satisfactory 64.5% (rotated to 56.1%). From the viewpoint of interpretability of the extracted factors, both the two- and three-dimensional explanations seem plausible. However, the two-component solution has the advantage of being tighter than a three-component solution, which, on the other hand, has a better goodness-of-fit statistic. Therefore, both alternatives will be described in the following.

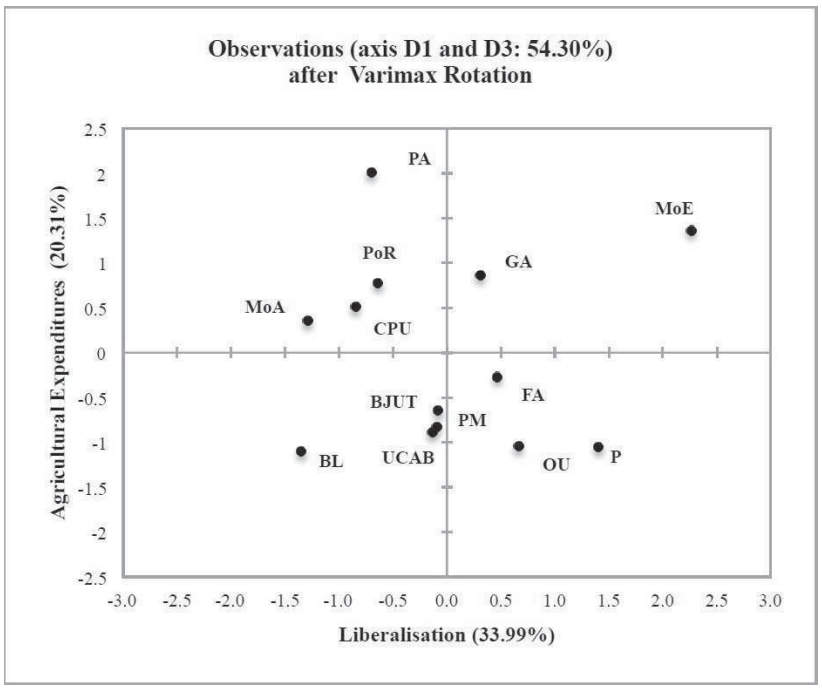
The interpretation of the results is based on the rotated factor loadings, where items that load relatively high on a factor are allocated more weight. The varimax rotated component matrix analysis can be found in Tables A4 and A5 in the appendix.

Figure 12 Positions of the actors in Ukrainian agricultural policy space within the three dimensional solution, dimensions 1 and 2



PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association
Source: Own calculation.

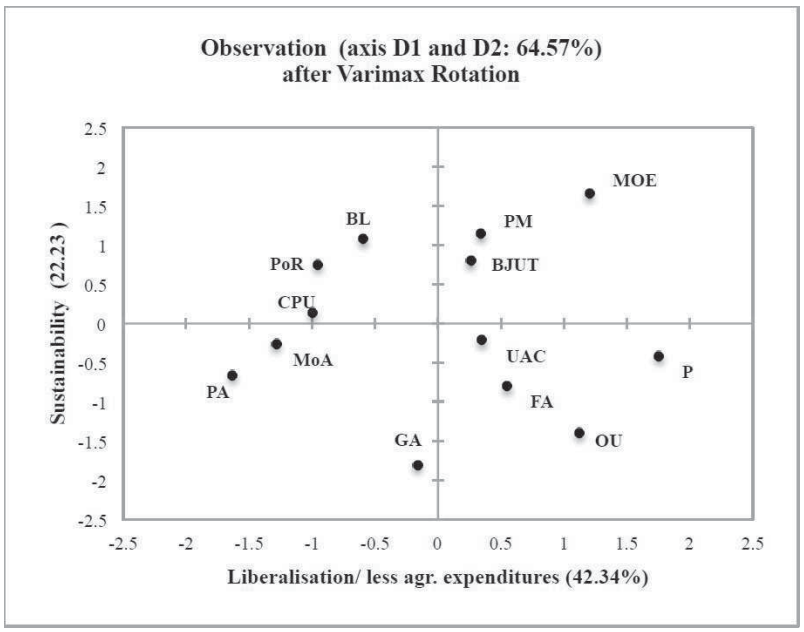
Figure 13 Positions of the actors in Ukrainian agricultural policy space within the three dimensional solution, dimensions 1 and 3



PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association
Source: Own calculation.

The first component is labelled "liberalisation" or "reduction of protection level". The variables that load high on this factor deal with export, import and land-market-liberalisation issues but also with the CSE measure. The factor demonstrates a relatively high, though negative correlation with the welfare of the urban consumers. Surprisingly, the loading of the variable measuring the protection level of animals is also quite high. This variable would rather be expected to be located along with the variables of the second component, labelled "sustainable agriculture". This dimension is characterised by attitudes corresponding to a low level of environmental protection, food safety and rural development on one pole and a position favouring high standards of the listed issues on the other pole. The third component is associated with the level of agricultural subsidies, expressed by the preferred level of PSE and the favoured percentage of budgetary outlays on agricultural policy. Therefore, this dimension is categorised as "agricultural expenditure" and corresponds to preferred positions that are oriented towards the high level of agricultural subsidies on the one hand and the low one on the other hand.

Figure 14 Positions of the actors in Ukrainian Agricultural policy space within the two-dimensional solution



PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association
Source: Own calculation.

Within the two-component solution, the variables concerning the PSE level and the budget expenditures have relatively high negatively correlated loadings on the first component (respectively -0.715 and -0.641). It is hardly surprising that a liberal agricultural policy regime aiming to reinforce the foreign trade and land market development is linked with less price interventions and lower subsidies. In this solution, the first component thus incorporates "liberalisation" and "(less) agricultural expenditure", which were discussed as independent components within the three-dimensional model as demonstrated in Figure 13.

The pattern of actor grouping in Figure 12 demonstrates similarities to the two-dimensional model. For better interpretability, the two-dimensional policy space will be discussed in more detail in the following. In particular, the relation of the components to the political preferences of the main agricultural actors within the policy space will be clarified. In order to highlight the constellation of actor preferences with regard to the liberalisation of trade and land markets on the one hand and the level of financial protection measures on the other hand, Figure 13 of the three-dimensional solution will be further elaborated.

The actors positioned in the top-right quadrant represent the proponents of the liberally oriented agricultural policy. They, at the same time, support high standards of food safety, rural development and environmental protection. In this context, the Ministry of Economy stands out, whereas the other two actors, the Prime Minister and Bloc Yulia Tymoshenko, favour sustainability, but their orientation concerning the protection level is rather moderately liberal. The distance from the Ministry of Economy is more salient in Figure 12 than in Figure 14. The political preferences of the Prime Minister and BYuT are closer to the positions of the other two parliamentary factions located in the top-left quadrant, the Party of Regions and Bloc Lytvyn. Furthermore, in the top-left quadrant, the Communist Party can be found with clearly pronounced protectionist preferences. Surprisingly, the position of the Ministry of Agrarian Policy is more left than the one of the Communist Party, revealing an even stronger protectionist attitude than the latter. In sustainability matters, the Communist party pursues a rather moderate approach, similarly to the positions of the President as well as the Ukrainian Agribusiness Club. For the three other agrarian associations, the Farmers Association, the Poultry and especially the Grain Associations, sustainability issues appear to be of lower priority. The same applies to the Bloc Our Ukraine. With regard to the "liberalisation" dimension, the preferences of the interest groups vary. While the Ukrainian Agribusiness Club and the Farmers Association are rather market orientated, the Grain and especially the Poultry Associations demonstrate somewhat protectionist standpoints. The President and "his" Bloc Our Ukraine show obvious preferences towards liberal markets and strive to decrease the protection level.

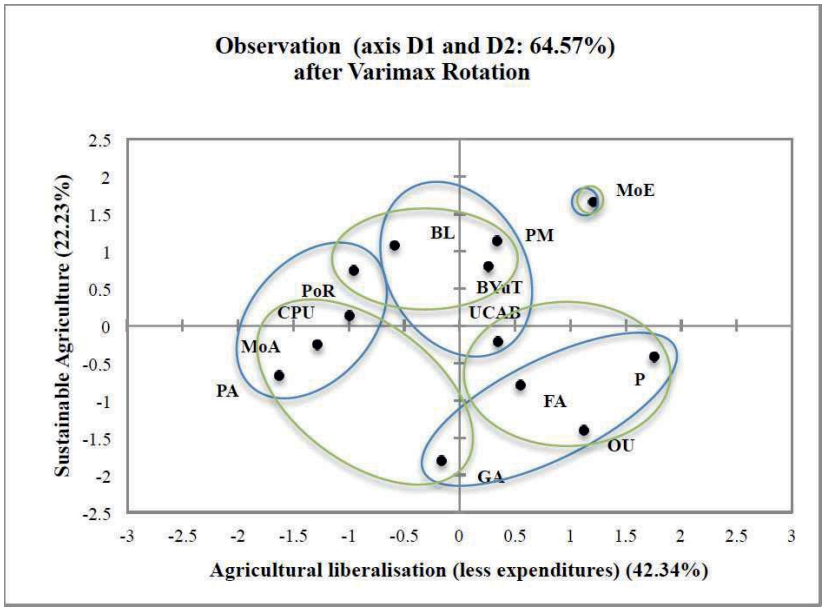
The existing patterns of political preferences regarding the interrelation of liberalisation on the one hand and the level of agricultural expenditures on the other hand can be regarded in Figure 13. Interestingly, the inclination for less state intervention in foreign trade and land markets of the Ministry of Economy is not combined with the preference to cut budgetary payments for agriculture. Not surprisingly, the agricultural Grain and especially Poultry Associations support higher outlays for the agricultural sector. So do the factions of the Communist Party, the Party of Regions and the Ministry of Agrarian Policy, albeit to a lesser extent. The governing factions Bloc Yulia Tymoshenko, Bloc Lytvyn, Our Ukraine as well as the President and Prime Minister prefer a relatively cost-conscious use of the budgetary funds. Two other agricultural associations, the Ukrainian Agribusiness Club and the Farmers Association, can be also found within this group located below the x-axis.

In order to capture the distance and possible conflict lines between the described actors, the Q-methodology of the PCA has been applied. With this method, the result of which is similar to the cluster analysis, the principle component analysis is calculated through actors instead of variables. While cluster analysis primarily applies distances for the determination of similarities, q-methodology uses correlations (Backhaus et al., 2016). Additionally, the hierarchical cluster analysis has been run applying three extracted components. For better interpretability, however, the results were diagrammed into a two-dimensional graph. Despite the differences between the groups produced by these two methods, the Q-method of the PCA and the cluster analysis, the agricultural policy domain actors can be positioned into four main ideological units. According to the cluster analysis, the liberal group with comparatively less pronounced preferences for sustainability standards around the President includes "his" Bloc Our Ukraine as well as the Farmers and Grain Associations.

The Ministry of Economy as outlier with relatively far-reaching liberal and sustainability preferences represents a distinct cluster on its own. The cluster including the Prime Minister as well as "her" Bloc Yulia Tymoshenko, Bloc Lytvyn as well as the Ukrainian Agribusiness Club embodies rather moderate attitudes concerning the protection level and relatively high sustainability standards. The fourth cluster, comprising of the Ministry of Agrarian Policy, the Party of Regions and the Communist Party, stands for conservative beliefs favouring high protection levels and moderate standards for sustainable agricultural development.

The result of the Q-method calculation shows slightly different results. While the position of some actors is rather unambiguous vis-à-vis the results of cluster analysis, the Grain Association, for instance, is assigned to the conservative group. The Party of Regions and the Ukrainian Agribusiness Club also belong to different groups, i.e. to moderates and liberals respectively. However, the loadings of these two actors are also high (above 0.5) on the components corresponding to the groups to which they belong according to the cluster analysis.

Figure 15 The ideological clusters in Ukrainian agricultural policy space



The blue cycles show the groups generated by the cluster analyses. The green cycles show the groups generated by the Q-Methodology of the PCA.

PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association
Source: Own calculation.

The results can be summarised as follows: In the Ukrainian agricultural ideological policy space, four groups can be classified. The Ministry of Agrarian Policy, the Poultry Association and the Communist Party form the core of the first group, which distinguishes itself by a relatively protectionist and a moderately sustainable orientation. The second cluster with moderately liberal views but relatively high sustainability inclinations consists in essence of the Prime Minister, Bloc Yulia Tymoshenko and Bloc Lytvyn. The third group, characterised by a liberal orientation combined with low preferences for interventions in favour of sustainability, includes the President, Bloc "Our Ukraine" as well as the Farmers Association. The Ministry of Economy with its non-protectionist position and the highest sustainability preference forms a separate cluster. Depending on the applied model, either the Q-methodology or the cluster analysis, the affiliation of the Grain Association, the Party of Regions and the Ukrainian Agribusiness Club varies. The Grain Association is part of the conservative cluster according to the Q-methodology, while allocated to the liberal group by the cluster analysis. The Party of Regions belongs either to the conservative cluster or to the moderates, depending on the applied method. The Ukrainian Agribusiness Club is located at the interface of moderate

and liberally oriented clusters with higher and lower sustainability standards respectively. In almost all clusters, there are actors representing not only legislative or executive power but also interest groups. Hence, these non-governmental actors do not represent a group with homogenous ideological preferences.

