

Impediments to wheat export from Ukraine

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Abstract

According to prospects of international organisations like OECD and FAO, Ukraine will be one of the important suppliers of agricultural products on the world market in the coming decade. Thus, Ukrainian agricultural production and exports are important elements in sustaining global food security. However, the country threatens global food security as well as its own agricultural development when applying grain export restrictions, as happened several times in recent years. Therefore, any impediments to grain trade in the country should be carefully inspected.

In this paper we analyse recent developments of Ukrainian agricultural policy influencing grain trade. We show that any export restriction brings large welfare losses compared to a free trade situation. We support our claim by a comparative analysis of the different export policies applied by the Ukrainian government on the domestic wheat market between 2006 and 2014. Additionally, we suggest and discuss alternative policy responses to realise the policy goal of domestic food security. As the policies applied, export tax, export quota and tax reimbursement, cannot be compared directly we quantify the tax equivalent of each trade policy measure. Under a set of specific assumptions the tax equivalent can be used to compare the effects of policies theoretically and empirically.

Our findings go along with theory and show that export quotas in 2006 and in 2010 had a more restrictive effect on export than export taxes in 2011. Effects of non-reimbursement of VAT are very close to the effects of export tax in 2011 (at the level of 9%), mainly because most of the time these two measures were implemented simultaneously. We also calculated tariff equivalent of VAT non-reimbursement excluding the period of export taxes. Based on these results, the measure corresponds to a slight decline of the tariff equivalent in absolute terms.

As an alternative policy option for the Ukrainian government to respond more efficiently to increasing world market prices in the future it is advised to use consumer-oriented measures for the most vulnerable groups of people instead of distorting market mechanisms.

Keywords: export restrictions, non-tariff barriers, Ukraine, wheat trade

1 Introduction

Ukraine together with Russia and Kazakhstan and other Eastern European countries are seen as countries where large unrealized crop production and export potential exists. According to the new OECD-FAO Agricultural Outlook the above mentioned countries “collectively account for 51 % of the projected increase in cereal exports to 2022”. They will be an important supplier of agricultural products on the world market in the coming decade and thus sustain global food security (OECD/FAO, 2013). Therefore, any interventions in grain trade in these countries are carefully observed and discussed in the media all over the world.

It is quite common among food exporting countries to implement export restrictions. According to Sharma (2011), during the period 2007 – March 2011 among 105 countries that used any sort of the food policy measures, 33 countries restrained their exports at least once using various forms of restrictions (Sharma, 2011). A more recent study of Liapis (2013) shows that during 2002-2012 grains, oilseeds and vegetable oils were the most frequently targeted goods. Restrictions applied to cereals took place in the years of low harvest and price spikes on the world grain market. Ukraine applied grain export restrictions several times allegedly for domestic food security reasons. During the last decade Ukraine introduced various restrictive export measures, such as export licensing, export quotas and export taxes (Annex 1, Table 1). Since 2011/2012 MY grain traders and the government have signed the Memorandum of Understanding (MoU), in the annexes to it they declare the upper limit for annual grain exports.

In this paper we show that any export restriction brings large welfare losses compared to a free trade situation. We support our claim by a comparative analysis of the different export policies applied by the Ukrainian government on the domestic wheat market between 2006 and 2014. Additionally, we suggest and discuss alternative policy responses to realise the policy goal of food security. As the policies applied, export tax, export quota and tax reimbursement, cannot be compared directly we quantify the tax equivalent of each trade policy measure. Under a set of specific assumptions the tax equivalent can be used to compare the effects of policies theoretically and empirically.

The paper proceeds as follows. In the next section the current situation and development of the Ukrainian grain market will be summarized and main policy goals presented. After introducing the theoretical background in Section 2, we will present the results of the analysis in Section 3. Some policy recommendations will be presented in Section 5.

1.1 Situation and development of the Ukrainian grain market since 2011

Ukraine from time to time appears as a newsmaker with regards to its grain sector. It gets, on average, record harvests every two years. The year 2013/14 is not an exception. Starting from June 2013, the Ministry of Agrarian Policy and Food has declared that grain harvest will be around 53-54 million ton and that Ukraine will export half of it - around 24-26 million ton of grain¹. Later the forecast was revised upwards several times and now we can say that the total grain harvest equalled 63 million tons, among them 22 million tons of wheat and 29 million tons of maize². Export of grains reached 32.9 million tons, among them 9.5 million tons of wheat, 2.5 million tons of barley and 20.5 million tons of corn³.

On the contrary, the marketing year 2012/13 ended with the lowest wheat harvest for the past 6 years. Winter frosts and strong drought during the summer months had a negative influence on the crop yields. Thus, the production of wheat was 15.8 million tons. Despite the comparatively small harvest, exports of wheat reached 7.2 million tons.

In 2011/12 MY the gross harvest was considerably higher than in the previous years, at the level of 56.7 million tons. This became possible mainly because of increased corn (22.8 million t) and wheat (22.3 million t) harvest.

¹ <http://minagro.gov.ua/uk/node/6903>

² <http://latifundist.com/novosti/45224-ukraina-postavit-na-vneshnie-rynki-333-mln-t-zerna--minekonomrazvitiya>

³ <http://minagro.gov.ua/uk/node/13802>

Table 1: Stocks to use ratio for wheat for the period from 2006/07 MY to 2013/14 MY

Wheat	Unit	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
Production	mln t	14	13.9	25.9	20.9	16.8	22.3	15.8	22.3
MY Imports	mln t	0.1	0.3	0.1	0	0	0.1	0.1	0.1
Total Supply	mln t	16.5	15.6	28.1	24	19.2	25.7	21.2	25.0
Total Domestic Consumption	mln t	11.7	12.3	11.9	12.3	11.6	15	11.4	11.5
MY Exports	mln t	3.4	1.2	13	9.3	4.3	5.4	7.2	9.5
Ending Stocks	mln t	1.4	2.1	3.1	2.4	3.3	5.3	2.6	4.0
Stocks/Use ratio	%	9.3	15.6	12.4	11.1	20.8	26.2	14.0	19.0

Source: Data from USDA reports

Table 2: Stocks to use ratio for corn for the period from 2006/07 MY to 2013/14 MY

Corn	Unit	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
Production	mln t	6.4	7.4	11.4	10.5	11.9	22.8	20.9	30.9
MY Imports	mln t	0	0	0	0	0	0	0.1	0.1
Total Supply	mln t	7.5	8.6	12.2	11.4	12.5	23.8	21.9	32.0
Total Domestic Consumption	mln t	5.3	5.8	5.9	5.7	6.5	7.8	8.1	9.9
MY Exports	mln t	1	2.1	5.5	5.1	5	15.2	12.7	20.0
Ending Stocks	mln t	1.2	0.8	0.9	0.6	1.0	0.9	1.0	2.1
Stocks/Use, %	%	19.3	9.9	7.7	5.2	8.4	3.7	5.0	7.2

Source: Data from USDA reports

Table 3: Stocks to use ratio for barley for the period from 2006/07 MY to 2013/14 MY

Barley	Unit	06/07	07/08	08/09	09/10	10/11	11/12	12/13	13/14
Production	mln t	11.3	6	12.6	11.8	8.5	9.1	6.9	7.6
MY Imports	mln t	0	0	0	0	0	0	0	0
Total Supply	mln t	12.2	6.8	13.4	12.9	9.6	9.9	8.0	8.4
Total Domestic Consumption	mln t	6.3	5.0	5.9	5.6	6.0	6.3	5.1	5.1
MY Exports	mln t	5.1	1.0	6.4	6.2	2.8	2.5	2.1	2.5
Ending Stocks	mln t	0.8	0.8	1.1	1.1	0.8	1.1	0.8	0.8
Stocks/Use ratio	%	7.0	13.0	8.9	9.5	9.2	12.6	11.7	10.8

Source: Data from USDA reports

One common indicator of mid-term stable grain supply is the stocks-to-use ratio (SUR), defined as the sum of all uses divided by quantity in stock. Assuming rationally behaving stock managers, high SURs are expected to soften price spikes in case of shocks to production. International experience shows that global prices start to increase if world stocks to use ratios drop below 20 % for wheat and 12 % for maize (Bobenrieth et al., 2012).

Domestic consumption of grain in Ukraine averages annually up to 26 million t, including around 12 million t of wheat, 6 million t of barley, 6 million t of corn and 2 million t of other cereals. Based on this demand, the export potential is estimated as a residual variable. In the best years it can amount up to 30 million t.

Out of around 12 million t of wheat for domestic consumption, 5.2 million t goes for human consumption, around 1.6 million t of wheat is used for seeds, 4.1 million t is used for feed, processing into non-food products requires around 0.3 million t, losses amount to 0.4 million t⁴.

Analysing price relations for major cereals reveals that since 2007 domestic producer prices are below the reference border price. As a consequence, Ukrainian grain producers measured by the Producer Subsidy Commodity Transfer (PSCT) are implicitly taxed and Ukrainian consumers measured by the Consumer Subsidy Commodity Transfer (CSCT) are implicitly subsidised. Another beneficiary of depressed domestic grain prices is the animal fattening sector which can rely on comparatively cheap feeding stuff.

