

Institutional Analysis of Ukraine's Post-Socialist Economic Development

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DEDICATION

I want to dedicate this work to my parents, Oleksandra and Oleksandr Krasnozhon. I will not be where I am now without their help. I also want to dedicate it to my grandparents, Ella Nepomnyaschaya and Leonid Ideliovich, who always wanted me to pursue an academic career. Unfortunately, my grandparents are not here anymore. But I still love you all with my whole heart.

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TABLE OF CONTENTS

	Page
List of Tables.....	vii
List of Figures.....	viii
Abstract.....	ix
1 Introduction to the Institutional Analysis of Ukraine's Post-Socialist Economic Development.....	1
2 Good Bye Lenin: The Political Economy of Ukraine's Post-Socialist Development.....	8
2.1 Introduction.....	8
2.2 The Political Transition.....	11
2.3 The Economic Transition.....	17
2.4 Untold Facts of Ukraine's Transition.....	25
2.5 Conclusion.....	29
3 Institutional Stickiness and Privatization: Evidence from Ukraine.....	34
3.1 Introduction.....	34
3.2 Historical Record of Ukraine's Privatization.....	36
3.3 Ukraine's Private Sector Development.....	44
3.4 Application and Extension of the Regression Theorem of Institutional Stickiness.....	61
3.5 Conclusion.....	64
4 Property Rights and Economic Efficiency: Evidence from Ukraine.....	66
4.1 Introduction.....	66
4.2 Related Literature.....	70
4.3 Property Rights and Agro-Producing Industry in Ukraine.....	74
4.4 Data Sources and Summary Statistics.....	78
4.5 Main Empirical Results.....	80
4.6 Conclusion.....	85
5 Conclusion: Lessons from Ukraine's Post-Socialist Economic Development.....	87
Tables.....	91
Figures.....	98
Appendix	102
References.....	104

LIST OF TABLES

Table	Page
Table 1.1 Indicators of Political Transition in Russia, Ukraine and the Former Soviet Union, 2009.....	91
Table 2.2 Ukraine's Privatization: Distribution by Its Methods, 1994-1998	91
Table 2.2 Ukraine's Private Sector Development, 1994-2008	92
Table 2.3 A Comparative Assessment of Institutional Quality in Ukraine and Russia, 1994-2008.....	92
Table 2.4 Extension of the Regression Theorem of Institutional Stickiness	93
Table 3.1 Ukraine's Agro-Producing Industry, 2005	93
Table 3.2 Profit Margin in Ukraine's Agriculture, 2003-2004.....	94
Table 3.3 Summary Statistics: Private Farms and Cooperatives, 2006	94
Table 3.4 Effect of Governance System on Productive Efficiency, 2006: OLS Estimation Results.....	95
Table 3.5 Technical Efficiency Scores, Private and Cooperative Farms, 2006.....	96
Table 3.6 Effect of Governance System on Productive Efficiency at Province and Product Level: OLS Estimation Results.	96

LIST OF FIGURES

Figure	Page
Figure 1 Real GDP Growth in Post-Socialist Countries, 1997-2008.....	98
Figure 2 Ukraine's Parliament: Distribution of Seats by Ideological Position, 1990-1994.....	99
Figure 3 Ukraine's Public Support of Types of Privatization, 1989-1994.....	99
Figure 4 Ukraine's Public Support of Methods of Privatization, 1989-1994.....	100
Figure 5 Ukraine's Public Support of Land Privatization, 1989-1994.....	100
Figure 6 Ukraine's Public Support of Land Privatization by Area of Residence, 1991-1994.....	101
Figure 7 Map of Ukraine.....	101