5.5 Simplified Example of the Model Application

Prior to the calculation of mean-voter results of the reference scenario, a fictive application example shall illustrate the operation mechanism of the rather abstract political exchange model.

It is assumed that there are three actors represented by parliamentary factions (n=3), the Liberal Party, the Social Democratic Party and the Peasant Party. The institutionally determined power of each faction corresponds to the distribution of seats in Parliament. The power of the actors in each issue is summed up to 1.

C_{ij}	i=1	i=2	i=3
j=1	0.5	0.3	0.2
j=2	0.5	0.3	0.2

The actors negotiate about the amount of agricultural subsidies in three sectors: grain, milk and meat. The preferred policy positions are as follows:

Y_{ij}	j=1 grain	j=2 milk	j=3 meat
i=1	1	1	1
i=2	2	6	5
i=3	10	12	12

The intensities of interest with which the players are disposed to enforce their preferred positions in each issue are distributed as follows. The total interest of each actor is normalised to 1.

X_{ij}	j=1	j=2	j=3
i=1	0.2	0.5	0.3
i=2	0.1	0.6	0.3
i=3	0.3	0.4	0.4

Since the distribution of control is assumed to be constant over all issues, the budget-vector corresponds to any row of the control distribution matrix:

$$\mathbf{p} = (\mathbf{0.5\ 0.3\ 0.2})\ \mathbf{X} = \begin{pmatrix} \mathbf{0.2\ 0.5\ 0.3} \\ \mathbf{0,.1\ 0.6\ 0.3} \\ \mathbf{0.3\ 0.4\ 0.3} \end{pmatrix}$$

From formula $\mathbf{v} = \mathbf{pX}$ follows that the prices for the issues amount to:

$$\mathbf{v} = (\mathbf{0.17\ 0.53\ 0.3})$$

Thus, milk is the most "pricy" political issue, i.e. the actors are interested at the most to enforce their policy position in this issue. Based on the rule of proportional allocation of the resources, the equilibrium demand of control equals to:

$$\mathbf{C}^* = \begin{pmatrix} \mathbf{0.588\ 0.472\ 0.5} \\ \mathbf{0.235\ 0.452\ 0.4} \\ \mathbf{0.176\ 0.075\ 0.1} \end{pmatrix}$$, whereas $C^*=p_{idiag^*} X_{ij^*} v_{jdiag}^{-1}$

According to the mean-voter rule, the final political decision on every issue represents the weighted mean of the preferred positions of all actors involved. The weights are *C**, the control demand as a consequence of political exchange. Thus, the subsidy level of grain, milk and meat would respectively equal 6.5, 7.6 and 1.7.

5.6 Calculation of Mean-Voter Results

5.6.1 Reference Scenario

Mean-voter results concerning the main dimensions of Ukrainian agricultural policies have been estimated by applying the procedure described above. According to the logic of the po-

litical exchange model, equilibrium results relate to equilibrium prices of political control resources for the different policy issues. Furthermore, the actors' equilibrium control demand and the corresponding equilibrium positions on the different policy issues have been calculated (Henning, 1998).

Table 10 Mean-voter results in the reference scenario

	Budg	PSE	CSE	LM	Im	Ex	AB	Env	Anim	FS	RD
Mean-Voter	3.4	3.9	4.6	4.7	3.8	4.3	5.0	3.8	2.9	5.8	5.0
Concrete real Values	8.6%	13.1%	9.2%				9.9%	6.0%	1.9%	4.8%	2.1%
Equilibrium Prices	0.10	0.13	0.08	0.05	0.08	0.08	0.10	0.04	0.04	0.13	0.15

The first row demonstrates the mean-voter results on the scale between 1 and 7, the second row shows the concrete values corresponding to the mean-voter results.

Budg - share of state budget spent on agriculture, **PSE** - welfare of agricultural producers, **CSE** - welfare of consumers, **LM** - land market development, promotion of international trade, i.e. of **Im** - imports and of **Ex** - exports, **AB** - welfare of agro-processing sector, **Env** - environmental and **Anim** - animal protection, **FS** - food safety, **RD** - rural development.
Source: Own calculation.

The covered policy dimensions include: the share of state budget expenditure on agricultural concerns (Budg), the welfare of the agricultural producers (PSE), the welfare of consumers (CSE), the strengthening of international trade relations by promotion of imports (Im) and exports (Ex), the development of the land market (LM), the welfare of the agro-processing sector (AB), the degree of environmental (Env) and animal protection (Anim), the level of the quality and safety of foodstuffs (FS) as well as the rural development (RD). The positions in most of these agricultural policy concerns were collected on the basis of a Likert scale ranging from 1 to 7, while concrete values were assigned to the two "poles". Preferred values concerning budget share, PSE and CSE were indicated directly. AB shows the preferred profit margin of agribusiness. Env, Anim, FS express which percentage of cost increase for agricultural producers could be accepted due to the introduction of higher standards. RD demonstrates which level of tax increase to the urban population can be accepted in order to support the rural population and mitigate rural/urban income discrepancy. The preferred positions of the actors concerning these policy issues as well as their intensity of interests were collected through interviews. The institutional power endowment was calculated with the Shapley-Shubik index (see Chapter 5.1).

The equilibrium prices express the relative interest of the actors to enforce their ideal positions in the respective issues. Hence, they mirror the importance or "value" of the issues in the equilibrium. It is interesting to take a look at the prioritisation of the dimensions in the Ukrainian agricultural policy domain (see the last row in Table 10). Rural development as well as food safety and PSE seem to be the most significant issues, followed by budgetary issues and the profit margin of agribusiness. Moderate importance is attached to consumer welfare as well as to trade issues. Surprisingly, the land market turns out to be of low priority, as are environmental and animal protection matters.

The calculated mean-voter results on concrete values of the budget share, PSE and especially CSE are considerably higher than the according real values (see Table 11). However, the comparability is limited due to the following reasons. The examined issues refer to the final policy outcomes and not to concrete policy means. When deciding on budget outlays, the political actors have to set priorities between a number of policy fields. Even though the desired share of agricultural expenditures, independent from issues other than agriculture, might be relatively high, financial constraints, reinforced by the financial crisis of that time period, do not allow their fulfilment. PSE and CSE percentages are constructed measures calculated by the OECD including a set of policy instruments (see Chapter 2.3.1). In this survey, they merely serve as a guide for the welfare preferences of agricultural producers and consumers.

Table 11 State budget shares spent on agricultural issues, PSE and CSE

	2008	2009	2010
Budget share	4.80%	2.33%	1.88%
PSE	2.24%	7.33%	6.49%
CSE	-7.02%	-13.96%	-2.2%

Sources: Data on budget share: Ukrainian Agrarian Confederation (2013); Data on PSE and CSE: OECD, different years.

The positions concerning land markets, import and export are collected only on the basis of the scale. Given the controversial question of abolishment of the moratorium on land sales, the relatively high value in favour of the immediate abolishment of moratorium is quite surprising. Above-average values for the international trade could be expected considering the relatively free-trade oriented regime of Ukraine and progressing liberalisation in the course of the WTO-accession. Obviously, the surveyed actors have high preference concerning the

profit margin of agribusiness. The willingness to accept higher costs in favour of increased food safety is apparent, as the policy issue has the highest equilibrium rate of all policies. Rural development is the most "expensive" policy issue mirroring the high interest of the political agents to pursue their preferred policy position. Environmental protection however, enjoys comparably low priority. The rating of animal protection is the lowest among all policy issues. The relatively high equilibrium levels of the last four policies, except for animal protection, echo the increasing importance of the green box or general services measures in Ukrainian agricultural expenditures. Some examples corresponding to the policy positions described above are shown in Table 12.

Table 12 Expenditures on selected measures of GSSE, in UAH million

	2008	2009	2010
Agricultural product safety	302.0	292.5	602.0
Development and maintenance of agricultural infrastructure	835.0	903.0	1010.8
Environmental programmes	82.0	57.0	175.00

Source: OECD, different years.

5.6.2 Scenario without Lobbying

The examined scenarios of the present work address the question: "What would have happened if …?" While the reference scenario is calculated on the basis of the political control demand achieved as the result of resource exchange in the policy networks, the scenario without lobbying applies the institutionally determined power of the actors. Hence, the power of interest groups is equal to zero. The scenario abstracts from the exchange of influence resources between all involved actors. Table 13 demonstrates the mean-voter results in a scenario without lobbying or resource exchange.

As the mapping of the actors into ideological dimensions suggests, the interest groups do not represent a homogenous group with a more or less uniform ideological orientation. There are no clearly pronounced differences between the preferred positions of political actors on the one hand and agricultural associations on the other hand. Nevertheless, the findings suggest that there are differences between the equilibrium levels. The scenario without lobbying or resource exchange implies less agricultural expenditures in terms of budget outlays or PSE. The level of agricultural protection remains nearly unchanged in sum, while the liberalisation of land markets is somewhat less preferred as is the state intervention in agricultural import

relations (with an unvarying outcome for the export liberalisation). At the same time, the scenario without lobbying entails relatively high scores in favour of issues like environmental concerns, rural development, food safety and animal protection.

Table 13 Mean-voter results in the scenario without lobbying/exchange of resources

	Budg	PSE	CSE	LM	Im	Ex	AB	Env	Anim	FS	RD
Mean-Voter	3.1	3.6	4.5	4.6	4	4.3	5.0	4.3	3.0	5.9	5.5
Concrete Values	8.0%	12.6%	8.8%				9.7%	7.2%	2.0%	4.9%	2.3%
Equilibrium Prices	0.10	0.14	0.08	0.05	0.08	0.08	0.08	0.05	0.03	0.14	0.17

The first row demonstrates the mean-voter results on the scale between 1 and 7, the second row shows the concrete values corresponding to the mean-voter results.

Budg - share of state budget spent on agriculture, **PSE** - welfare of agricultural producers, **CSE** - welfare of consumers, **LM** - land market development, promotion of international trade, i.e. of **Im** - imports and of **Ex** - exports, **AB** - welfare of agro-processing sector, **Env** - environmental and **Anim** - animal protection, **FS** - food safety, **RD** - rural development.
Source: Own calculation.

5.6.3 Scenarios Regarding Institutional Changes

The following scenarios analyse the possible effects on agricultural policy outcomes when the institutional framework is changed. The considered scenarios include the party government and the bicameral legislature models. The party government model describes a form of formal decision-making practice which is especially inherent in consolidated parliamentary democracies. In the study of Pappi et al. (1995), the party government model proved to be the most appropriate one with the highest explanatory power in the context of German labour and social policy-making vis-à-vis legislative and policy leadership types. The share of correctly predicted decisions in Germany within the policy exchange networks and taking into account the influence of interest group amounted to 97% by applying institutional relationships determined by the party government (Krzywdzinski, 2008). This model focuses on Government parties or the majority coalition, which shares the profit of the game, while opposition parties are virtually left empty-handed (Pappi et al., 1995). The party government model assumes the presence of a very strong discipline of parliamentary factions, a solid cooperation within the governmental coalition and a weak opposition. These conditions are not fulfilled in the Ukrainian political reality of the studied period. Quite the opposite: the formed "Orange coalition" of BYuT, Our Ukraine and Bloc Lytvyn effectively existed only on paper (Lange & Reismann, 2009). Nevertheless, it would be interesting to examine the theoretical implications

of an institutional system under party government conditions. Since the semi-presidential constitutional design did not prove to be very suitable to consolidate the democratisation processes in Ukraine, some experts regarded the parliamentary system as the potential alternative (Umland, 2009). The initially secret though finally ineffective negotiations between Yulia Tymoshenko and Viktor Yanukovych about the constitutional transition towards a parliamentary system fuelled the debate about institutional changes. Apparently, the introduction of the parliamentary order would not immediately lead to established democratic conditions with a stable coalition and a strong faction discipline. Nevertheless, it would be interesting to analyse the theoretical case of the party government system characterised by a strong ruling coalition.

The second scenario refers to the suggestion of President Yushchenko to introduce the bicameral Parliament including a "House of Representatives" with 300 seats and a "senate" with three deputies from each of the 27 regions of the country. Even though this initiative also remained fruitless, it would be interesting to find out what implications the parliamentary system with two chambers would have brought. The model calculation within this scenario assumes that the composition of each of the chambers proportionally reflects the real structure of the Verkhovna Rada in the examined legislative period.