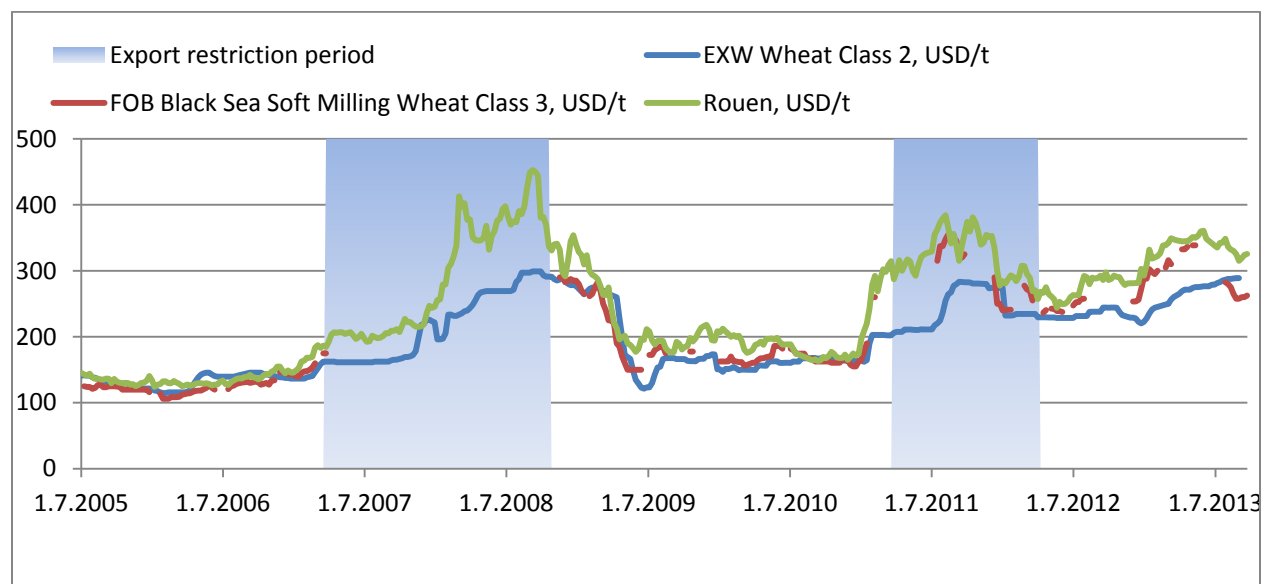
Table 4: Transfers to producers and consumers for selected cereals (in mn UAH)

Year	Wheat		Corn		Barley	
	PSCT	CSCT	PSCT	CSCT	PSCT	CSCT
2006	-855.05	463.21	684.28	-222.91	12.74	63.83
2007	-3,868.16	1,776.59	-160.72	59.79	-1,381.85	240.50
2008	-11,842.08	4,519.45	-3,622.09	497.92	-3,514.04	382.33
2009	-4,931.17	2,092.48	-354.64	37.84	-2,130.78	237.69
2010	-1,524.98	724.08	-1,074.75	160.98	-422.28	59.75
2011	-8,826.09	3,155.85	-9,525.42	711.51	-5,257.69	1,186.56
2012	-7,969.47	3,561.58	-4,760.01	452.19	-3,460.03	684.64

Source: OECD (2014)

As annual data are not able to properly reflect the effect of single export policies lasting only for few months, in what follows we turn to higher frequency data.

Figure 1: Producer and export prices for wheat in Ukraine, Rouen wheat prices (weekly data)



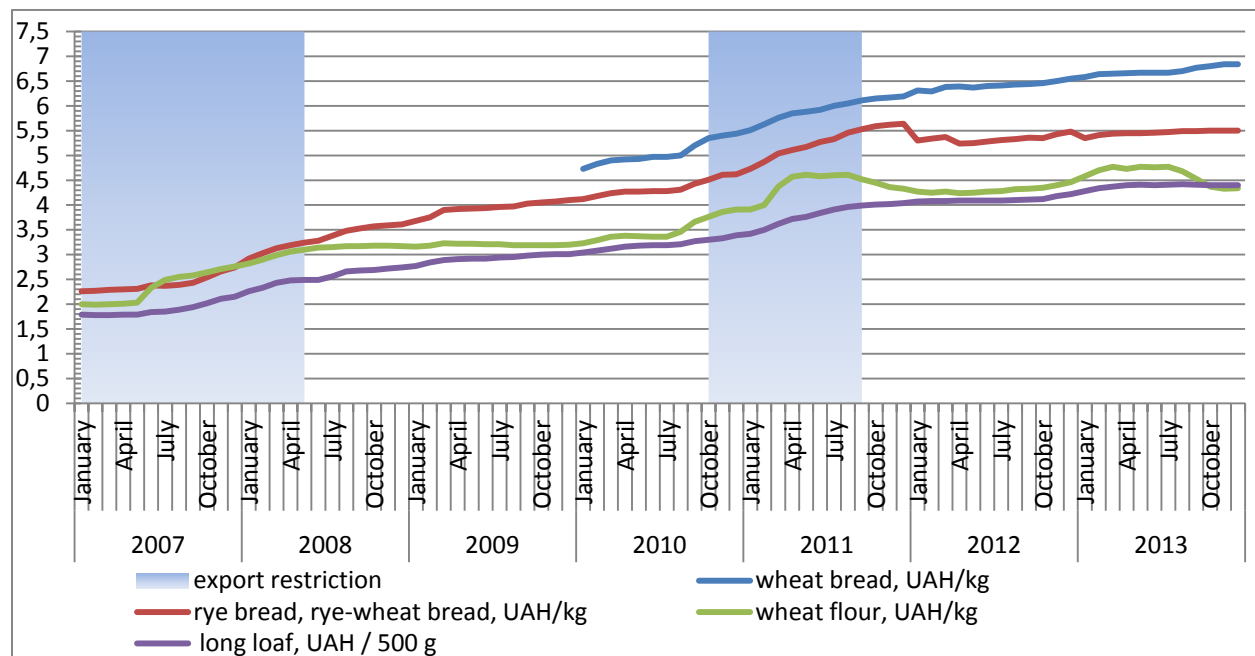
Source: APK-Inform (2013), HGCA (2014)

⁴ Average numbers based on the grain balances developed by the working group of the Ministry of Economic Development and Trade of Ukraine.

Before analysing the effect of trade restrictions, the relationship between domestic and international grain prices needs to be inspected. In this study, we use soft wheat prices (class 1) FOB Rouen as indicator of a world market price. As shown by Figure 1, Ukrainian FOB prices and Rouen prices go along quite tight. Obviously, Ukraine is deeply integrated into the global agricultural markets and has to compete with other suppliers on the global market. Producer prices (EXW) also follow spikes and drops observed on the world market but they are not so pronounced as on the world market. The difference between producer prices and export prices can be partly explained by domestic transport and handling costs. The larger decoupling of Ukrainian prices from international wheat markets during times of export restrictions will be discussed more in detail further below.

One important claim for the introduction of export restrictions has been the concern of food security and food price inflation. Therefore, we compare consumer prices of different processed grain products between 2007 and 2013. As displayed by Figure 2, all bread prices follow an upward trend, although the implementation of the export restrictions should theoretically lead to the excess supply of wheat on domestic market and thus lower prices for Ukrainian consumers. But to explain rising bread prices despite the export restriction, additional research has to be done. One of the reasons might be the behaviour of traders, if they decide to keep grain in storages and to wait for better prices. Furthermore, bread prices are regulated by government policies and, thus, do not simply reflect market signals. Figures in Table 1 indicate that in marketing years 2007/08-2008/09 and 2010/11-2011/12 stocks increased significantly.

Figure 2: Average consumer prices for flour and bread in Ukraine



Source: State Statistics Service of Ukraine

Jones and Kwiecinski (2010) analyse the impacts of the short-term restrictive measures of 10 different countries over the period 2006-2008 on the trade flows in and out of the domestic market to evaluate their effectiveness in meeting stated policy objectives. They found that by implementing grain quotas Ukraine limited export volumes but was not able to insulate the domestic market from the world price increases. Thus, consumers had to face rising prices while producers could not benefit from rising world prices.

