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

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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.

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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

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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

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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.

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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

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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

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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).

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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.

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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

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