Table 14 demonstrates the institutional distribution of power according to the Shapley-Shubik index as well as shifts in the political control demand under the discussed scenarios: the reference scenario which applies the policy leadership model for distribution of institutional power aw well as the party government and the bicameral legislative models. The comparison of the Shapley-Shubik indices reveals that the power distribution between agents under the reference scenario and the scenario with two chambers only marginally differs. The party government model is clearly distinguished from the others, as the opposition parties have no influence according to the model's assumption. The voting power of the President and the Government is significantly lower. The allocation of the political control demand is accordingly different in the party government scenario compared to the other two. The political control demand of the interest groups is at 0.21 the highest compared to about 0.17 in the reference scenario and the scenario with two parliamentary chambers. Due to their influence resources, the President and the Ministry of Agrarian Policy still gain considerable political control in the framework of the party government scenario compared to their initial endowment. These power weights,

however, are lower than in the other two scenarios owing to initially lower endowment with institutional voting power.

Table 14 Shifts of institutional power and political control demand in different scenarios

Actors	Reference Scenario		Party Government		Bicameral Legislature	
	Institutional Power (Shapley-Shubik Index)	Political Control Demand	Institutional Power (Shapley-Shubik Index)	Political Control Demand	Institutional Power (Shapley-Shubik Index)	Political Control Demand
PoR	0.184	0.121	0	0.036	0.191	0.124
BYuT	0.164	0.106	0.328	0.197	0.170	0.109
OU	0.076	0.022	0.328	0.086	0.079	0.023
CPU	0.028	0.018	0	0.005	0.029	0.019
BL	0.021	0.009	0.328	0.097	0.022	0.009
P	0.096	0.160	0.004	0.147	0.099	0.132
PM	0.168	0.061	0.0048	0.026	0.163	0.060
MoA	0.168	0.241	0.0048	0.150	0.163	0.239
MoE	0.095	0.095	0.0024	0.049	0.082	0.088
FA	0	0.030	0	0.039	0	0.030
UCAB	0	0.054	0	0.063	0	0.055
GA	0	0.026	0	0.032	0	0.027
PA	0	0.055	0	0.073	0	0.055

PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association.
Source: Own calculation.

5.6.4 The Party Government Scenario

The mean-voter outcomes in the scenario examining the implications of the institutional changes are presented in Table 15. Vis-à-vis the reference scenario, the party government scenario attains comparable results in liberalisation (land markets and trade) as well as consumer support matters. The equilibrium scores for producer support, food safety and rural development are lower, the preferred profit for agribusiness, environmental and animal protection, on the other hand, is higher.

Table 15 Mean-voter results in the party government scenario

	Budg	PSE	CSE	LM	Im	Ex	AB	Env	Anim	FS	RD
Mean-Voter	3.2	3.2	4.6	4.7	3.8	4.4	5.2	4.2	3.2	5.6	4.4
Concrete Values	7.9%	12.0%	9.0%				10.4%	6.9%	2.2%	4.6%	1.8%
Equilibrium Prices	0.10	0.13	0.08	0.06	0.09	0.09	0.09	0.05	0.04	0.14	0.13

The first row demonstrates the mean-voter results on the scale between 1 and 7, the second row shows the concrete values corresponding to the mean-voter results.

Budg - share of state budget spent on agriculture, **PSE** - welfare of agricultural producers, **CSE** - welfare of consumers, **LM** - land market development, promotion of international trade, i.e. of **Im** - imports and of **Ex** - exports, **AB** - welfare of agro-processing sector, **Env** - environmental and **Anim** - animal protection, **FS** - Food safety, **RD** - rural development.
Source: Own calculation.

5.6.5 The Scenario with Bicameral Legislature

Given very similar distribution of power in the exchange equilibrium, it comes as no surprise that the results of the bicameral model are closely related to the reference scenario in all policy issues.

Table 16 Mean-voter results in the bicameral legislature scenario

	Budg	PSE	CSE	LM	Im	Ex	AB	Env	Anim	FS	RD
Mean-Voter	3.5	3.9	4.7	4.6	3.7	4.2	5.0	3.7	2.8	5.8	5.0
Concrete Values	8.8%	13.2%	9.3%				10.0%	5.9%	1.8%	4.8%	2.1%
Equilibrium Prices	0.10	0.13	0.08	0.05	0.08	0.08	0.09	0.04	0.04	0.13	0.15

The first row demonstrates the mean-voter results on the scale between 1 and 7, the second row shows the concrete values corresponding to the mean-voter results.

Budg - share of state budget spent on agriculture, **PSE** - welfare of agricultural producers, **CSE** - welfare of consumers, **LM** - land market development, promotion of international trade, i.e. of **Im** - imports and of **Ex** - exports, **AB** - welfare of agro-processing sector, **Env** - environmental and **Anim** - animal protection, **FS** - Food safety, **RD** - rural development.
Source: Own calculation.

Only marginal differences can be observed in terms of agricultural liberalisation (land markets and trade), since the outcomes within the two-chamber Parliament scenario are slightly

more protective. The same holds true for budgetary expenditures and consumer protection. The preferences for environmental protection and animal protections are marginally lower.

5.6.6 Comparison of the Scenarios

Besides the reference scenario, which estimated the mean-voter outcomes, altogether three different scenarios have been generated and assessed. While the first one, the scenario without lobbying or exchange resources, analyses the structural changes, the party government and two chambers scenarios refer to the implications of institutional modifications.

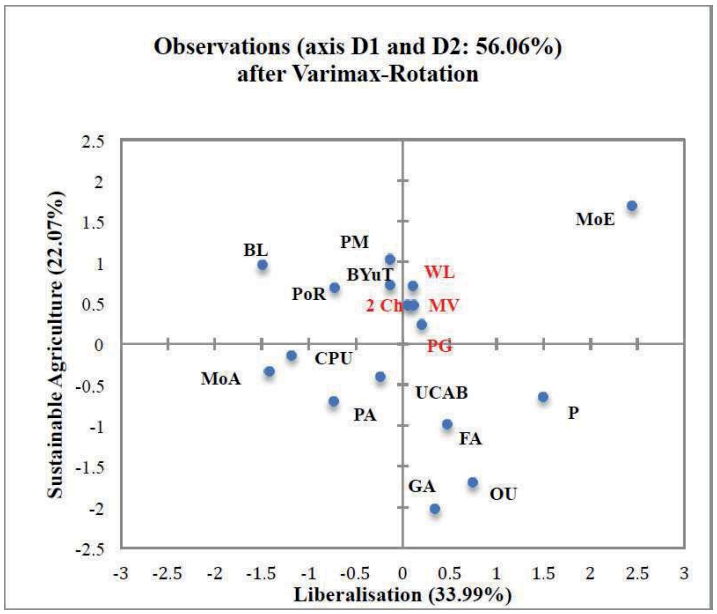
The prioritisation of the issues in terms of relative equilibrium prices remains more or less the same in all scenarios. Given that the prices are significantly influenced by the relative interest intensities, this does not come unexpected.

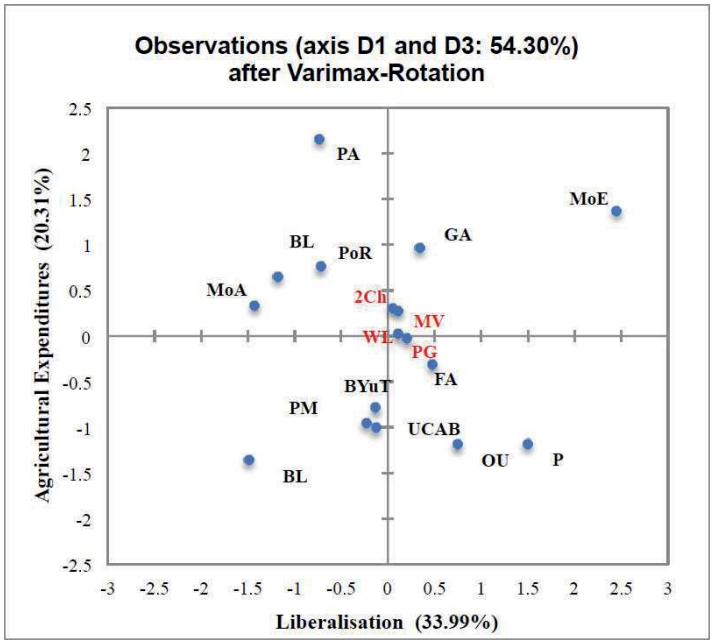
The equilibrium mean-voter policy outcomes under all scenarios are diagrammed into the three-dimensional ideological space. As expected, the results of the mean-voter, i.e. the reference scenario and the two-chamber Parliament are almost alike. In terms of the first factor, the agricultural liberalisation (with the highest loadings of trade and land market liberalisation as well as animal protection), the outcomes of all scenarios are quite similar and are positioned in the centre. The second factor, the sustainable agriculture (with the highest loading in rural development and food safety), appears less preferable in the framework of the party government scenario and enjoys a relatively high value in the situation without lobbying/political exchange of resources. Concerning the third factor (with the highest loadings of Budget outlays, PSE), the mean-voter scenario and the institutional setting with two chambers demonstrate preferences towards higher agricultural expenditures. The outcome of the scenario without lobbying is less prone to maintain high outlays on agricultural issues. This tendency is even stronger pronounced within the party government scenario.

Thus, the results can be summarised as follows: with regard to the first component, i.e. the liberalisation, all calculated scenarios show nearly the same results. The scenario without lobbying/political exchange mostly values sustainable agriculture, while the party government scenario has the lowest score compared to all other scenarios. Higher agricultural expenditures are predominantly preferred within the reference scenario and the scenario with two

chambers, followed by the scenario without lobbying/political exchange. The setting of the party government would imply the lowest expenses for agricultural purposes.

Figure 16 Mean-voter results in different scenarios and positions of agricultural policy actors diagrammed into the three-dimensional space





PoR – Party of Regions, **BYuT** – Bloc Yulia Tymoshenko, **OU** – Bloc Our Ukraine, **CPU** – Communist Party of Ukraine, **BL** – Bloc Lytvyn, **P** – President, **PM** – Prime Minister, **MoA** – Ministry of Agrarian Policy, **MoE** – Ministry of Economy, **FA** – Farmers Association, **UCAB** – Ukrainian Agribusiness Club, **PA** – Poultry Association, **GA** – Grain Association. **MV** – Reference Scenario, **WL** – Scenario without lobbying/exchange of resources, **PG** – party government scenario, **2CH** – scenario with bicameral legislature.
Source: Own calculation.

5.7 Critical Assessment and Conclusions

There are some critical aspects which limit the explanatory power of the calculated results. Some of these aspects refer to the model assumptions, while the others result from the constraints regarding the access to data. The critical assumptions concern primarily the Coleman model, which were partly renounced by Henning (2000) in his political exchange model. Due to the complex analytical handling and limited empirical applicability of some of these theoretical innovations, Henning, however, specified a reduced form of the model which formally corresponds to the original Coleman model (Henning, 2000). Since the reduced model is applied in this study, some essential critical points of the Coleman model remain unaffected.

The applied model required the exchange system to be closed, i.e. all relevant actors as well as all policy issues which are of interest to the actors, have to be integrated into the model. In this study, all essential political actors of the policy domain with the exception of the Ministry of Finance have been covered. Due to the difficulties of access to the interview partners, the number of interviewed interest groups is limited and cannot claim to be complete and fully exhaustive. Nevertheless, the results yield helpful insights into the general interaction pattern between political actors and interest groups.

Since the study is focused on the agricultural policy domain, other policies are not taken into consideration, as is the case in comparable works. It can be questioned how realistically the political processes can be reflected when one policy domain is detached from the others. For example, the determination of the amount of agricultural expenditures does not only depend on policy-internal considerations but also on external factors such as austerity constraints.

As already mentioned above, the interview respondents were supposed to represent the corporate position. The assumption of the uniform character of the corporate actors, however, is not unproblematic. Particularly in Ukraine, parties and election blocs represented in the Verkhovna Rada were internally highly fragmented. Therefore, positions articulated in the survey cannot carry a fully representative character.

There is a possible divergence between the questionnaire or study design and the perceptions of the surveyed respondents concerning the actors involved in the networks. The study defines factions of the Verkhovna Rada as individual actors. The nomination of the factions as sender

or receiver of exchange resources occurred to a very limited degree. This approach may have underestimated the role of the Verkhovna Rada or, more precisely, of the Agricultural Committee as part of the exchange network. This issue has to be addressed in future relevant studies.

A further critical assumption of the model is the premise of the original Coleman model (1990) that the exchange takes place in a perfect market. This assumption implies an absolute transparency about the interests and resource endowments of all actors as well as about market conditions, i.e. relative values or prices of the exchanged objects. Another aspect that must be given for a perfect market is the absence of factual and personal differences. The actors have unrestricted access to each other and ideological cleavages do not present an obstacle for the exchange (Linhart, 2006). The control resources are treated as homogenous and measured only in quantitative but not qualitative terms. Furthermore, the absence of transaction costs is typical of such spot markets. This assumption appears particularly critical against the backdrop of the nature of the political exchange. Hereby, the actors do not explicitly transfer their voting rights but only commitments for a particular voting behaviour. As non-institutionalised social exchange, the political exchange requires a high level of trust entailing high transaction costs (Henning, 2000; Kappelhoff, 1993; Krause, 2005). As already described in Chapter 4.5, Henning (2000) addressed this critical assumption of the Coleman model. As suggested by Kappelhoff and Pappi (1984), he assumed that transaction costs could be explained, analogically to the transport costs for the physical goods, by social distances between exchanging partners. Instead of a perfect market, Henning (2000) suggested the existence of a segmented market, where the exchange equilibrium can be achieved as in spatial equilibrium interregional trade models with transport costs. However, it is not a trivial task to empirically measure the individual assessment of disutility which the actors experience in order to overcome social distances. Therefore, the reduced form of the model abandons the direct measurement of transaction costs. Instead, they are estimated based on empirically observable transfer networks, while transaction costs arising from the political exchange between political agents are completely neglected (Krause, 2005).