Goetz et al. (2013) investigate the influence of the export restrictions on market uncertainty in Ukraine. They conclude that instead of decreasing market uncertainty multiple governmental interferences have led to the increased market uncertainty and additional price volatility on the Ukrainian wheat market. Their findings are also supported by Liapis (2013) who suggests that frequent temporary measures not only contribute to market

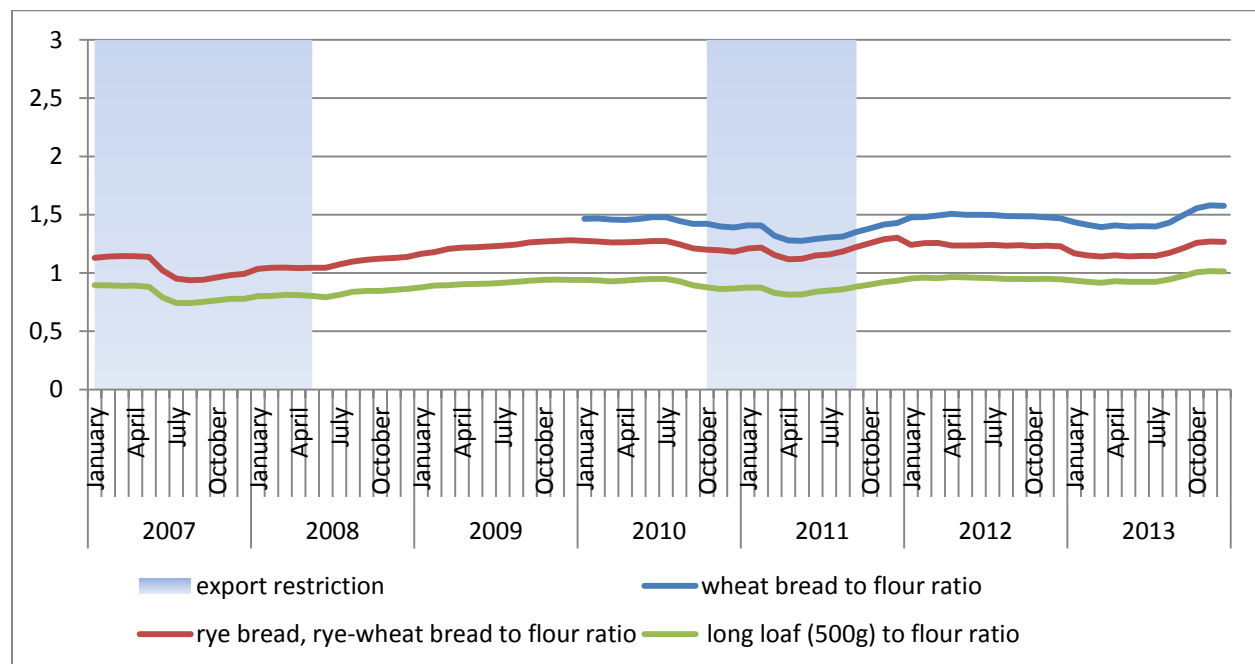
instability both in the domestic and international markets but also “raise concerns about supplier reliability in import dependent countries that may last long beyond the duration of the policy”.

Mitra and Josling (2009) show that export restrictions lead to a decrease in welfare, both in exporting and importing countries in the long as well as in the short run. The authors offer alternative measures to achieve food security, namely: raise agricultural production, use innovative supply strategies, implement domestic demand management measures, make bilateral, regional and multilateral negotiations more effective and introduce, so called, “exporters’ code” (Mitra and Josling, 2009).

Another reason for a less than theoretically expected price drop due to export restrictions might be that the middlemen (e.g. large mills) get the surplus. Djuric et al. (2012) find such an effect for Serbia. Wheat flour is not the only component in the cost structure of bread, it accounts for 40-47% of all costs⁵. Thus, increasing prices for other components while flour prices remain relatively stable may lead to higher bread prices. But Figure 2 reveals that the flour price also follows an upward trend. Another reason for the growing bread and flour prices despite the export restrictions could have been governmental purchases of wheat to state reserve. But the amount of purchases seems to be relatively small to affect the market. According to Agrarian Fund of Ukraine the governmental purchases of wheat equalled 772 thousand tons, 866 thousand tons, 624 thousand tons, and 773 thousand tons in the years 2010 to 2013, which represents approximately 4 per cent of the quantity produced.

To check whether the price increase was caused mainly by food price inflation or not, we calculated bread-to-flour price ratios. The development of this ratio presented in Figure 3 reveals that during the period of export restrictions this ratio decreased. But whether this decrease is statistically significant, cannot be finally concluded. It also tells us that the prices for flour increased to a larger extent than bread prices.

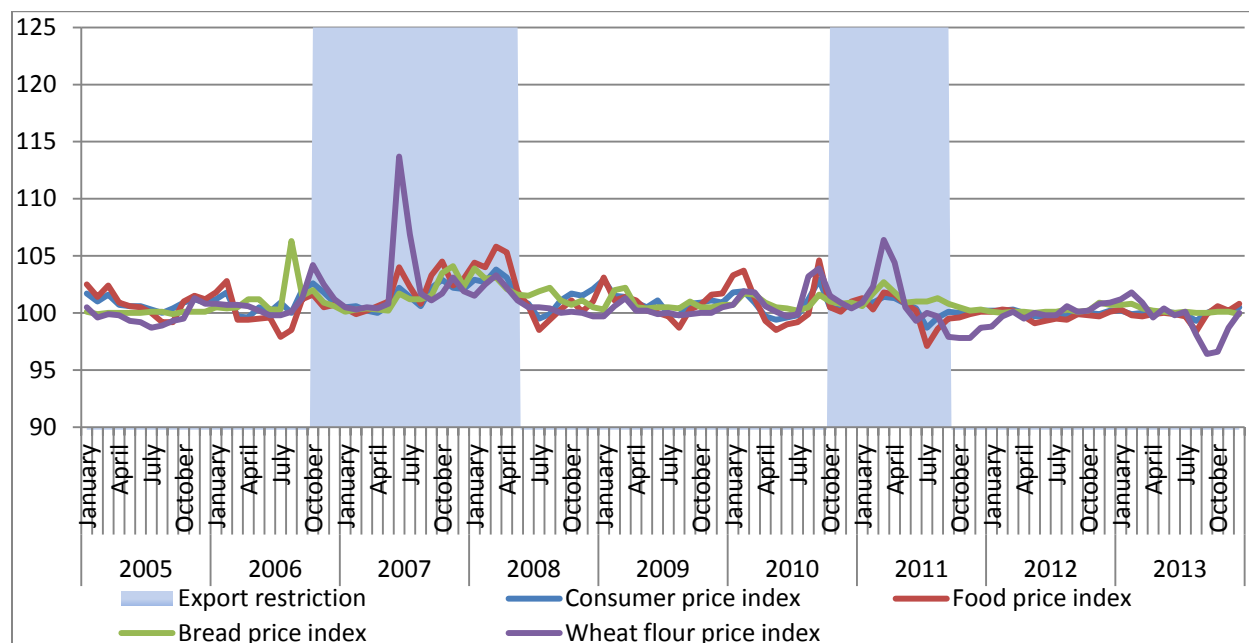
Figure 3: Bread-to-flour price ratio in Ukraine



Source: State Statistics Service of Ukraine

⁵ http://ukrhliprom.org.ua/ua/novini/richnij_zvit_2011.html, 2011

Figure 4: Price indices (monthly change) during 2005-2013 in Ukraine



Source: State Statistics Service of Ukraine

1.2 Objectives of Ukrainian agricultural policy

Laws and state programmes regulating the Ukrainian grain sector are framed by overarching goals of the agricultural policy. The most recent programmes are:

- 2004 Law of Ukraine on state support of agriculture of Ukraine;
- Law of Ukraine on grains and grain market in Ukraine;
- Resolution of the Cabinet of Ministers of Ukraine "On approval of the state targeted program for development of the Ukrainian countryside up to 2015";
- State program of the economic and social development of Ukraine for 2012 and main directions of development for 2013 and 2014;
- State program for stimulation of economic development for 2013-2014.

These laws and programmes set out a number of goals which agricultural policy should serve:

- Ensuring food security,
- Increase in production and export of grains,
- Optimisation of the structure and efficiency of grain production
- Price stability on the food market, and
- Improvement of marketing infrastructure for agricultural products.

A more detailed description of the laws is provided in Annex 2.

1.3 Description of grain export policy measures

Currently, grain export in Ukraine is more predictable due to the agreed amount of export in the Memorandum of Understanding. Previously the government applied different ad hoc export policy measures: Export quotas, export taxes, and export licensing. Another mechanism of grain market regulation is price intervention in the grain sector. The Agrarian Fund purchases grain for the state intervention fund and also provides grain pledge loans. Furthermore, the Agrarian Fund sells flour at defined prices to authorized bakeries to maintain low bread prices for "socially important" types of bread (OECD, 2013).

Most recent trade restrictions, except export duties, belong to the group of non-tariff trade measures. According to UNCTAD, “non-tariff measures are generally defined as policy measures other than ordinary customs tariffs that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both” (UNCTAD/DITC/TAB/2009/3). In what follows, we briefly summarise the various export policies and other requirements applied by the Ukrainian government over the last years. A full table with all measures and amendments is presented in Annex 1.

Ad hoc measures

Export licensing was introduced for wheat and wheat-rye mix in September 2006 and was into force until the end of December 2006.

Grain export quotas were introduced in October 2006 and lasted, with some short breaks until May 2008. Export quotas were introduced again in October 2010 and lasted until the end of May 2011. In June, quotas were substituted by export taxes which were in force until mid-October 2011. Since October 10, 2011 export has been regulated by the informal agreement (MoU) between the government and grain traders.

Ukrainian government, following the abolition of export quotas, introduced export duties in July 2011 for wheat at the level of 9 % (but not less than 17 EUR/ton), for barley at 14 % (but not less than 23 EUR/ton) and for maize at 12% (but not less than 20 EUR/ton). The duties were planned to last until end of December 2011 but were abolished already earlier on October 7, 2011.