As already described in the theoretical part of this work, according to the Coleman model, actors demand control resources in a particular issue in proportion to the intensity of their interest and under consideration of market prices and their budgets. This behavioural pattern is referred to as a rule of proportional resource allocation (Matiaske, 2013). This assumption, however, excludes the possibility that the actors focus their entire resources and efforts on a

specific project and sacrifice therefore other projects which they are also interested in (Krzywdzinski, 2008). The individual control demand is not derived from the maximisation of the expected utility but axiomatically through proportional resource allocation (Krause, 2005). The exchange of voting power, however, involves external effects which Coleman neglects by assuming that the actor has no information about preferences and interests of other actors. Henning (2000), however, presumes that the actors have some expected values about final decisions. The smaller the expected difference between the final outcome and own ideal position, the less effort will be undertaken by the actor to gain additional control resources. This behavioural form is denoted as political commitment which permits the explicit consideration of external effects of voting power exchange (Krause, 2005). The reduced form of the Henning model, however, refrains from the application of the external effects due to the complex formal derivation of this model's implication. Thus, the concept of proportional resource allocation remains unchanged and is justified by the maximin strategy[29] of the actors (Linhart, 2006).

As in other similar models, it is not assumed that the exchange model reflects the real decision-making processes. This model, for example, abstracts from the following influence factors: decision-makers not always act rationally; negotiation processes can be determined by personalities or develop self-reinforcing tendencies; media or public discussions can also play a role. Such an abstraction can be justified by the notion that the preferences and interests as well as influence resources of the policy-domain actors are the most important factors in order to explain political decisions (Krzywdzinski, 2008).

When simulating the alternative policy scenarios, access structure and exchange relations of the reference scenario are sustained. The shifts in the institutional power, which is especially obviously marked in the party government scenario, however, would presumably lead to different lobbying strategies.

Despite these restrictive theoretical assumptions and limitations due to low data accessibility, the study results offer interesting insights into the fundamental structure of agricultural policy-making domain in Ukraine including the exchange relations of the actors, their power and

[29] The maximin strategy implies that, given the large number of legislative agents, the individual actors cannot observe the exchange processes of the others. Under this assumption, it appears rational to demand control proportionally to the own interest intensities (Henning, 2000).

influence resources, preferences and ideological frontiers as well as possible effects of different scenarios on agricultural policy orientation.

The main findings of the study can be summarised as follows:

1. The application of the policy network analysis allows the assessment of access and resource exchange structures between different political actors and interest groups in the agricultural policy field. Information and political support networks provide insights into the positions of the actors and their involvement in the policy-domain. The Ministry of Agrarian Policy appears to play the most important role in the information exchange network. However, other governmental bodies as well as interest groups are also rather active. The President proves to be active in the provision of information without explicitly demanding it. The parliamentary factions, however, are rarely named as senders or recipients of relevant information. Within the policy support network, interest groups are perceived as most important for an intermediation of the solutions supported by the electorate. The provision of political support takes place between political agents as well. Formally, the interactions between the governmental bodies and interest groups take place within the Public Council under the Ministry of Agriculture, the Commission of Agricultural Issues of the Council of Entrepreneurs under the Cabinet of Ministers[30] as well as within the framework of the annual memoranda between the Government and the Association on Agricultural Issues. Within the legislative power, the Public Advisory Board of the Committee of Agriculture and Land Resources was only created in 2008. Besides the interest groups, it includes stakeholders from academic institutions and international technical assistance.
2. One of the most important results of the exchange model is the distribution of the political control in the equilibrium as a result of resource exchange. The original institutional power endowment is measured by the Shapley-Shubik index. The overall political control outflow from politicians to the interest groups amounts to 16.5%. Interestingly, besides the interest groups, also centrally positioned political actors, particularly the Ministry of Agrarian Policy as well as the President and the Ministry of Economy, can gain additional political control for information and political support delivery. Hence, in the exchange equilibrium, the Ministry of Agrarian Policy embodies the

[30] In 2010, however, the work of the council was suspended.

most dominant actor in the policy domain. On the other hand, the Prime Minister and the factions of the Verkhovna Rada experience the highest negative net political influence. A closer look at the sources of power generation reveals considerable differences between the actor categories. Understandably, the interest groups gain their total power through information and political support resources. However, as in previous studies (Henning, 2000, Krause, 2005), the classical resource endowment does not necessarily predict the main source of power generation of political agents, as some of the centrally located political actors can gain even more power from their influence resources than from their original power endowment.

3. By applying the Principal Component Analysis as an efficient and widely used statistical method to analyse political preferences, three main ideological dimensions are identified. They refer to agricultural liberalisation, sustainability and the degree of expenditure. The subsequent cluster analysis and the principle component analysis based on the Q-methodology confirm the existence of four clusters preferring similar positions in view of the mentioned ideological dimensions. The clusters include the conservative, moderate, liberal and far-reaching liberal ones.
4. Besides the reference scenario which estimates the status quo mean-voter results, the study performs three alternative policy simulations. While the first one, the scenario without lobbying or exchange resources analyses the structural changes, the party government and the two chambers scenarios refer to the implications of institutional transformations on agricultural orientation. The results demonstrate that the scenarios hardly show any differences regarding the first ideological dimension, i.e. agricultural liberalisation. The scenario without lobbying or political exchange leads to a higher appreciation of sustainability matters and to lower agricultural expenditures compared to the reference scenario. In the case of the party government, the sustainability degree is the lowest compared to all other scenarios, as are, however, the expenses on agricultural issues. The distribution of power in the framework of the bicameral legislature is similar to the reference scenario. The same applies to their mean-voter results. In the three-dimensional ideological space diagram, their positions are almost alike.

6 Protection for Sale and Ukrainian Agriculture – Empirical Investigation

6.1 Introduction

As already discussed in previous sections (see Chapter 3.3), the Ukrainian agricultural trade policy, including ad valorem import tariffs, is biased towards a number of commodities. While pork, beef and sugar as sub-sectors receive state support, cereal and dairy products are implicitly taxed (Nivyevskiy et al., 2015). In order to analyse the determinants of cross-commodity protection, this empirical investigation applies the Grossman-Helpman (G-H) Model (1994) Protection for Sale. More precisely, the data on the political organisation structure in the Ukrainian agricultural sector is combined with data on trade protection in order to explore the association between those two aspects. For this purpose, pooled cross-section and time-series data for 48 agricultural commodities from 2006, 2007 and 2008 has been examined. The time period of study is selected according to the following considerations: beginning with 2009, Ukraine's commitments to gradually reduce tariffs in the course of the accession to the WTO limited its freedom to unilaterally shape trade policy. Although Ukraine had significantly decreased its tariffs since 2005 in the lead up to the WTO accession in 2008, restrictions in the form of "bound" tariff schedules were not yet effective. This allows the application of the G-H Model in which the pattern of import tariffs is explained endogenously by the influence of domestic lobbies and not as a result of international multilateral agreements.

Based on the theoretical G-H Model, Gawande and Hoekman (2006) specified a testable implication about the cross-sector trade protection pattern of US agriculture. The authors assume that the politically organised population is a negligible fraction of the country's total population. This assumption applies to the context of Ukrainian agriculture as well. Therefore, the specification proposed by the authors is also used in the following empirical work.

Given the pervasive use of agricultural export subsidies in the US, Gawande and Hoekman (2006) additionally incorporate them into their study. In Ukraine, however, agricultural commodities do not receive any export subsidies. On the contrary, some export-oriented agricultural products are even subject to duties, quotas and other restrictions as described in Chapter

2.3.4. Therefore, the study is focused on the pattern of import protection measures.

According to the model specification by Gawande and Hoekman (2006), the setting of equilibrium tariffs by the Government satisfies the following equation[31]:

(6-1)

$$\frac{t_i}{1+t_i} = \left(\frac{1}{a}\right) * \left(I_i * \frac{Z_i}{e_i}\right)$$

Here, t_i is the level of the ad valorem tariff on the import of good *i*. *I* is an indicator variable that takes the value of 1 if the producer in sector *i* is organised and 0 if this is not the case. $a > 0$ represents the government's preference parameter, i.e. the weight which the Government attaches to overall welfare relative to the contributions by the lobbying groups. $Z_i = {}^{y}/_{m}$ is the inverse import penetration ratio in equilibrium, i.e. the ratio of domestic output *y* to imports *m*, whereas e_i is the absolute elasticity of import demand. According to this model, an imported good is protected if the domestic producers are organised in a lobby and if I_i equals 1. The right-hand side of the model implies that protection of organised sectors occurs in accordance to their *z/e* ratios (Gawande & Hoekman, 2006). If the nominator of *Z*, i.e. the output *y*, is large, factor-specific owners have more to gain from protection. The economy has less to lose from protection, if the volume of imports *m*, i.e. the denominator of *Z*, is lower. In those sectors, social costs that a tariff imposes on the population are lower. The Government will be more likely to accept distortive prices. As deadweight loss from protection is higher when the absolute import demand elasticities are higher, the tariffs are inversely connected with elasticities (Goldberg & Maggi, 1999).

In order to estimate the econometric model, the error term has been additionally included into the equation. Its distribution has been specified as identically independently normal homoscedastic (Gawande & Hoekman, 2006). The G-H Model predicts a non-additive structure since the inverse import penetration ratio interactively enters the political organisation dummy. According to the model, the relation between the level of protection and the import ratio depends critically on whether or not the sector is organised (Goldberg & Maggi, 1999). After bringing the import-demand elasticity to the left-hand side of the equation following Goldberg and Maggi, the equation to be estimated is defined as:

[31] If there is no assumption made that the number of persons organised in lobbies is a very small fraction of the population, then the according equation would be 4-21 (see Chapter 4.7).

(6-2)

$$\frac{t_i}{1+t_i} e_i = \beta(I_i * Z_i) + \varepsilon_i$$

The goal of the estimation is the measurement of the key political economy parameter α. The G-H Model predicts a positive sign of the coefficient β, the inversion of which yields α. The values of these estimates give insights in the quantitative dimension of the model plausibility (Gawande & Hoekman, 2006).

The level of tariffs possibly influences both variables of the regressor, i.e. the inverse import penetration ratio and the organisation dummy. Thus, there might be a problem of endogeneity. In order to consistently estimate the coefficient β for both variables, several instruments are used. Similarly to Gawande and Hoekman (2006), the exogenous variables are constructed by applying the method of Kelejian (1971), which instruments the composite regressor not only by linearly using the instrumental variables but also their quadratic and cross products.

6.2 Specification of Variables

Among the independent variables, the political organisation dummy is the most difficult one to find an empirical equivalent for, which matches the theoretical model (McCalman, 2004). The empirical studies with the G-H Model on trade protection in the US measure the dummy variable for lobbying by the Political Action Committee (PAC) campaign contributions. In countries other than the US, this kind of data is unavailable. The political organisation dummy has to be constructed as a proxy by other means. In some studies, the organisation variable was estimated by the discriminant analysis or the probit model (Mitra et al., 2002; McCalman, 2004).

Hagemejer and Michalek (2008) separate the variables which affect the probability that the sector is politically organised into two groups. The first group includes sector-specific institutional variables: the Political Action Committee campaign contributions made during congressional elections (higher contribution reflects better organisation of the lobby), used by Goldberg and Maggi (1999) as well as Gawande and Hoekman (2006) within the agricultural sector. The studies outside the US used the degree of unionisation instead, associating a higher level of workers' participation in trade unions with a higher protection level (Grether et al., 2001; Mitra et al., 2002). Grether et al. (2001) further applied a variable describing the re-

gional dispersion of chambers and associations by assuming that if the enterprises in a given industry are spread across the country, they exert a stronger influence on the government's decision through different associations.

As the second group of variables, the authors summarise structural characteristics of the market in a sector which affect its ability of organisation. For example, the number of enterprises (McCalman, 2004) and the Herfindahl index measuring the level of concentration in a given industry (Grether et al., 2001; McCalman, 2004) are related to its ability to overcome the free-rider problem. Further variables include sectoral employment and the FDI shares (ibid.). For their study in which they applied the model on the Polish economy in the 1990s, Hagemejer and Michalek (2008) use the proxies for lobbying including the Herfindahl concentration indices, the capital-labour ratio, the export intensity and the share of Government subsidies in the total value of production.