Since export duties imposed at the beginning of the season seriously diminished the rate of shipment of grain, Ukraine could not realize its export potential fully and export of wheat in 2011 amounted to 4.1 million tons (UCAB, 2012). In 2012, export of wheat was more than two times larger than in 2011 (8.7 million tons). During 2013, Ukraine exported 7.8 million tons of wheat. During the first four months of 2014 Ukraine exported 1.5 million tons of wheat (Ministry of Revenue and Duties of Ukraine; Global Trade Atlas, accessed on 23.07.2014).

Memorandum of Understanding (MoU)

The Memorandum of Understanding is a relatively new regulation mechanism on the grain market of Ukraine. It was first signed between the representatives of grain exporters and producers and the Ministry of Agricultural Policy and Food in October 2011. The levels of grain export mentioned in the MoU are discussed and should be agreed till September of each year, taking into account existing grain stocks and expected grain crop, and might be revised through the marketing year. The MoU enforces the position of grain traders already engaged in international markets but might prevent competition from market entrants.

According to the Memorandum traders must provide the Ministry with data on exported amount of grain every week; the Ministry on a weekly basis provides traders with aggregated data on the exported volumes of grain and informs them how much can be still exported.

If export reached 80% of the “agreed” level, the Ministry could “review” conditions of trade (OECD, 2013). A notification about termination of the grain export should be sent to all exporters not later than two months before its introduction.

For the marketing year 2011/2012, export volume for wheat was restricted to 10.5 million tons. In 2012/2013 MY, export limits were revised several times with a final limit for wheat at 6.6 million tons, 12.4 million tons for maize, and 3.0 million tons for barley. The Memorandum has been signed again for 2013/2014 MY.

VAT reimbursement

The mechanism of VAT taxation and VAT refund is well described by Kuhn and Nivievskyy (IER, 2004). Zero rate VAT is used to avoid double-taxation both in the country of exports and the country of imports. In the cases when VAT on export operation is not refunded, it equals to an ad-valorem tax which has to be paid by the exporter.

The situation on VAT refund in Ukraine varied from year to year as displayed in Table 5:

Table 5: VAT refund rules for grain 2005-2014

Years	VAT regime
2005-2006	VAT refund regime was in force but there were problems with the actual payments to the traders (reported considerable VAT refund arrears)
August 2006	Discussions about stopping the reimbursement of VAT
2006-2008	VAT reimbursement regime is in force, but there are payment delays and payments made fractionally
February 2009- December 2009	The VAT was returned not in money form but in the form of grain from the Agrarian Fund of Ukraine
February 2010	The Agricultural Minister says about resumption of the VAT refund through the Agrarian Fund in the form of grain
May 2010	It is approved that the VAT refund will be carried out through issue of domestic treasury bonds but the issue took place only in September 2010
Since July 1, 2011	Grain export have been exempted from VAT until January 1, 2014
October 20, 2011	0% VAT approved by the Verkhovna Rada (Parliament) of Ukraine, meaning that VAT refund regime comes into force
November 4, 2011	President vetoed the Law on 0% tax adopted in October, so the previous regime of exemption from VAT came into force again
December 19, 2013	The Law on Amendments to the Tax Code of Ukraine regarding several taxes № 713-VII of 19.12.2013 came into force on January 1, 2014. According to this law the VAT has to be reimbursed since January 1, 2014 if the grain is exported by grain producers, produced at the lands which they own or permanently use at the date of the export or if the grain is exported by the companies which bought the grain directly from such grain producers.
March 27, 2014	The Law of Ukraine on Prevention of the Financial Disaster and Creation conditions for Economic Growth in Ukraine_№ 1166-VII says that temporarily, till October 1, 2014, grain export is exempted from VAT, except of the export of grain by agricultural enterprises, produced on the agricultural land that they own or permanently use at the date of the export.

The policy of VAT exemption has a negative impact on producers, because traders decrease their purchasing prices. Traders purchase the goods from producers with VAT, though it cannot be deducted due to absence of taxable revenue, in this way VAT increases the goods cost (Otten, 2012).

Certification

To be able to export grain from Ukraine traders have to provide several certificates. The most important is the Phytosanitary certificate (State Veterinary and Phytosanitary Service of Ukraine) which is regulated by the Law #3348-XII "On the Plant Quarantine" of 30.06.1993. The procedure of issuance of the phytosanitary certificate was approved by the Decree #705 of the Cabinet of Ministers of Ukraine on 12.05.2007. The decision about granting the certificate may take up to 5 days, the certificate is valid for 14 days.

The Quarantine Certificate (State Veterinary and Phytosanitary Service of Ukraine) is relevant for domestic movement of grain and is regulated by the Law #3348-XII "On the Plant Quarantine" of 30.06.1993. The procedure of issuance of the quarantine certificate was approved by the Decree #705 of the Cabinet of Ministers of Ukraine on 12.05.2007. The decision about granting the certificate may take up to 5 days, the certificate is valid for 14 days.

This certificate is obligatory when the parcel was transported from the zones where the presence of pests under quarantine control is declared only.

Phytosanitary and quarantine rules were inherited from the USSR and then changed, so they are in force for a long time. On 23.08.2005, the Ministry of Agricultural Policy of Ukraine issued the Order #414 with “The rules of import, transportation within the country, transit, export, processing and trade of the goods under quarantine control”.

- 1) Veterinary certificate for fodder grain (State Veterinary and Phytosanitary Service of Ukraine) falls under regulation of the Article 32, Chapter IV and Chapter XII of Law of Ukraine #2498-XII “On Veterinary Medicine” of 25.06.1992. The procedure of issuance of the veterinary certificate was approved by the Order #85 of the State Committee of Veterinary Medicine of Ukraine on 13.04.2009. The decision about granting the certificate may take up to one month. It should be issued not earlier than 72 hours before loading the goods into transport for export.
- 2) Certificate of use of pesticides and agricultural chemicals in agricultural products and raw materials of plant origin (State Veterinary and Phytosanitary Service of Ukraine) is regulated by the Law of Ukraine # 180-XIV of 14.10.1998 “On Plant Protection”. The procedure of issuance of the certificate is regulated by the Decree #1378 of the Cabinet of Ministers of Ukraine adopted on 28.12.2011. The decision about granting the certificate may take up to 10 days.

Until recently grain traders also had to provide quality certificate for grain and products processed of it. The decision about granting the certificate could take up to 3 days. The quality check of grain was made at least twice: once at the elevator before loading for transportation to the port and the second time during custom clearance when re-loaded to the ship. Moreover, if one grain parcel was transported to the port by two trucks, there should be two certificates - one for each vehicle.

Certificate of the storage services for grain and products of its processing was also recently abolished. This procedure had to be fulfilled each year, although market players lobbied to make it for unrestricted period of time.

Abolishment of an obligatory grain certification allows grain producers and traders to save costs during the transaction and decreases incentives for corruption. This is an important step in facilitation of the grain trade since it decreases waiting time of the rail-cars and other transport; that makes the use of transport more efficient. Before the abolition of those certificates Ukrainian Grain Association reported that according to the data of Ukrzaliznytsya, a grain rail-car was on the way only 15 % of the time, the rest of the time it was either loaded or unloaded or was waiting for the documents. Moreover, 50 % of the idle time was due to the delayed issue of the grain quality certificate⁶.

2 Theoretical analysis

Welfare analysis of agricultural policy shows the changes in welfare measures of the stakeholders, like producers, consumers, and taxpayers. Welfare measures can be used to assess the effects of a policy or to compare different policy instruments. Using social welfare analysis, we will show the effect of and compare across different policy instruments on producers, consumers and the government budget. We use a partial equilibrium approach to show the effect of export policies on the wheat market, but we do not consider the consequences for other markets. It is true that export restrictions might also indirectly affect factor markets (e.g. labour, land, transportation services, etc.) as well as other agricultural markets (e.g. oilseeds, fattening) but these effects and interactions between the markets are ignored in partial equilibrium setting (Tirole, 1994).

Kuznetsova (2007) notes that the impact of the export restrictions on the economy will be different depending on the “model assumptions” such as small or large country case, long or short term effect of the observed restrictions, static or dynamic framework and exchange rate regime.

In this paper we will present short-term effects of export taxes, export quotas and VAT reimbursement policies for both scenarios: Assumption of a ‘large country’ with effects on the formation of world market prices and the

⁶ <http://latifundist.com/novosti/43795-vnutrennyaya-sertifikatsiya-zerna-znachitelno-utrudnyaet-logistiku--ekspert>

assumption of a ‘small country’ without effects on world market prices. The practical relevance of the assumption might differ from period to period and will depend on the import market to be analysed.

Generally, Ukraine’s share on the world wheat market reached sometimes around 10 per cent (in 2008/09). Because the export restrictions were introduced simultaneously by at least two countries of the RUK region, it is hard to distinguish whether disruptions in supply to the world market and subsequent price reactions happened due to restriction in Ukraine or in Russia and Kazakhstan, the other big suppliers of wheat on the world market. For example in 2007/08 MY, both Ukraine and Russia restricted their exports in the form of quotas and taxes, respectively. By the end of that marketing year Kazakhstan introduced an export ban on wheat.