Since the direct measures of industry contributions are non-existent in Ukraine, proxies can be used to measure the organisation level of different agricultural sectors as well. A majority of the above-mentioned variables used in literature refer to the overall economy encompassing all sectors of a given country. Within the agricultural sector, these variables cannot be obtained at a sufficiently disaggregate level in order to assign them to particular commodities. For example, the data on employment and FDI shares are available for the entire agricultural sector but not for the subsectors within agriculture. To assess the extent to which the different branches of the sector are politically organised, an approach is adopted which takes into account the specific structure of Ukrainian agriculture. It is namely assumed that its dual character (see Chapter 2.3.3) can possibly influence the lobbying patterns in the sector. Commercial large-scale enterprises produce around half of the total agricultural output, the remaining output coming from smallholders (OECD, 2013). The high number and country-wide dispersion of the small private households gives rise to the supposition that they may be unlikely to have the resources, the know-how or the access to the necessary technologies to lobby their needs. The agricultural enterprises, on the other hand, increasingly dominated by large holdings and more concentrated, could probably overcome the free-riding problem, organise themselves and push through their interests more easily. As the large-scale farms possibly have more political weight, the Government may be sensitive towards commodities predominantly produced by them.

In order to operationalise this supposition, the share of agricultural enterprises in the production volume relative to the households has been calculated for each commodity. Within the framework of alternative specification, the variable has been constructed based on the share of agricultural enterprises in the production value of the respective commodities. This was done due to the consideration that the enterprises might primarily seek protection for the products with a higher production value. Additionally, the export shares of produced goods have been estimated, as export oriented goods could theoretically receive special treatment by the Government. Thus, there are three specifications of sectoral organisation altogether: share of agricultural enterprises in production relative to households (enterprise-household ratio, E-H), value of the enterprises' production (VoE) and export intensity (EI). In all three cases, the dummy variable for organisation *I* takes the value of 1 if the variable in question for a given commodity was higher than the median, and it takes the value of 0 if this was not the case.

Most researchers handle the endogeneity problem of the inverse import penetration ratio by using instrumental variables. According to Hagemejer and Michalek (2008), these variables include factor endowment characteristics responsible for comparative advantages such as labour intensity (Grether, De Melo, Olarreaga, 2001), wage per employee (McCalman, 2004; Trefler, 1993), capital-labour ratio (Grether, De Melo, Olarreaga, 2001 and McCalman, 2004) or human capital-labour ratio (McCalman, 2004). Further applied variables are capital, investment, labour shares in output as well employment and investment levels (Goldberg & Maggi, 1999; Hagemejer & Michalek, 2008). As in the case of the dummy of political organisation, these variables are hardly available on the level of commodities within the agricultural sectors. Following Gawande and Hoekman (2006), two exogenous variables have been constructed that identify each of the endogenous variable *I* and *z*. The first instrument, constructed for the variable of political organisation, measures direct Government payments to each commodity. The subsidies can reflect the level of political organisation of a given commodity. Sectors with stronger representation through interest groups are likely to receive higher fiscal assistances (Hagemejer & Michalek, 2008). The second instrumental variable, applied in order to identify output-to-import ratio, basically represents the agricultural land area for each commodity. Since the independent variable in model (6-2) is a composite of the two variables, not only direct Government payments and land areas have been applied as instruments but also their squares and cross-products as proposed by Kelejian (1971) within the Two-Stage-Least-Squares Model.

6.3 Data

The Ukrainian import tariff data on agricultural commodities from the years 2006, 2007 and 2008 were obtained from United Nations Conference on Trade and Development (UNCTAD) Trade Analysis Information System (TRAINS) which, as a comprehensive computerised information system, provides data on trade control measures including ad valorem tariffs at the Harmonized System (HS) 6-digit level. The data on quantities and values of agricultural production, imports, exports and acreage of the agricultural commodities of the corresponding years were retrieved from the Food and Agriculture Organization Corporate Statistical Database (FAOSTAT). In order to construct *Z*, i.e. the output-to-import ratio, production quantities of the 48 commodities with the highest domestic production value have been divided by the respective import quantities. In the case of crops, the harvested areas have been taken into account. Country-wide meadows and pasture areas have been proportionally assigned to livestock products in accordance with their respective production value. Since the data on ad valorem tariffs were displayed at a more disaggregate level compared to the other data, tariffs corresponding to different forms of commodities reported to be imported by FAOSTAT were tallied up and divided by the number of the respective product codes. For 2006 and 2007, only the data of Most Favoured Nation (MFN) rates were applied due to data availability, for 2008, the special preferential tariffs for the CIS-countries were additionally taken into consideration. If imports partly originated from CIS countries, the calculation of the average tariffs for the particular commodities included these preferential rates. In the case that there were imports solely from CIS countries, only preferential rates were applied.

The data on the production structure of agricultural commodities by types of agricultural holdings, i.e. agricultural enterprises and households, was acquired from the State Statistics Service of Ukraine. The data on subsidies of agricultural products originates from the OECD Agricultural Support Estimate Database for Ukraine of different years. The latter includes all budgetary transfers from taxpayers to agricultural producers on commodity-specific programmes: payments based on input and output as well as payments arising from policy measures based on current and non-current area, animal numbers, receipts or income and requiring or not requiring production. The Market Price Support (MPS) is not included in this variable. Since the MPS includes protection measures containing foreign policy instruments, it would be unsuitable in the context of the applied theoretical framework.

The existing data on estimated import demand elasticities are considered to be unreliable and noisy (Goldberg & Maggi, 1999). Elasticities estimated by Kee et al. (2008) do not cover a majority of the agricultural commodities examined here. Therefore, the elasticities of import demand for all sectors are thus are set to equal -1.

Table 17 Description, sample size, means and standard deviations of variables applied in the equation

Variables	Description	N	Mean	Standard Deviation
$\frac{t_i}{1+t_i} * e$	Ad valorem tariffs multiplied by import demand elasticity	144	-0.779	0.2490
$I_i(E-H) * Z_i$	Dummy variable on the share of agricultural enterprises in production relative to households (E-H) multiplied by the output-to-import ratio (1000 tonnes)	144	3.021	12.605
$I_i(VoE) * Z_i$	Dummy variable on the value of enterprises production (VoE) multiplied by the output-to-import ratio (1000 tonnes)	144	2.966	12.488
$I_i(EI) * Z_i$	Dummy variable on the export intensity (EI) multiplied by the output-to-import ratio (1000 tonnes)	141	3.099	12.665
Payments	Direct Government payments (UAH million)	144	85.553	247.253
Farmland	Area (1000 ha)	144	710.96	1356.564

Note: I=1 if the value is higher than the median, otherwise I=0.
Source: Own calculation.

Table 17 presents statistics including the means and standard deviations of all specified variables applied in the three different models as well as their descriptions.

6.4 Results of the Econometric Estimations

The econometric estimations were conducted in different specifications using the sample of 48 commodities. The data of the years 2006, 2007 and 2008 have been pooled so that there are altogether 144 observations. The different specifications of political organisation proxy include: 1) the production share of agricultural enterprises in relation to households, 2) the

production volume of agricultural enterprises and 3) the export shares of the respective commodities.[32]

The estimations have been conducted on the basis of Kelejian's Two-Stage-Least-Squares (2SLS) method according to Gawande and Hoekman (2006). Hereby, the following instrumental variables have been used: governmental direct payments, farmland as well as their quadratic and cross-products. As the number of instruments exceeds the number of endogenous regressors, the validity of the instruments has been verified with the Sargan Test of the over-identifying restrictions. This method tests the hypothesis that the instrumental variables are uncorrelated with the model's error terms and hence exogenous. The p-value of the Sargan Test amounting to 0.39 suggests that the null hypothesis, which says that the overidentifying restrictions are valid, cannot be rejected. However, besides the ascertainment of exogeneity, it is necessary to examine how strongly the instruments are related to the endogenous regressor. A commonly accepted measure is the first stage of the F-statistics above 10. Stock and Yogo (2005) show that with the use of five instruments the first-stage F-statistic must be higher than 6.40 in order to make the bias of the 2SLS estimator relative to the (large-sample) bias of the OLS estimator lower than 20% (Gawande & Hoekman, 2006).

Table 18 First-stage regression results of five instruments and the dependent variable (endogenous variable in the structural model)

	Model 1	Model 2	Model 3
F-Statistics	3.369	3.631	1.337
R-squared	0.109	0.116	0.0472
p-value	0.007	0.004	0.252

N =144 in Models 1 and 2, 142 in Model 3.
Different specifications of dummy variable I:
Model 1: Production structure (agricultural enterprises/households E-H);
Model 2: Production value of the agricultural enterprises (VoP);
Model 3: Export ratio of the commodities (EI).
Independent variables: direct payments, farmland, their squares and cross products.
Dependent variable: I*z/e, whereas z/e is production/imports, I-dummy variable for political organisation.
Source: Own calculation.

[32] Within this specification, 47 commodities have been included due to data accuracy.

Table 18 shows that the first stage F-statistics are lower than the value suggested by Stock and Yogo. These results indicate a weak instrument problem. Especially the results of model 3 are unsatisfactory. Generally, the Limited Information Maximum Likelihood estimator (LIML) is more robust to weak instruments.

Table 19 presents the 2SLS and LIML estimates of the parameter β. However, the LIML estimates do not considerably differ from the 2SLS results. The Anderson-Rubin test concerning the significance of the endogenous regressor, i.e. the robust measure even if the instruments are weak, points to the significance of $I_i * \frac{z_i}{e_i}$ at the 1%-level implying that the instruments used were appropriate.

In terms of signs and statistical significance, the estimates are in line with the prediction of the G-H Model, particularly in the first two models. The positive and statistically significant β shows that the import tariffs of the politically organised sectors increase according to their output-to-import ratio. The change of the latter in a politically organised sector would lead to a higher level of dependent variable. The differences between Model 1 and Model 2 are rather marginal.

Table 19 2SLS and LIML with five instrumental variables, estimation and tests' results

	2SLS	LIML	Sargan Test	Sargan Test p-value	Anderson-Rubin Test F-Statistics	Anderson-Rubin Test p-value
Model 1	0.027	0.034	4.1193	0.390	F=10.576	0.000
	[3.473]***	[3.284]***				
Model 2	0.027	0.033	3.5173	0.475	F=10.576	0.000
	[3.585]***	[3.437]***				
Model 3	0.037	0.045	1.5077	0.825	F=7.007	0.000
	[2.343]**	[2.190]**				

N =144 in Models 1 and 2, 142 in Model 3.
Absolute t-values in brackets: * significant at 10%; ** significant at 5%, *** significant at 1%.
Model 1: Production structure (agricultural enterprises/households E-H);
Model 2: Production value of the agricultural enterprises (VoE);
Model 3: Export ratio of the commodities (EI).
Five instruments used in the first stage: direct payments, farmland, their squares and cross products.
Source: Own calculation.

The results of Model 3 with regard to the first stage statistics, however, cast doubt on the appropriateness of the export share as the proxy for political organisation. This outcome is not surprising, given the evidence of export restrictions on grain, for example.

Table 20 Estimation of α, weight attached to the social welfare by the government

	2SLS	LIML
Model 1	37.0	29.4
Model 2	37.0	30.3
Model 3	27.0	22.2

Source: Own calculation.

By the inversion of the coefficient β, the α estimates can be calculated which measure the weight that the Government attaches to social welfare. Similarly to the previous empirical results of the "protection-for-sale" model estimations, the weight assigned to the welfare by the Ukrainian Government is considerably higher than the weight attached to the influence of lobbying groups. The values are comparable with the results of the Gawande and Hoekman study (2006)[33] on the US-American agricultural sector, implying that the Ukrainian Government places at least 22.2 times as much weight on welfare as on the lobbying influence (according to LIML-estimation, see Table 20). The corresponding *a* estimates in the studies analysing the whole economy of different countries have even higher magnitudes, ranging from 40.88 in Australia (McCalman, 2004) through 70 in the United States (Goldberg & Maggi, 2000) to between 76 and 104 in Turkey (Mitra et al., 2002). Differences in methodological approaches and study designs, including the specification of the dependent variable (some of them examine protection measures other than tariffs) make the direct comparison between results difficult. Nevertheless, the higher welfare weights in studies looking at the economy in general can possibly be explained by relatively higher rates of foreign trade openness compared to the agricultural sector which is assumed to be more protected. This consideration is consistent with the interpretation of Goldberg and Maggi (1999) who explain the relatively low foreign trade protection level of the US economy within the framework of the G-H Model by high importance of welfare considerations in the government's objective. Mitra et al. (2002) attribute high welfare preferences to insufficient levels of data disaggregation which is common to the studies empirically investigating the implications of the G-H Model. Furthermore, the authors argue that the model may overestimate α, as it focuses only on trade policy, abstracting from other types of concessions and services provided by governments to the organised sectors (Mitra et al., 2002). Gawande and Hoekman (2006) resolve the paradoxically high results on preferences of the US-Government for welfare compared to the contributions by introducing the assumption of policy uncertainty and the fact that contributions are made

[33] The range of α estimates lies between 20.8 and 32.3 in the study of Gawande and Hoekman (2006).

ex ante to the policy. Lopez and Matschke (2006) suggest that the main reason for unrealistically high welfare preferences is the relatively low magnitude of the import price elasticities which results in unusually large regressors, aggravated by low import penetration ratios. The authors try to circumvent this problem by estimating the G-H Model, using import slopes or elasticities derived from domestic demand, supply and prices (Lopez & Matschke, 2006). Mitra et al. (2006) assume that all specific-factor owners are organised into different lobbies. These assumptions, alongside with a more tight empirical specification to the model, yield more moderate parameter estimates (Mitra et al., 2006).