2.1 Export tax

In a case of Ukraine, the export tax was used as a measure to avoid threats to domestic food security. Furthermore, trade taxes were used frequently as an important source of government revenues in the early history of developed countries (Corden, 1997).

Between June and October 2011, the export tax for wheat was implemented as an ad valorem tariff of 9 per cent subject to a minimum amount of EUR 17 per ton. As wheat prices did not fall below EUR 189 during the period of application, the minimum amount has always been surpassed. Therefore, we concentrate on the ad valorem tax below.

Implementing the export tax will reduce export supplies as quantities close to the margin will lose competitiveness on the world market. As a direct consequence domestic supply of wheat will increase. Producers cannot adjust their level of production in the short-run and we assume post-harvest aggregated supply of wheat to be fixed. In this analysis we exclude the cost of storage to illustrate the mechanism how taxes and quota work. The export tax will increase the costs of Ukrainian wheat on the world market, represented by a shift of the export supply curve (ES) to ES’ in Figure 5. As a result Ukrainian wheat exports will fall from Q_w to Q_w' . Whenever demand on international markets (I_d) is not perfectly price elastic (i.e. assuming a large exporter), the world market price will increase from P_w to P_w' . Thus, the tax burden will be distributed between exporters [$(P_w - P_w') * Q_w'$] and international consumers [$(P_w' - P_w) * Q_w'$]. Due to the increased domestic supplies domestic prices will go down up to the point where domestic demand equals supply less exports (Q_d').

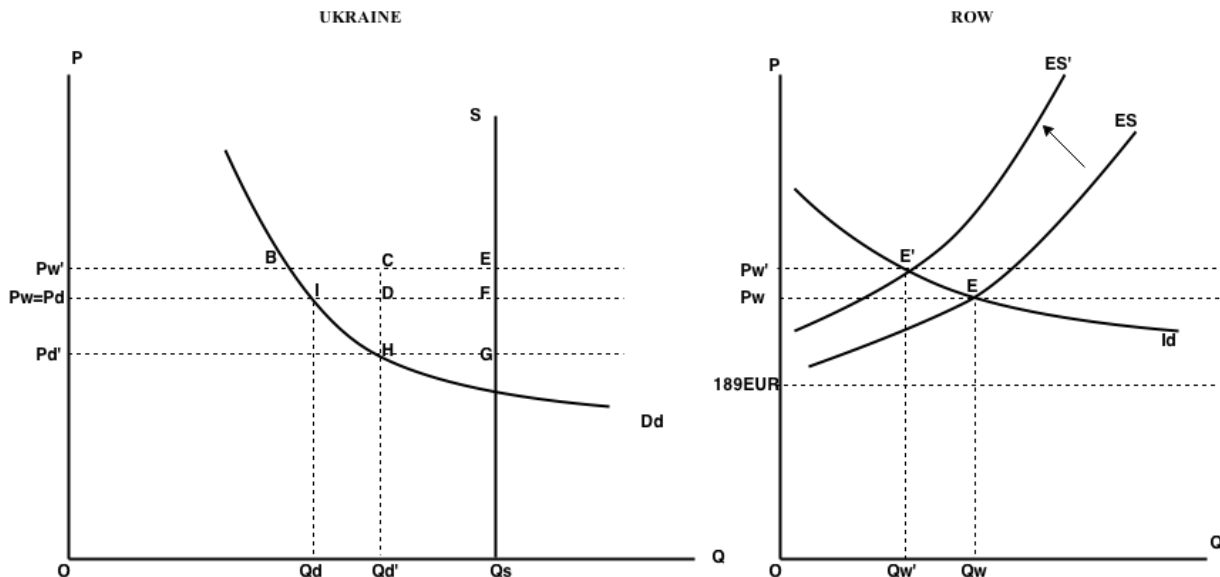


Figure 5: Effects of an export tax on Ukrainian and world market

The new level of exports is the distance $Q_d'Q_s$ and the government gains by collecting export tax revenues described by the rectangle DFGH (before adjustment of the world market price). The gain in domestic consumer

surplus is $P_d'P_dIH$. The loss in domestic producer surplus is P_dFGP_d' . The deadweight loss here is the triangle IDH . If the loss triangle IDH is smaller than the rectangle $DCEF$, which is an incoming transfer from the importing country which partly “pays” the export tax, the exporting country can benefit from the implementation of the export tax. Kuznetsova (2007) shows that the possible income for the exporting country grows the lower the elasticity of supply and demand in the importing country (i.e., rest of the world) and the more elastic supply and demand of the exporting country. To be clear, such a terms of trade effect can only appear in case of a large exporter.

In the medium-term, which is not shown on the Figure 5, the terms of trade will result in another upward price adjustment on the domestic market. However, compared to a free trade scenario the depressed domestic price will reduce incentives for producers and will result in lower wheat production in the future.

From a point of view of a trader an export tax is just like an additional cost of transportation. Thus traders decrease their buying price by the amount of tariff in order to remain competitive at the world market.

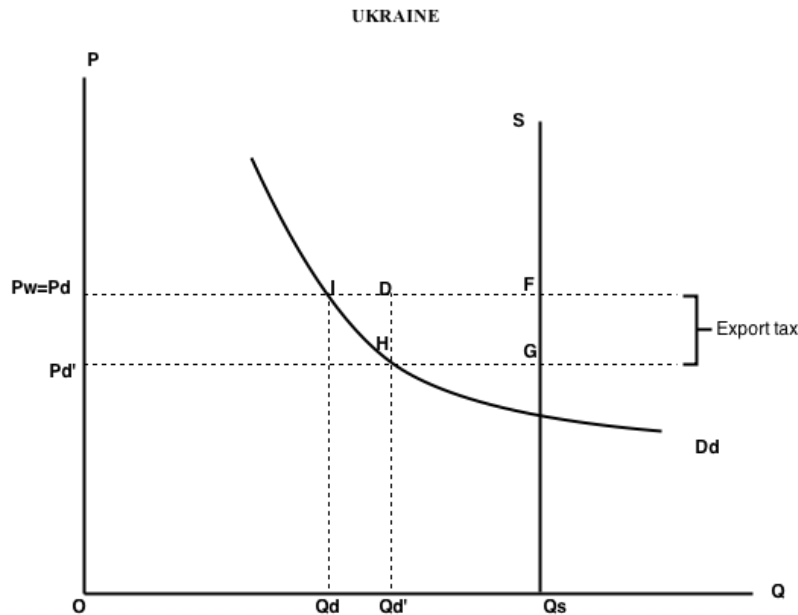


Figure 6: Effects of an export tax on Ukrainian and world market (small country case)

In a small country case after implementation of the export tax the domestic price will go down up to the level of the world market price (P_w) minus export tax. Quantity supplied to the domestic market increases and the level of exports declines by Q_dQ_d' . The government gains by collecting export tax revenue described by the rectangle $DFGH$. The gain in domestic consumer surplus is $P_d'P_dIH$. The loss in domestic producer surplus is P_dFGP_d' . The deadweight loss for the economy is the triangle IDH .

2.2 Export quota

After the introduction of a quota the export is restricted to the amount $Q_d'Q_s$ (equals OQ_w' on the export market). Assuming a short-run perfectly inelastic total supply, the introduction of a binding quota will result in an increased supply to the domestic market by Q_dQ_d' . Subsequently, the domestic price will drop to P_d' resulting in an increase in domestic consumption. The loss in domestic producer revenue is $P_d'P_dBD$, the gain in domestic consumer surplus is $P_d'P_dCD$, and summing up these effects we obtain a net welfare loss DCB on the domestic market.

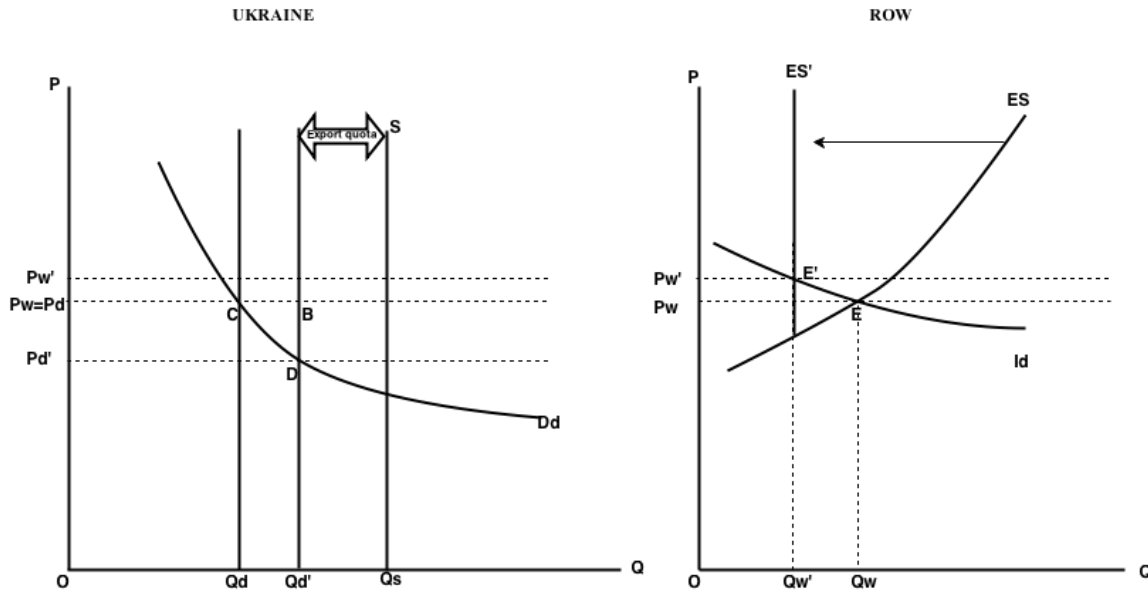


Figure 7: Effects of an export quota on Ukrainian and world market (large country case)

The effect of the export quota on the world market is similar to that of the export taxes. As soon as the quota is fulfilled the export supply curve becomes perfectly price inelastic. In case of a price elastic demand and a binding quota, the world market price will increase if the economy under consideration represents a large exporter. Looking at the distribution of the additional export revenues, exporters or governments benefit depending on the quota's implementation. In case of distribution for free, exporters are the main beneficiaries. The administration of the quota in 2006 was reported to be highly non-transparent, and thus created opportunities for corruption (von Cramon, IER, 2006). In 2010/2011, export quotas were implemented on short notice, and their distribution came along with massive corruption. "The majority of the export licenses were distributed to a state owned company in 2010. Foreign grain trading companies did not receive any export licenses unless they paid bribes and thus experienced high economic losses due to foregone exports" (Götz, Goychuk, 2013).

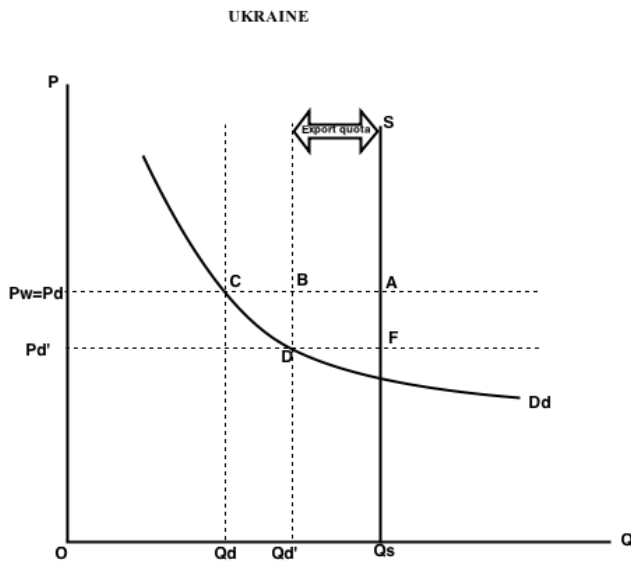


Figure 8: Effects of an export quota on Ukrainian market (small country case)

In the case of a small country the effects are very similar, except the reaction of world market prices. By imposing a quota government restricts export to the distance $Q_d'Q_s$, thus increasing domestic supply. As a result, the domestic price drops to P_d' . Producer surplus decreases by $P_d'P_dAF$. If there is no licensing of exports, then exporters will earn the amount of area DBAF. Finally, consumers gain the surplus indicated by the area $P_d'P_dCD$. Summing up all these effects, results in a deadweight loss of the amount of the triangle DCB.

2.3 VAT reimbursement

In the case of “zero VAT” prices for traders and farms should be equal $P_t = P_f$, because VAT paid is reimbursed afterwards. Here we don't take into account claims that VAT was usually only partially reimbursed.

Let's have a look at the situation when export VAT is not reimbursed. Traders buy grain from farmers with VAT. But since export is exempted of VAT reimbursements, exporters cannot claim for VAT refund which they paid to the farmer. Therefore, to remain competitive on the world market an exporter has to offer a lower price to the farmer.

Below we depict the situation graphically. When there is no reimbursement of VAT, it has the same effect as an ad-valorem export tax. Traders buy less wheat because export becomes less attractive, price paid by the trader goes up to P_t' and the price received by the farmers goes down to P_f' . Given a reimbursement for domestically sold wheat, domestic supply will increase and is expected to result in lower prices for domestic end consumers. However, the export supply curve will shift upwards resulting in a lower exported quantity (e.g. from Q_w to Q_w') which will be sold at a higher price.

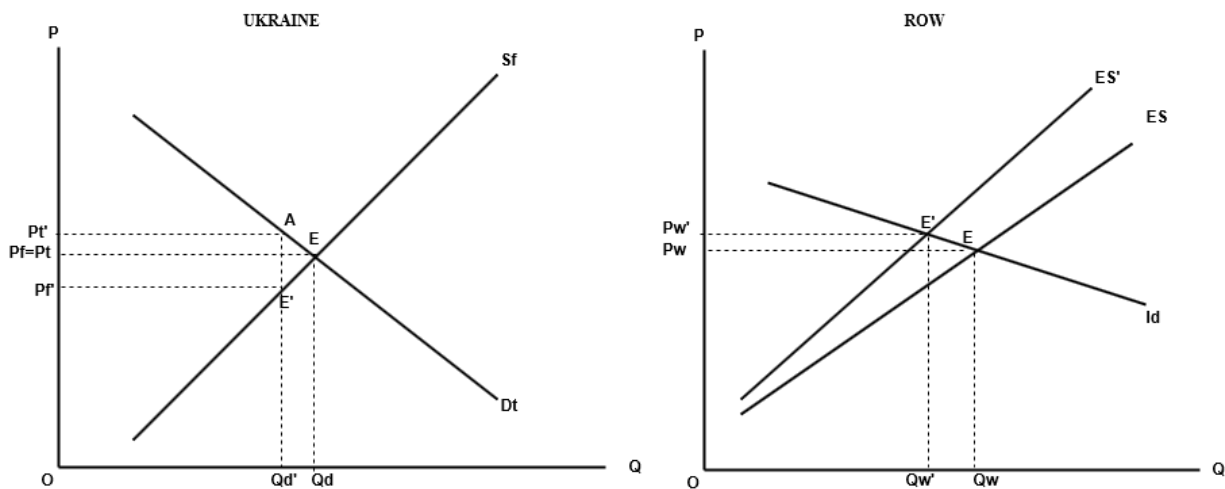


Figure 9: Effects of the exemption of VAT policy (large country case)

The effects on the traders and producers depend on the large country assumption. In case of a small country, the whole burden of the VAT exemption lies on the farmers and they receive a price net off the amount of VAT (Figure 10). If a large country is assumed and the world market price would react, then both traders and farmers share the burden (Figure 9).



Figure 10: Effects of the exemption of VAT policy (small country case)

A short summary of the effects of the different export restrictions in Ukraine is presented in Table 6. Obviously, the observed price development masks at least two effects: The reaction of domestic prices to changes in international quotations and the effect of Ukrainian trade policies on domestic prices. It is almost impossible to determine what would have happened without the trade restriction as counterfactuals are missing. Referring back to the PSCT and CSCT measures published by the OECD suggests that the gap between domestic and international grain prices increased from 2006 to 2008 and from 2010 to 2011 (Table 4).

Table 6: Theoretical and observed effects of export restrictions in Ukraine

Effect on	Theoretical effects			Observed gross effects while measure in place	
	Export quota	Export tax	Non-reimbursed VAT	Export quota	Export tax Non-reimbursed VAT
Producer price	↓	↓	↓	↑	↑
Consumer price	↓	↓	↓	↑ ↓	↑
Quantity exported	↓	↓	↓	↓	↓
World market price	↑	↑	↑	↑	↑

Note: Bread prices rose in absolute levels during the period of export restriction but the ratio of bread to flour prices went down.

3 Results of the empirical analysis

To have a base of comparison for all three measures, we will calculate tax equivalents of the grain market policies applied by the Ukrainian government.

A change in exported quantity resulting from a change of the world market price is determined by the elasticity of export supply η :

$$\eta = - (\Delta Q_x / Q_x) / (\Delta P_w / P_w). \tag{1}$$

Here, Q_x denotes the average monthly export volume in the base period and ΔQ_x is the change of the exported quantity.

In a free market case the world market price is equal to the domestic price plus transaction costs, which are neglected in this analysis.

$$P_w \geq P_d \quad (2)$$

In case of export tariffs in place the world market price should be at least equal to the domestic price times the tariff rate $(1+t)$:

$$P_w' \geq (1+t)P_d \quad (3)$$

Using the Equations 2 and 3 and assuming a strict equality of domestic and world market prices we can derive the following expression:

$$\Delta P_w/P_w = (P_w' - P_w)/P_w = [(1+t)P_d - P_d]/P_d = t \quad (4)$$

To calculate the tariff equivalent of quota, we substitute $\Delta P_w/P_w$ in the first equation by t and we get:

$$\eta = -(\Delta Q_x/Q_x)/t \quad (5)$$

Rearranging (5) gives an expression to calculate the export tariff equivalent for other policy instruments, which we will use for our further analysis.

$$t = -(\Delta Q_x/Q_x)/\eta \quad (6)$$

As our base period we use average export per month in 2009/10 MY which amounts to 763077.50 tons of wheat. We will compare all the measures to this base period by calculating hypothetical tariff equivalents for export quota, export taxes and VAT non-reimbursement policy.