6.5 Sensitivity Analysis

The original G-H Model considers the set of politically organised sectors as exogenous. As part of their sensitivity analysis, Goldberg & Maggi (1999) compared the results by treating the political-organization dummies as endogenous to the results from a specification that treats them as exogenous. Consequently, an alternative version of the specification of the dummy variable has been estimated in order to test the robustness of the results. Furthermore, since the variables used for the political organisations are proxies instead of direct contributions as in the US-American context, they probably suffer less from the endogeneity problem (Hagemejer & Michalek, 2008). In this form, only one instrumental variable, namely the farmland, has been applied. The variable measuring the level of political organisation is handled as exogenous. Model specifications include again 1) the production share of agricultural enterprises in relation to households, 2) the production value of agricultural enterprises and 3) the export shares of the respective commodities. The estimation results using one instrument are demonstrated in Table 21. Since in the case of the exact identification the 2SLS and LIML results are identical, only the latter is reported.

The parameter estimates of the model specification assuming the exogeneity of the political organisation variable differ only slightly from the specification with five instrumental variables. The results of the first two models are significant at a level of 5% and with their positive signs consistent with the G-H Model predictions.

Table 21 LIML with one instrumental variable, estimation and test results

	LIML	Anderson-Rubin Test F-Statistics	Anderson-Rubin Test p-value	α estimates
Model 1	0.035	19.602	0.000	28.57
	[2.188]**			
Model 2	0.034	19.602	0.000	29.41
	[2.292]**			
Model 3	0.064	11.488	0.000	15.63
	[0.985]			

N =144 in Models 1 and 2, 142 in Model 3.
Absolute t-values in brackets: * significant at 10%; ** significant at 5%; *** significant at 1%
Model 1: Production structure (agricultural enterprises/households E-H);
Model 2: Production volume of the agricultural enterprises (VoE);
Model 3: Export ratio of commodities (EI).
The instrument used in the first stage: farmland.
Source: Own calculation.

The α estimates lie accordingly in the same magnitude. The insignificant LIML estimates and the low first stage F-statistics of the Model 3, on the other hand, again speak against the use of the export intensity as proxy for the political organisation. The relatively low value of the α estimate of Model 3 is therefore quite unreliable.

Table 22 First-stage regression results of the instrument and the dependent variable (endogenous variable in the structural model)

	Model 1	Model 2	Model 3
F-Statistic	5.594	6.309	1.017
R-squared	0.038	0.043	0.007
P-value	0.019	0.013	0.315

N =144 in Models 1 and 2, 142 in Model 3.
Different specifications of dummy variable I:
Model 1: Production structure (agricultural enterprises/households E-H);
Model 2: Production volume of the agricultural enterprises (VoE);
Model 3: Export ratio of the commodities (EI).
Independent variables: farmland.
Dependent variable: *z/e*I*, whereas *z/e* is production/imports, *I*-dummy variable for political organisation.
Source: Own calculation.

6.6 Critical Assessment and Conclusions

The main difficulty for the empirical application of the G-H Model is the data requirement for the estimation of lobbying actions. Outside the United States, where the lobbying can be calculated on the basis of the contributed data, the mapping of interest groups' actions is not an easy task. The researchers therefore apply proxies which can be quite ad hoc according to Swinnen (2010). In the present study, the applied proxies of the first two models refer to the dual structure of agricultural production and thus take into account country-specific characteristics. In future studies, it would be conceivable to incorporate the findings of the political network analysis regarding the influence of interest groups into the G-H Model. Therefore, however, more differentiated data on the specific interest groups of the agricultural sub-sector needs to be empirically collected.

Another challenge lies in an application of the model on the agricultural sector in view of data availability. Studies encompassing all sectors deploy sector-specific factor-endowments as instrumental variables. The breakdown of the data on factor endowment to agricultural subsectors is mostly difficult due to the absence of corresponding data. Therefore, the only accessible instrument referring to factor endowment used in the study is the farmland.

According to Swinnen (2010), predictions of the original G-H Model are at odds with the basic empirical observations regarding trade protection, including the basic patterns of agricultural distortions. Hereby, he refers to the empirical evidence summarised as "development pattern" and "relative income pattern". As outlined in Chapter 4.3.3, the development pattern describes the positive correlation between agricultural protection and a country's per capita income. The "relative income pattern" refers to the observation that sectors in relative economic decline tend to be more protected. However, in order to make the theoretical framework more realistic, the basic model has been modified and extended by various researchers. For example, Baldwin and Robert-Nicoud (2002) extended the G-H Model by explaining governments' interventions to support ailing sectors by the varying ability of interest groups to pick up the rents of lobbying. Gawande and Bandyopadhyay (2000) as well as Cadot et al. (2004) introduced the factor-market rivalry and downstream linkages. The former found out that protection rises with the share of an industry's output used by the downstream sectors as intermediate good and with the concentration of downstream producers. The evidence showed that the higher the protection of intermediate goods, the greater the protection for the final products. Cadot et al. (2004) proved that nominal protection rates escalate with the degree of

processing. Referring to the agricultural sector, it would be interesting to test the relationship between farms and agribusiness (Swinnen, 2010).

In the Ukrainian context, it would also be interesting for further empirical studies to include downstream linkages and to examine the relationship between raw materials used as intermediate goods for processed products. Hence, the model could incorporate the rivalry of lobbying depending on the processing chain. The prerequisite for such an extension is, of course, the availability of data which allows the separation between raw and processed goods.

The main findings of the study can be summarised as follows:

1. The results of the empirical application of the G-H Model on Ukrainian agriculture imply that lower import-to-output ratios lead to higher protection levels in sectors dominated by commercial agriculture. Thus, the data supports this analytic approach in which the formulation of trade policy, in particular the patterns of the import tariff protection, is affected by political support. This finding holds true for specifications referring to the production share of agricultural enterprises relative to the share of smallholders and the production volume of commercial agriculture as proxies for the political organisation. The selection of these variables is based on the presumption that commercial companies are fewer and less dispersed than households and thus better organised. The specification which uses export intensity as dummy variable for the political organisation level of a subsector is rather inadequate to predict the cross-sectoral import protection. Given the negative bias of Ukrainian agricultural policy towards exportable products, this result is not surprising.
2. As in the previous empirical studies, the weight which the Government places on aggregate welfare vis-à-vis the political support is quite high. Compared to the parameter estimates of studies encompassing all economic sectors, however, the calculated weights even remain low. Generally, the higher level of trade protection of agriculture may be the possible explanation for the latter implication. Potential adjustments of the empirical specification in future studies, as, for example, an alternative or more precise measurement of import demand elasticities or political organisation patterns, could yield more moderate parameter estimates.

7 Summary and Conclusions

The objective of the present work was to analyse the structural, institutional and political determinants of Ukrainian agricultural policy at the end of the 21st century's first decade. The study applied the policy network approach (Henning & Pappi, 1998; Henning, 2000), combined with the theoretical model of multidimensional legislative decision-making (Coleman, 1966, 1990; Henning, 2000). This theoretical framework quantitatively measures the influence of interest groups and analyses the interplay between formal institutions and power exchange processes in networks. Besides general agricultural policies, it was empirically investigated in the thesis how interest groups influence the formation of agricultural trade policy patterns, in particular import tariffs. To this end, the prominent Model of Grossman-Helpman (1994) was used which emphasises the impact of special-interest politics on the cross-sectoral structure of trade protection. The application of this approach on the agricultural sector of a transition country took place for the first time.

Starting with a retrospective review of the agricultural transition processes since Ukraine's independence, the study outlined the most important issues of the policy field including agricultural support policies, land reforms and farm structure, international trade relations, rural development, agro-processing as well as environmental issues. The following chapter was dedicated to a detailed analysis of the Ukrainian political system including the most relevant political and non-governmental players of the policy domain. Following the descriptive part, the main theoretical concepts and models of the political economy were introduced and delineated. The subsequent theoretical chapter provided a comprehensive analysis of the applied theoretical frameworks, their main premises and predictions as well as specifications for empirical examination.

The own empirical study has been divided into two parts. In the first section, Ukrainian agricultural policy was quantitatively analysed by a political exchange model. The second part econometrically examined the influence of special interests on agricultural trade policy formation. The quantitative analysis of the Ukrainian agricultural policy was based on primary data, collected through interviews during two two-week research trips to Ukraine. The surveyed actors included factions of the Ukrainian Parliament, the Presidential Administration, the Prime Minister, the Ministries for Agrarian Policy and Economy as well as interest groups

from the agricultural and food processing industry. The interviews were conducted partly with the representatives of the various political organisations and interest groups as corporate actors and partly with external experts. In the first part of the questionnaire, the respondents were able to indicate their preferred positions concerning the following issues: favoured amount of the agricultural budget, protection level of agricultural producers, welfare level of consumers, development of land markets, openness towards foreign trade, profit margin of agribusiness, degree of environmental standards, animal welfare as well as food safety and rural development. The positions in most of these agricultural policy concerns were collected on the basis of a Likert scale ranging from 1 to 7, where concrete values were assigned to the two "poles". Next, the respondents could specify their interest intensity regarding the policy issues by the distribution of altogether 100 points. In the last part of the questionnaire, the network links between the political actors and interest groups have been identified. From all listed political institutions and associations, the respondents could select the actors, with which they maintain certain types of relations, i.e. transfers of resources such as information and political support. Also in this part, the actors had to indicate interest intensities they attached to each resource.

By using the Shapley-Shubik index, the institutional power of the relevant political agents was calculated under different institutional scenarios. Compared to other scenarios, the policy leadership most closely corresponds to the situation of the agricultural policy domain in Ukraine. In order to examine implications of alternative institutional settings in agricultural policy-making, the distribution of voting power under the party government as well as the two-chamber system were estimated. The institutional power represented the first important data input for the calculation of political control resources held by different relevant actors, including the non-governmental ones, as a result of resource exchange processes within policy-domain networks.

The policy domain network tool measured the intensity and character of the interest groups' access to political decision-making. Information and political support networks provided insights into the positions of the actors and their involvement in the policy-domain. The results of the network position analysis are the following: The Ministry of Agrarian Policy plays the most important role in the information exchange network. However, other governmental organisations as well as interest groups are also quite active. The involvement of the President is one-sided, since he quite actively supplies information without explicitly demanding it in re-

turn. The parliamentary factions, however, are rarely named as senders or recipients of relevant information. Within the policy support network, the interest groups are the most important providers for the intermediation of the solutions supported by the electorate. However, political agents also exchange such kind of political support with each other.

One of the important outcomes of the exchange model is the amount of political control outflow from politicians to the interest groups which equals 16.5%. Interestingly, not only interest groups are able to gain political control in exchange for information and political support but also political actors. Especially the Ministry of Agrarian Policy and the President as well as, to a lesser extent, the Ministry of Economy can increase their political influence compared to their original endowment. In the exchange equilibrium, the Ministry of Agrarian Policy represents by far the most influential organisation in the policy domain. The power outflow of political actors amounts altogether to about 0.304, whereas the Prime Minister and the factions of the Verkhovna Rada experienced the highest negative net political influence.

As expected, the sources of power generation differed considerably depending on the type of the actor. As a matter of fact, the interest groups gained their total power through information and political support resources. As in previous studies (Henning, 2000; Krause, 2005), the classical resource endowment of the governmental actors does not necessarily predict the main source of power generation. For example, the President spawns the biggest share of his total power through information resources. The Ministry of Agrarian Policy profits from its central position in the agricultural policy domain network and gains a significant share of the total power through information exchange or brokerage. As already mentioned, political agents also act as providers of political support, even though to varying degrees. The key basis of power for the political agents, however, remains their institutional power which, with exception of the President and the Ministry of Agrarian Policy, constitutes more than half of their total power. As already implied by the relationship density, the factions in the Verkhovna Rada own very limited information and political support power.

In order to identify the ideological spectrum of the main players in the Ukrainian agricultural policy domain and to explore the main differences and possible conflict lines, the Principal Component Analysis was applied. Within the three-dimensional space, the first component is labelled as “agricultural liberalisation” or “reduction of protection level”. Variables which load high on this component deal with export, import and land market liberalisation issues.