Due to the absence of recent estimates of export supply elasticities for Ukrainian grain export, we based our assumed export elasticity of 0.5 on earlier estimates for the US (Koo, 1984). The value is close to other estimates reported by Hanjotis et al. (1988) for the US. Any other export elasticity will affect the size of the effects in a linear way but not the direction and the comparison across the three measures. Results of a simulation over different elasticity values are presented in Annex 3.

Export quotas were in force since October 2006 till May 2008 and since October 4, 2010 to May 25, 2011 (8 months). Average monthly export of wheat during the quota regime was 105880.7 tons and 262056.8 tons, respectively.

Export tax period started in June 2011 and lasted until October 7, 2011. We took into account only full months and the average monthly export during June-September 2011 was 587440.5 tons.

VAT on exports has not been reimbursed since July 1, 2011 until January 1, 2014. Average monthly export of wheat during this period was 630938.1 tons.

We also calculated a tariff equivalent for VAT non-reimbursement policy for the period after abolition of the export tax, since October 2011 to January 1, 2014. Average monthly export of wheat during this period was 643839.6 tons.

Table 7: Tariff equivalent of export quotas, duties and VAT non-reimbursement policies

Average monthly wheat export in base period (2009/10 MY) [t]	763077.50		
	Q_x [t]	ΔQ_x [t]	t
Quota October 2006- May 2008	105880.65	-657196.85	1.72
Quota October 2010- May 2011	262056.75	-501020.75	1.31
Export tax (simultaneous with cancelled VAT refund)	587440.50	-175637.00	0.46

VAT non-reimbursement July 2011-December 2013	630938.07	-132139.43	0.35
VAT non-reimbursement after abolition of export tax	643839.63	-119237.87	0.31

We compared all policy measures related to wheat export in Ukraine to 2009/10 MY. Our results confirm that quotas in 2006 and in 2010 had more restrictive effect on export than export taxes in 2011. Effects of non-reimbursement of VAT are very close to the effects of export tax in 2011 (at the level of 9 %), but here we have to mention that most of the time these two measures were implemented simultaneously. Therefore, we also calculated tariff equivalent of VAT non-reimbursement excluding the period of export taxes (from October 2011 till January 1, 2014). Because of that we can see slight decline of the tariff equivalent in absolute terms from 0.35 to 0.31.

Some cautionary remarks have to be made. First, our results heavily depend on the choice of the base year to compare with. For any year where exported quantities have been very low, the tariff equivalent might even turn positive. For example, if we consider year 2005 as our reference year, then in the case of export taxes and VAT-non-reimbursement policy, we don't see a negative sign of the tariff equivalent. Such a result does not imply that these policies increased Ukrainian exports from the country. Second, we should also keep in mind that export volumes depend not only on the policy instruments implemented but also on the grain harvest in a specific year. Finally, also macroeconomic conditions might affect domestic and international demand and result, subsequently, in higher or lower than "normal" exports. However, there is no "natural" export quantity of Ukraine. Thus, any base year should ideally represent an average harvest, an average domestic market situation and an average world market situation in the absence of any policy measure restricting exports.

4 Conclusions and discussion

Based on the theoretical analysis it has been shown that although consumers might benefit from export restrictions, overall welfare of the country decreases when export restrictions are introduced. But as we can see in the case of Ukraine, theoretical results have to be put into the context of the situation. In the recent years, domestic prices for wheat, flour and bread kept growing during export restrictions.

There can be several reasons for increasing consumer prices:

- Traders and producers, committed to export, don't expect stable agricultural trade policy. They might keep more grain in stocks and wait for better prices or they find the ways to export instead of supplying to the domestic market.
- Millers and other processors exert their market power and capture the benefits from the export restriction.
- Government buys out (too much) grain to the state reserves and, thus, exaggerates market reactions.

The results of our empirical analysis show that export taxes in 2011 were less distorting than export quotas in 2006-2008 and 2010-2011. During the export tax regime, signals from the world market will be still transmitted on the domestic market and traders can react to them.

With regard to the MoU we can identify the following effects:

- The rules for new entrants are not transparent. New traders might increase competition and might introduce technical progress. Both aspects would potentially reduce margins of traders and could benefit farmers and consumers.
- There is uncertainty regarding the changing limits of the "allowed" export. From the perspective of potential importers of Ukrainian grain, several revisions of the limits are not favourable to the image of Ukraine as a reliable partner. Obviously, statements of the governmental officials that the limit is approaching and there could be measures (like an export ban) implemented, may raise uncertainty on the market and might cause price fluctuations.

Any type of restrictions lead to welfare losses to economy, therefore free trade is the best scenario. While the argument has been often made that consumers will suffer from free trade, we will illustrate such a situation here. Under the assumption of complete absence of barriers to grain exports and homogeneity of Ukrainian grain, exports from Ukraine will increase as soon as prices abroad net of transport costs exceed domestic prices. Increasing export activity will result in increasing domestic prices. Obviously, in the welfare economic setting above farmers will benefit from such a situation and consumers will experience a declining welfare. However, such a static effect neglects a number of adjustment processes. In the short-run, grain will be released from stores and economically less valuable uses of grain will look for substitutes. Subsequently, the additional quantity available on the market will constrain a further increase of prices. At the same time, more expensive Ukrainian grain will be less competitive on the world market. Thus, demand for Ukrainian exports from abroad should decline, too. An important long-run consequence will be the incentive for farmers to increase grain production in the next season. If we relax the assumption of homogenous grain quality, there will be even more opportunities for substitution of higher quality (more expensive) wheat with lower quality wheat which additionally will buffer the transmission of increasing world market prices to the Ukrainian consumers. Thus, price spikes which harm consumers might appear in the short-run but cannot last, under the assumptions stated above, more than a few months. Here the Ukrainian government should focus their policy in helping the most vulnerable consumers directly instead of distorting market mechanisms.

The analysis presented above has to be interpreted carefully. While the ranking of tariff equivalents is unaffected by the underlying assumptions, the size varies conditional on the size of the export supply elasticity and the assumed quantity reduction. The tariff equivalents represent a gross measure and could be further decomposed in effects due to changes in world market prices and the pure policy effect.

5 Policy recommendations

The Ukrainian policy of export restrictions over the last years does not had the desired effect on the consumer prices and does not solve the issue of food security, therefore the government should avoid from implementing ad-hoc measures in future. Every intervention brings uncertainty to the market that might result in increased volatility of prices. As an alternative policy option for the Ukrainian government to respond more efficiently to increasing world market prices in the future it is advised to use consumer-oriented measures for the people in need, for example, direct income transfers.

One example of unintended cross-effects of an unstable agricultural policy is the disincentive to store grain. Price stability could be easily enhanced by a transparent and predictable market environment. Storage fulfils a crucial function in this respect. However, storage only pays if the policy environment is stable and managers are assured of being able building up expectations over the near future.

Restoration of VAT refund will increase farm prices and income, will give an incentive to farmers to increase grain production or invest in more efficient technology. Since the domestic grain consumption is relatively stable, the increased production will lead to increased exports.

In our opinion, the role of the government in the market should be mainly to ensure equal rights to all market participants and eliminate incentives for corruption. It is advised to facilitate trade and do not create additional administrative barriers, like grain quality certification. Especially, government can support market development by increasing transparency. Therefore, it is suggested to the Ukrainian government to put more efforts and resources into the improvement of state agricultural statistics, including the development of a reliable operational monitoring system for grain balance.

The following key recommendations aim at supporting the development of a more competitive grain market while at the same time realising food security for the most vulnerable households:

- 1) Stop the practice of unannounced official and unofficial export restrictions. This could be done by amending the Law of Ukraine 'On State Support to Agriculture'.

- 2) Design and introduce a set of indicators to monitor food security in the country. This could be achieved by drafting the Law of Ukraine 'On Food Security', whereby introduction of export restrictions should be contingent on specific indicators/thresholds.
- 3) Decrease grain marketing costs by reviewing marketing regulations in the grain value chain, from inputs to export markets. This requires a comprehensive approach and revision of the legal framework of functioning seeds, agrichemicals, agrimachinery, grain storage and transport logistics, and bioengineering products markets; this also concerns phytosanitary measures as well as some sanitary measures.
- 4) Design safety nets for the poor to compensate them for bread prices increases; and shift to targeted food support system.