The second component referred to as the "degree of sustainability" is characterised by attitudes corresponding with a low level of environmental protection, food safety and rural development on one pole and a position favouring high standards of the listed issues on the other. The third component is associated with the level of agricultural subsidies and is categorised as "agricultural expenditure". The subsequent hierarchical cluster analysis and the Q-methodology of the PCA identified four ideological clusters in the policy field: the Ministry of Agrarian Policy, the Poultry Association and the Communist Party form the core of the first group which distinguishes itself by a relatively protectionist orientation, moderately favouring sustainability. The second cluster with relatively liberal views but quite high sustainability inclinations consists in essence of the Prime Minister, Bloc Yulia Tymoshenko and Bloc Lytvyn. The third cluster is characterised by a liberal orientation in combination with low preferences for sustainability. It includes the President, Bloc Our Ukraine as well as the Farmers Association. The Ministry of Economy with its far-reaching liberal position and highest sustainability preference forms an additional cluster. Depending on the applied model, the affiliation of the Grain Association, the Party of Regions and the Ukrainian Agribusiness Club varies. In the first three clusters, there are actors representing both the governmental and the non-governmental actors implying that these two actors' categories do not share uniform ideological preferences.

After the exemplary presentation of the legislative voting model calculation procedure, the mean-voter outcomes concerning the main dimensions of Ukrainian agricultural policies have been estimated. This was done under the reference of three alternative scenarios. One of the scenarios dealt with the situation without lobbying and exchange of political resources. The two other scenarios investigated the impact of institutional reforms on the general orientation of agricultural policy. The institutional scenarios included the party government and the bicameral legislature. The selection of the latter two was inspired by the ongoing discussion about constitutional reforms in Ukraine during the period covered by the study. The mean-voter results of all scenarios were diagrammed into the three-dimensional ideological space. While with regard to the first factor, i.e. agricultural liberalisation, all scenarios were similarly positioned, there were differences in view of the two other dimensions, agricultural sustainability and agricultural expenditures. The scenario without lobbying/political exchange demonstrated the highest preference for sustainable agriculture, while the party government scenario achieved the lowest score. Higher agricultural expenditures were mostly appreciated within the reference scenario and the scenario with two chambers, followed by the scenario without

lobbying/exchange of resources. The setting of the party government implied the lowest expenses for agricultural purposes.

With regard to the empirical quantitative policy analysis, further studies can address the limitations of the present work. This can occur through relaxing restrictive theoretical and methodological assumptions by incorporating external effects of voting power exchange and direct measurement of transaction costs. Furthermore, a comprehensive empirical survey encompassing a bigger number of respondents as well as more thorough design of the actor's list can deliver more precise and systematic results.

In the second part of the empirical work, the theoretical framework of the Grossman-Helpman Model has been used to empirically investigate the political economy of cross-commodity agricultural import protection in Ukraine prior to the WTO accession. Therefore, the pooled data describing import tariff levels as well as the import penetration ratio of 48 agricultural commodities in 2006, 2007 and 2008 have been analysed. In order to measure the political organisation level of the commodities, the specific dual character of the Ukrainian agricultural production structure has been taken into consideration. As proxies for political organisation were applied (1) the production share of agricultural enterprises in each commodity relative to the share of smallholders, (2) the production share of commercial agriculture and (3) the export shares. The first two variables were selected due to the assumption that fewer and less dispersed commercial companies have better preconditions to be organised than household farms. Given the possible endogeneity of the composite regressor, an instrumental-variable approach based on 2SLS and LIML appeared appropriate to circumvent this problem. Two instruments were used as exogenous variables. The first instrument, constructed for the variable of political organisation, measured the direct Government payments. The second one, applied in order to identify the import penetration ratio, referred to the farmland. The exogenous variable was constructed by applying the method of Kelejian (1971), which instruments the composite regressor not only by using the instrumental variables linearly but also their quadratic and cross products.

The results of the first two model specifications were in line with the predictions of the G-H theory, implying that in sectors dominated by commercial agriculture lower import-to-output ratios lead to higher protection levels. Thus, the findings of this empirical analysis confirmed that the political organisation is significant for shaping the agricultural trade policy in Ukraine. The third specification, using export intensity as dummy variable for political organ-

isation, proved rather inadequate as proxy to predict the cross-sectoral import protection in Ukrainian agriculture. This result is little surprising given the bias of Ukrainian agricultural policy against exportable products. The sensitivity analysis, which treated political organisation as exogenous variable in accordance with the original assumption of the G-H Model, also confirmed these key empirical findings.

As in previous studies, the weight which the Government assigns to welfare in comparison to lobbying contributions is quite high. However, respective estimates in the studies which analyse entire economies are even higher. Generally, the higher level of trade protection of agriculture may be the possible explanation for this result.

To overcome the problem of the surprisingly high parameter estimates in the Political Preference Functions, the empirical design could be altered by different specifications of the variables such as the price elasticity of import demand, the political organisation structure etc. Further modifications, such as the consideration of political uncertainty, as suggested by a number of researchers, offer additional possibilities to achieve less surprising results.

Future studies can envisage incorporating the findings resulting from the political network analysis with regard to the influence of interest groups into the G-H Model. To this end, however, there is a need of more differentiated data on the sub-sector specific interest groups which must be collected empirically. In addition, future studies can include downstream linkages in order to examine the relationship between raw materials used as intermediate goods for processed products. The availability of the according data, again, is a necessary precondition to perform such extended and advanced studies.

8 Fazit und Zusammenfassung

Die Agrar- und Ernährungswirtschaft stellt für die Ukraine einen bedeutenden Wirtschaftssektor dar. Nach Jahren des Produktionsrückgangs und der Stagnation hat sich der Sektor im Zuge der Reformbestrebungen etwa ab dem Jahr 2000 erholt und verzeichnet seitdem positive Wachstumsraten. Das landwirtschaftliche Potenzial des Landes ist jedoch längst nicht voll ausgeschöpft. Der schwierige Transformationsprozess sowie politische Turbulenzen und Wirtschaftskrisen tragen dazu bei, dass der Agrarpolitik die Konsistenz und die stabile strategische Ausrichtung fehlen, die zur nachhaltigen Entwicklung des Agrarsektors erforderlich sind.

Die vorliegende Arbeit analysiert politische, strukturelle und institutionelle Rahmenbedingungen, welche die Ausgestaltung der Agrarpolitik in der Ukraine vor den Präsidentschaftswahlen 2010 bestimmt haben. Neben der konstitutionellen Ordnung des politischen Systems, in dem politische Entscheidungen formal getroffen und implementiert werden, wird die Rolle und Zugangsstruktur der politikfeldrelevanten Interessengruppen bei Entscheidungsfindungsprozessen untersucht. Als theoretisches Instrumentarium wird das polit-ökonomische Gleichgewichtsmodell von Coleman (1990) und Henning (Henning/Pappi, 1998; Henning, 2000) angewandt. In diesem theoretischen Ansatz werden die politischen Entscheidungen als Ergebnis des Tausches von Kontroll- und Einflussressourcen, d.h. Informationen und politischer Unterstützung, zwischen verschiedenen Akteuren im Rahmen der Netzwerke dargestellt. Anhand des Grossman-Helpman Modells (1994) wird darüber hinaus der Einfluss der politisch organisierten Interessengruppen auf die Struktur von Handelsrestriktionen im Agrarbereich untersucht.

Vor dem Hintergrund der Transformationsprozesse wird zur Reflexion der Forschungsfrage die wirtschaftliche und agrarökonomische Situation in der Ukraine nach der Unabhängigkeit dargestellt. Es werden die Phasen landwirtschaftlichen Wandels beleuchtet, in denen grundlegende agrarpolitische Reformen eingeleitet und umgesetzt wurden. Anschließend werden die Kernpunkte der ukrainischen Agrarpolitik analysiert, deren Ausgestaltungsoptionen als zentraler Untersuchungsgegenstand der Arbeit im Rahmen einer empirischen Erhebung erfasst werden. Danach werden das ukrainische politische System, der Entscheidungsfindungsprozess und die wichtigsten Akteure im Politikfeld beschrieben. Im theoretischen Teil werden

sowohl allgemeine als auch agrarspezifische polit-ökonomische Ansätze dargestellt und kritisch gewürdigt. Anschließend werden die Prämissen, Annahmen und empirischen Spezifikationen der in der Arbeit angewandten Modelle erörtert.

Die empirische Arbeit besteht aus zwei Teilen. Im ersten Abschnitt wird die ukrainische Agrarstrukturpolitik durch ein politisches Austauschmodell quantitativ analysiert. Der zweite Teil untersucht den Einfluss von organisierten Interessen auf die Agrarhandelspolitik ökonometrisch. Die quantitative Analyse der ukrainischen Agrarpolitik basiert auf Primärdaten, die im Rahmen von Interviews mit den wichtigsten Vertretern der ukrainischen Agrar- und Ernährungspolitik erhoben wurden. Die institutionelle Entscheidungsmacht der politischen Beteiligten wird mit Hilfe des Shapley-Shubik-Indexes für verschiedene Konstellationen bestimmt. In die weitere Modellberechnung bzw. in das Referenzszenario fließen die Ergebnisse ein, die neben der legislativen Macht (d.h. den Fraktionen im Parlament) auch die exekutive Macht einschließen und die Rolle der Premierministerin und der Ministerien für Agrarpolitik und Wirtschaft berücksichtigen. Anhand der Politiknetzwerkanalyse werden die Zugangsstrukturen der Interessengruppen auf politische Entscheidungsfindung und die Tauschbeziehungen zwischen verschiedenen Akteuren untersucht. Dabei wird festgestellt, dass das Ministerium für Agrarpolitik die zentrale Rolle im Netzwerk des Informationsaustausches spielt. Innerhalb des politischen Unterstützungsnetzes sind es vor allem die Interessengruppen, die als wichtigste Anbieter von politischer Unterstützung fungieren. Die Auswertung der netzwerkbezogenen Daten zeigt, dass die Interessengruppen mit rund 16.5% des „Machtanteils“ einen beträchtlichen Einfluss auf Entscheidungsfindungsprozesse im Politikbereich ausüben können. Interessanterweise sind es jedoch nicht nur die Interessengruppen, die politische Kontrolle im Austausch für Informationen und politische Unterstützung gewinnen, sondern auch die politischen Akteure. Vor allem können das Ministerium für Agrarpolitik und der Präsident ihren Einfluss gegenüber ihrer ursprünglichen institutionellen Machtausstattung ausbauen.

Die Politikpositionen der Akteure werden mit Hilfe der Hauptkomponentenanalyse zu drei Makrodimensionen zusammengefasst. Inhaltlich entspricht die erste Komponente der Liberalisierung der Agrarpolitik, insbesondere hinsichtlich des Außenhandels und der Entwicklung der Landmärkte. Die zweite Komponente hebt auf die Nachhaltigkeit anhand der ländlichen Entwicklung und der Lebensmittelsicherheit ab. Die dritte Komponente korrespondiert mit der Bedeutung der Agrarausgabeneinsparung. Die anschließende Clusteranalyse und die auf

der Q-Methodologie basierende Hauptkomponentenanalyse bestätigen die Existenz von vier Akteurengruppen, die vergleichbare Präferenzen im Hinblick auf die genannten ideologischen Dimensionen aufweisen.

Durch die Simulation verschiedener Szenarien wird berechnet, wie sich unter den veränderten Rahmenbedingungen die Ausrichtung der Agrarpolitik verschieben würde. Die Szenarien umfassen die Situation ohne Lobbying sowie institutionelle Veränderung in Form des Zweikammersystems und der Parteienregierung. Die Mean-Voter-Ergebnisse aller Szenarien, einschließlich des Referenz-Szenarios, werden im dreidimensionalen ideologischen Raum abgebildet. Während im Hinblick auf die erste Komponente, der Agrarliberalisierung, alle Szenarien ähnlich positioniert sind, gibt es Unterschiede hinsichtlich der beiden anderen Dimensionen, der landwirtschaftlichen Nachhaltigkeit und der Agrarausgaben. Das Szenario ohne Lobbying würde eine nachhaltigere Ausgestaltung der Agrarpolitik und die Einschränkung der Budgetausgaben mit sich bringen. Eine noch stärkere Einsparung des Agrarbudgets und die am wenigsten nachhaltige Agrarpolitik wären im Rahmen des Parteienregierungs-Szenarios zu erwarten. Die Verfassungsänderung zugunsten des Zweikammersystems hingegen hätte keine großen Auswirkungen im Vergleich zum Status quo.