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Law of Ukraine № 37-IV "On Grain and Grain Market in Ukraine" of 04.07.2002

Decree #705 of the Cabinet of Ministers of Ukraine "On some issues of implementation of the Law of Ukraine "On Plant Quarantine" of 12.05.2007

Law of Ukraine #3348-XII "On the Plant Quarantine" of 30.06.1993

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Decree #641 of the Cabinet of Ministers of Ukraine of June 9, 2011

Decree #510 of the Cabinet of Ministers of Ukraine of 11.04.2003

Annex 1: Grain export restrictions in Ukraine during the last decade

Year	Amount/ duration	Regulating Document
September 2006	Export licensing introduced for wheat and wheat-rye mix until December 31, 2006	Decree of Cabinet of Ministers of Ukraine №1364 of September 28, 2006
October 2006	Export quotas introduced wheat 400 000 tons, maize 600 000 tons, barley 600 000 tons, rye 3 000 tons until December 31, 2006	Decree of Cabinet of Ministers of Ukraine № 1418 of October 11, 2006
December 2006	New quotas for Jan-June 2007	Decree of Cabinet of Ministers of Ukraine № 1852 of December 29, 2006
February 2007	New quotas until June 2007 wheat reduced to 228 000 tons, maize 30 000 tons, barley 606 000 tons	Decree of Cabinet of Ministers of Ukraine N 185 of February 13, 2007
February 2007	Quotas cancelled for maize and barley	Decree of Cabinet of Ministers of Ukraine N 290 of February 22, 2007
May 2007	Quotas cancelled for wheat	Decree of Cabinet of Ministers of Ukraine N 748 of May 16, 2007
June 2007	Quotas re-introduced for Jan-Oct 07 wheat 3 000 tons, maize 3 000 tons, barley 3 000 tons	Decree of Cabinet of Ministers of Ukraine N 844 of June 20, 2007
September-October 2007	Quota regime extended to end 2007	Decree of Cabinet of Ministers of Ukraine N 1179 of September 26, 2007 Decree of Cabinet of Ministers of Ukraine N 1287 of October 31, 2007
December 2007	Quotas announced for Jan-March 2008, substantially raised wheat 200 000 tons, maize 600 000 tons, barley 400 000 tons	Decree of Cabinet of Ministers of Ukraine N 1411 of December 29, 2007
March 2008	Export quotas extended to April for wheat and barley wheat 200 000 tons, barley 400 000 tons	Decree of Cabinet of Ministers of Ukraine N 271 of March 28, 2008
March 2008	Quotas abolished for maize from April (but license required)	Decree of Cabinet of Ministers of Ukraine N 271 of March 28, 2008
April 2008	Quotas for wheat and barley substantially raised (until July 2008) wheat 1 200 000 tons, barley 900 000 tons	Decree of Cabinet of Ministers of Ukraine N 418 of April 23, 2008
May 2008	Quotas and licensing abolished	Decree of Cabinet of Ministers of Ukraine N 470 of May 21, 2008
2009-10 MY (July-August)	Grain policies relatively liberal with no export bans or restrictions	
October 2010	Quotas set for until end-2010 wheat 0.5 mln tons,	Decree of Cabinet of Ministers of Ukraine N 938 of October 4, 2010

	maize 2mln tons, barley 200 000 tons	
December 2010	Wheat 1 mln tons, maize 3 mln tons and barley 200 000 tons extended to 31st of March 2011	Decree of Cabinet of Ministers of Ukraine N 1182 of December 6, 2010
March 2011	Wheat 1 mln tons, maize 5 mln tons and barley 200 000 tons extended quota for all grains to until end of June 2011	Decree of Cabinet of Ministers of Ukraine N 337 of March 30, 2011
April 2011	Quotas cancelled for maize	Decree of Cabinet of Ministers of Ukraine N 463 of April 27, 2011
May 2011	Quotas abolished for wheat and barley	Decree of Cabinet of Ministers of Ukraine N 566 of May 25, 2011
June 2011	Introduced export taxes until January 1, 2012 Wheat – 9% but not less than EUR 17/ton Barley – 14% but not less than EUR 23/ton Maize – 12% but not less than EUR 20/ton	Law of Ukraine № 3387-VI “On amendments to the Tax Code of Ukraine and the rates of export duties on certain cereals” of 19.05.2011
October 2011	Export taxes abolished for wheat and maize but remain effective for barley	Law of Ukraine № 3906-17 On Amending the Law of Ukraine "On Amendments to the Tax Code of Ukraine and the rates of export duties on certain cereals" of 07.10.2011
October 2011	MoU between Government and grain traders signed, valid until July 1, 2012 regulating export volumes Wheat – 10.5 mln tons Maize – 10.5 mln tons Barley – 3.5 mln tons Rye – 40 000 tons	Memorandum of Understanding on Grain Exports of October 10, 2011
September 2012	MoU between Government and traders extended for 2012/2013 MY Wheat – 4 mln tons (limit increased to 6.6 mln tons) Maize – 12.4 mln tons Barley – 3 mln tons	Amendments to MoU of 31.07.2012 Annex to Memorandum of Understanding on Grain Exports of September 3, 2012
2013	MoU between Government and grain exporters signed for 2013/14 MY	Memorandum of Understanding on Grain Exports of June 19, 2013

Annex 2: Description of laws regulating grain market

Law of Ukraine on Grains and grain market in Ukraine

Purposes

- ensuring food security;
- ensuring favourable investment, credit, tax and customs policy for the formation of the grain market;
- optimization of the structure and efficiency of grain production;
- ensure that the grain market is functioning on the basis of a combination of competition and government regulation to balance the interests of business and the state;
- state control over the quality of the grain, its products and high-quality seeds;
- stabilize the grain market;
- increase the export potential of the grain market;
- implementing government mortgage purchases;
- implementing state agricultural intervention;
- determine the order of export and import of grain and its products according to international treaties.

How the goals will be achieved

Cabinet of Ministers of Ukraine regulates the grain market through:

- government mortgage purchases;
- formation of government food grain reserves;
- funding for the Agrarian Fund;
- certification services to store grain and its products;
- pricing on the grain market and risk insurance to the subjects on the grain market;
- mechanism of export and import of grain and its products under international agreements;
- monitoring of the grain that is stored and also grain that is stored in private or leased granaries;
- monitoring of the grain market;
- customs and tariff policy;
- development and refinement of the grain balances;
- funding for research and plant breeding and seed production;
- financial support to seed producers, research institutions;
- partial compensation to agricultural producers for purchased seed of high reproduction;
- forward purchases to the state grain reserves;
- imposition of temporary price controls;
- providing temporary fiscal subsidies.

Resolution of the Cabinet of Ministers of Ukraine "On Approval of the State Targeted Program for Development of the Ukrainian Countryside up to 2015"

Purposes

The aims of the Program are creation of favorable conditions for solving complex social problems of rural areas and rural development, creating highly competitive agricultural sector in domestic and foreign markets, food security, increase in income of the rural population, conservation Ukrainian peasantry as a carrier of cultural identity and spirituality.

State program of the economic and social development of Ukraine for 2012 and main directions of development for 2013 and 2014

Purposes

- create a more suitable environment for doing business by establishing the rule of law in practice, reducing state intervention in the economy, improve the tax system, establish public-private partnerships and create effective incentives for investors;

- competitiveness of domestic goods and services, increase their exports and create opportunities for import substitution.

The following tasks need to perform for the development of agriculture, forestry and food security:

- create conditions for rural and agricultural development through the implementation of the State target program for development of Ukrainian village until 2015;
- ensure price stability in the food market and ensure food security through the formation of the state intervention fund by the Agrarian Fund;
- increase of competitive livestock production by stimulating the construction and repair of livestock farms and complexes, animal feed manufacturers by partial compensation for the cost of such facilities, payment of budget grants for the sold milk, cheap credits, compensation for purchasing milking machines;
- technical and technological re-equipment of agriculture, including the provision of state support to agricultural service cooperatives to purchase agricultural machinery and equipment of Ukrainian production;
- geographical expansion of markets for agricultural products.

State program for stimulation of economics development for 2013-2014

The main problems to deal with in the years 2013 - 2014:

- outdated equipment in the agricultural sector and non-compliance of the agricultural enterprises with agri-environmental norms;
- underdeveloped sales infrastructure for agricultural products;
- lack of long-term loans at reasonable interest rates.

The tasks for the years 2013 -2014:

- formation of positive long-term expectations of producers by maintaining price stability on key agricultural markets;
- increase in exports of agricultural products and foodstuffs;
- promotion of innovative technologies in crop production with the aim of import substitution;
- state financial support and mechanism to encourage the purchase of agricultural machinery of Ukrainian production for the formation of modern technological base of agricultural enterprises;
- stimulation for domestic producers to introduce innovative technologies through modernization in order to increase production, improve its quality and substitute import.

Annex 3: Simulation of tariff equivalent using different elasticities

	Quota Oct. 2006 - May 2008	Quota Oct. 2010 - May 2011	Export tax (simultaneous with cancelled VAT refund)	VAT non-re- imbursement July 2011 –Dec. 2013	VAT non-re- imbursement after abolition of export tax	
Q_x [t]	105880.65	262056.75	587440.50	630938.07	643839.63	
ΔQ_x [t]	-657196.85	-501020.75	-175637.00	-132139.43	-119237.87	
t	$\eta=0.25$	3.44	2.63	0.92	0.69	0.63
	$\eta=0.5$	1.72	1.31	0.46	0.35	0.31
	$\eta=0.75$	1.15	0.88	0.31	0.23	0.21
	$\eta=1$	0.86	0.66	0.23	0.17	0.16

Note: Calculation based on average monthly wheat export in base period (2009/10 MY) 763077.50 tons.