Im zweiten Teil der empirischen Arbeit wird anhand des Grossman-Helpman-Modells (1994) der Einfluss der organisierten Interessengruppen auf die landwirtschaftliche Importprotektion einzelner Sektoren in der Ukraine vor ihrem WTO-Beitritt untersucht. Hierfür werden gepoolte Paneldaten zu Importzöllen und Importdurchdringungsquoten von 48 landwirtschaftlichen Produkten in den Jahren 2006, 2007 und 2008 ausgewertet. Um das politische Organisationsniveau zu messen, wird der duale Charakter der ukrainischen landwirtschaftlichen Produktionsstruktur berücksichtigt. Hierbei werden der Produktionsanteil der Agrarunternehmen im Verhältnis zu kleinen landwirtschaftlichen Haushalten, das Produktionsvolumen der kommerziellen Betriebe sowie die Exportanteile im Verhältnis zur Produktion als drei verschiedene Proxys für die politische Organisation eingesetzt. Um das mögliche Endogenitätsproblem des Regressors zu umgehen, wird der 2SLS- bzw. LIML-Instrumentalvariablenansatz verwendet. Hierbei werden zwei Instrumente eingesetzt: Das erste Instrument, das für die Variable der politischen Organisation herangezogen wird, misst die Direktzahlungen der Regierung an die Landwirtschaft. Das zweite Instrument bezieht sich auf die landwirtschaftliche Fläche und dient zur Identifizierung der Importdurchdringungsquote. Die Ergebnisse der ersten beiden Modellspezifikationen stimmen mit den Prognosen der G-H-Theorie überein. Sie deuten drauf

hin, dass der Zusammenhang zwischen der Höhe der Importzölle eines Sektors und der dortigen Importdurchdringung vom Vorhandensein der organisierten Interessengruppe abhängt. Die Ergebnisse legen somit nahe, dass die politische Organisation für die Gestaltung der Agrarhandelspolitik in der Ukraine von Bedeutung ist. Die dritte Spezifikation, welche die Exportintensität als Proxy für die politische Organisation einsetzt, erweist sich als ungeeignet, um den sektorbezogenen Importschutz in der ukrainischen Landwirtschaft vorauszusagen. Dieses Ergebnis ist wenig überraschend angesichts der Benachteiligung der exportorientierten Produktionszweige in der Ukraine. Ähnlich wie in früheren einschlägigen Studien weist die Regierung dem gesamtgesellschaftlichen Wohlergehen im Vergleich zu organisierten Interessen ein recht hohes Gewicht zu.

Zukünftige Studien können die Ergebnisse der politischen Netzwerkanalyse zum Einfluss von Interessengruppen in die Berechnung des G-H-Modells einbeziehen. Somit gäbe es eine präzisere Variable zur Bestimmung des politischen Organisationgrades. Hierzu müssten jedoch auf der subsektoralen Ebene differenziertere Daten empirisch erhoben werden.

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Appendix

Appendix A

SPSS Output of the PCA for the determination of the ideological dimensions in Ukrainian Agricultural Policy

Table A1 KMO and Barlett's Tests

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.552
Bartlett's test of spherisity	Approx. Chi-Quadrat	67.352
	df	45
	Sig.	.017

Table A2 Communalities of the variables in three component solution

	Extraction
Budget	.904
PSE	.868
CSE	.584
Land	.833
Import	.874
Export	.830
Environment	.437
Animal	.785
Food	.722
Rural	.801

Table A3 Communalities of the variables in two component solution

	Extraction
Budget	.428
PSE	.515
CSE	.566
Land	.800
Import	.840
Export	.736
Environment	.410
Animal	.649
Food	.718
Rural	.795

Figure A1 Scree plot for the determination of the optimal number of ideological dimensions

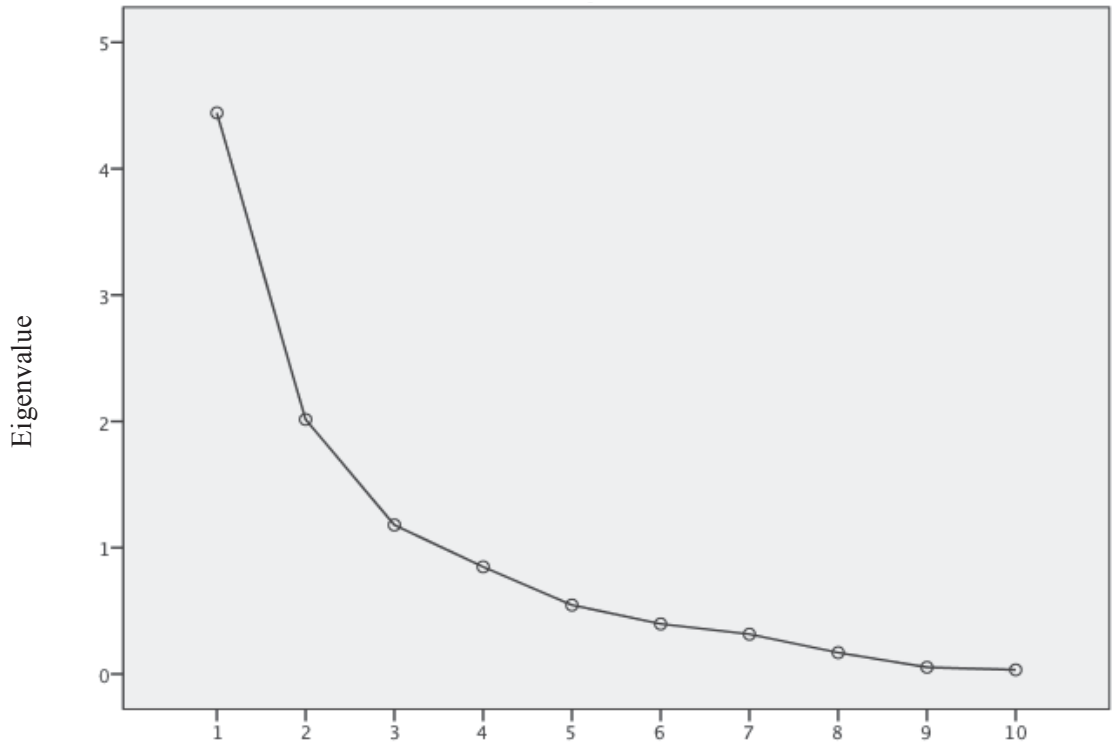

Table A4 Rotated three component matrix[a]

	Components		
	1	2	3
Export	.892		
Import	.861		
Animal	.810		
Land	.798		
CSE	-.619		
Rural		.893	
Food		.848	
Environment		.501	
Budget			.926
PSE			.876

Extraction Method: Principle Component Analysis.
Rotation Method: Varimax with Kaiser-Normalisation.[a]
a. Rotation converged in 4 iterations.

Table A5 Rotated two component matrix[a]

	Components	
	1	2
Import	.898	
Export	.858	
Land	.826	
Animal	.720	
PSE	-.715	
CSE	-.647	
Budget	-.641	
Rural		.891
Food		.847
Environment		.511

Extraction Method: Principle Component Analysis
Rotation Method: Varimax with Kaiser-Normalisation.
Rotation converged in 3 iterations.

Appendix B

Questionnaire

1 Preferences and interest intensities with regard to main policy positions

1.1 Policy Preferences

1.1.1 Please indicate which share of the state budget expenditure on agricultural issues your institution would prefer:

☐

(In 2003-2005, this share varied from 3.7% to 5.0%.)

1.1.2 Please indicate (in percentage) which level of the Producer Support Estimate (PSE) your institution would prefer (the PSE measures transfers from consumers and taxpayers to agricultural producers as a result of state agricultural support policies expressed as a percentage of gross farm receipts):

☐

(In 2003-2005, the PSE percentage varied from -7% to12%.)

1.1.3 Please indicate which level of the Consumer Support Estimate (CSE) your institution would prefer (the CSE measures the annual monetary value of gross transfers to or from consumers of agricultural commodities arising from state agricultural policy measures expressed as a percentage of the total value of consumption expenditure on commodities):

☐

(In 2003-2005, the CSE percentage varied from -7% to 8%.)

1.1.4 Please indicate how fast your institution would like to permit the sales of agricultural land:

- The minimal value *1* corresponds to the *prolongation* of the moratorium on agricultural land market sales until *fully functioning* institutional arrangements are enacted regardless of the time needed for that.
- The maximal value *7* corresponds to the *immediate removal* of the moratorium on agricultural land market sales.

1	2	3	4	5	6	7

1.1.5 Please indicate which position your institution would prefer regarding the internationalisation of the agricultural trade:

- The minimal value *1* corresponds to the far-reaching level of agricultural *self-sufficiency.*
- The maximal value *7* corresponds to *the complete abolition* of any state intervention in agricultural imports or exports.

1	2	3	4	5	6	7

1.1.6 Please indicate which average margin of profit would be the appropriate one for the agroprocessing industry in your opinion:

- The minimal value *1* corresponds to a profit margin of *2%.*
- The maximal value *7* corresponds to a profit margin of *10%.*

1	2	3	4	5	6	7

1.1.7 Please indicate which percentage of cost increase for agricultural producers you could accept due to the introduction of higher environmental standards:

- The minimal value *1* corresponds to a cost increase of *0%.*
- The maximal value *7* corresponds to a cost increase of *10%.*

1	2	3	4	5	6	7

1.1.8 Please indicate which percentage of cost increase for agricultural producers you could accept due to the introduction of higher standards in animal protection:

- The minimal value *1* corresponds to a cost increase of *0%.*
- The maximal value *7* corresponds to a cost increase of 5*%.*

1	2	3	4	5	6	7

1.1.9 Please indicate which percentage of cost increase for agricultural producers and/or the agroprocessing sector you could accept due to the introduction of higher standards in the quality and safety of foodstuffs:

- The minimal value *1* corresponds to a cost increase of *0%.*
- The maximal value *7* corresponds to a cost increase of 5*%.*

1	2	3	4	5	6	7

1.1.10 Please indicate which level of tax increase for the urban population you could accept in order to support the rural population and mitigate the rural/urban income discrepancy:

- The minimal value *1* corresponds to a tax increase of *0%.*
- The maximal value *7* corresponds to a tax increase of 2,5*%.*

1	2	3	4	5	6	7

List of Organisations

1.2 Interest Intensities

Please distribute 100 points to the policy concerns listed below according to the interest intensity of your organisation in these different issues.

Policy Concerns	Interest Intensity
Share of state budget expenditure on agricultural issues	
Welfare of the agricultural producers	
Development of the land market (land market liberalisation)	
Welfare of consumers	
Reinforcement of the international trade	
Welfare of the agroprocessing sector	
Level of environmental protection	
Level of animal protection	
Level of the quality and safety of foodstuffs	
Rural development	
	$\sum 100$

2 Network Questions

2.1 For political organisations

2.1.1 Interest groups (and/or other political organisations) need information about new policies in an early stage of the policy cycle in order to keep their members well informed. Normally, interest groups receive such monitoring information from political organisations. Using the list of organisations, please check *all* the organisations to which you give monitoring information (you can add other relevant organisations, if needed):

List of Organisations:

Political Organisations	*Please mark here*
Presidential Administration	
Prime Minister Administration	
Ministries	
Ministry of Agrarian Policy of Ukraine	
Ministry of Finance of Ukraine	
Ministry of Economy of Ukraine	
Ministry of Environmental Protection of Ukraine	
Minister for Regional Development, Building and Housing of Ukraine	
Ministry of Social Policy of Ukraine	

Verkhovna Rada	
The Party of Regions	
The Bloc Yulia Tymoshenko	
The Bloc Our Ukraine-People's Self-Defence	
The Communist Party of Ukraine	
The Bloc Lytvyn	

Interest Groups	*Please mark here*
Agricultural Producer	
Association of Farmers and Private Land Owners of Ukraine	
Union of Farmers of Ukraine	
National Union of Agricultural Cooperatives of Ukraine	
National Agricultural Chamber of Ukraine	
All-Ukrainian Union of Agricultural Enterprises	
Union of Women Farmers of Ukraine	
Agroprocessing	
The Ukrainian Grain Association	
National Association of Sugar Producers	
Union of Milk Producing Enterprises of Ukraine	
Ukrainian Agribusiness Club	
Association „Ukroliaprom“	
National Association of Meat and Milk Producers "Ukrmeat"	
Union of Grain Converters of Ukraine	
Agro-Industrial Association Group of Companies "Ukrros"	
Association of Insurers in Agrarian Industries of Ukraine	
Poultry Association of Ukraine	
Consumer Organisations and Trade Unions	
Consumer Union of Ukraine	
The Federation of Trade Unions of Ukraine	

2.1.2 On the other hand, interest groups (and/or other political organisations) can frequently provide expert knowledge to political organisations, especially when consequences of complex policies have to be evaluated. Using the list of organisations again, please check *all* organisations from which your organisation receives expert information (you can add other relevant organisations, if needed):

List of Organisations

2.1.3 In democracies, political agents can be considered as representatives of their electorate. Therefore, political agents are interested in finding political solutions supported by a majority of their electorate. Using the list of organisations again, please check for those organisations which are important for you regarding the intermediation of political positions supported by voters (you can add other relevant organisations, if needed):

2.2 For interest groups

2.2.1 Interest groups (and/or other political organisations) need information about new policies in an early stage of the policy cycle in order to keep their members well-informed. Normally, interest groups receive such monitoring information from political organisations. Using the list of organisations, please check *all* the organisations from which you receive monitoring information (you can add other relevant organisations, if needed):

List of Organisations

2.1.2 On the other hand, interest groups (and/or other political organisations) can frequently provide expert knowledge to political organisations, especially when consequences of complex policies have to be evaluated. In which subsector does your organisation provide such expert information? Using the list of organisations again, please check *all* organisations to which your organisation provides expert information (you can add other relevant organisations, if needed):

List of Organisations

2.3 Interest intensities

Please distribute 100 points in order to indicate your interest intensity in each of the resources listed below:

More participation in the procedure of agricultural policy decision-making	
Monitoring information	
Expert information	
Political Support	
	∑100