ABSTRACT

INSTITUTIONAL ANALYSIS OF UKRAINE'S POST-SOCIALIST ECONOMIC DEVELOPMENT

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The general field of economics is becoming more acceptable to the idea that social institutions have significant impact on sustainable economic development. This dissertation provides original evidence in support of the empirical importance of social institutions and sheds new light on post-socialist development by focusing on Ukraine. Advocates for increasing the role of government in economic development have overlooked the idea that policy effectiveness depends on compatibility between the policy-designed institutions and the underlying indigenous culture. If the policy design disregards the indigenous culture, a mismatch between *de jure* and *de facto* systems of governance results in the economically inefficient institutional lock-in situation. This dissertation demonstrates that policy effectiveness is subjective to the compatibility between the policy change and the underlying social institutions. I also present evidence

that Ukraine has become a consolidating democracy and emerging market economy through self-governance and economic liberalization rather than centralized development planning and totalitarian control over the economy. Chapter One starts by considering the main policy debate about the proper role of government in economic development. This chapter provides a comparative political-economic analysis of institutional development in Ukraine, Russia and other former Soviet Union countries. Chapter Two presents an analysis of Ukraine's privatization to demonstrate that the policy effectiveness is subjective to a social distance between the policy-designed institutions and the indigenous culture. Chapter Three presents an applied microeconomic analysis of the policy effectiveness in the context of Ukraine's agro-producing industry created in a wake of the 1999 Reform. This chapter focuses on the transformation of the property rights regime by examining the policy effectiveness of reform.

1. Introduction to the Institutional Analysis of Ukraine's Post-Socialist Economic Development

Human history teaches us a very important lesson - major economic events tend to tip the scale in the policy debate around the proper role of the government in the society when an economic recession severely affects the well-being of the general public. The Great Depression that triggered the emergence of modern macroeconomic theory dismissed the *laissez faire* economics in favor of Keynesian and led to worldwide prominent domination of the latter until the 1970s. The current economic recession, which is by many accounts considered to be the second largest after the Great Depression, shakes public beliefs about the proper role of the government in the modern society and raises the same old policy debate.

Every academic and policy discussion about the proper role of the government in our society starts by questioning the policy effectiveness. Advocates for increasing the role of government in the economy base their beliefs on a premise that a policy change is more effective than an institutional change in driving sustainable economic development (Jacques, 2009; Acemoglu and Robinson, 2006; Iyigun and Rodrik, 2004; Acemoglu, Johnson, and Robinson, 2004, 2001). They also believe that a centralized system of governance should be superior to self-governance on the grounds of economic efficiency.

Likewise, a policy-designed institution must replace a spontaneous emergent one in every aspect of the modern society because the former is a more effective mechanism of governance in terms of economic performance. Acemoglu, Johnson, and Robinson (2001) demonstrate that exogenous institutions have significant effects on the economic performance of the different countries colonized by Europeans. Acemoglu and Robinson (2006, 2005, and 2004) persistently argue that the *de jure* change in politics leads to a *de facto* change in institutional development. Likewise, Iyigun and Rodrik (2004) write that a modern institutional development is simply an outcome of a policy choice between two options: “policy tinkering” (a policy from a pre-existing status quo) and “institutional reform” (a policy shift towards a new status quo).

However, political scientists and economists have documented that *de facto* changes in endogenous, very often informal, institutions drive the modern political-economic development (Boettke, Coyne, and Leeson, 2008; Easterly, 2006, 2001; Storr, 2006; Glaeser, La Porta, Lopez-de-Silanes, and Shleifer, 2004; Kuran, 2004; Pejovich, 2003; Boettke, 2001; North, 1990; Hayek, 1991, 1973; Weber, 1930). Glaeser et al (2004) find that human capital is the basic source of institutional improvement rather than political institutions. Kuran (2004) and Easterly (2006, 2001) demonstrate that indigenous informal social institutions determine the economic development in Asia and Africa.¹ Furthermore, Boettke, Coyne, and Leeson (2008) develop *the regression theorem of institutional stickiness* to explain the aggregate experience of international political-

¹ The indigenous culture that is a strong predictor of economic preferences of local agents determines the institutional quality development. For instance, two Harvard economists Luttmer and Singhal (2009) find that the indigenous culture remains a very strong predictor of economic behavior among the first-generation of the American immigrants.

economic development. Their main conjecture is that the further the designed institution falls from the indigenous cultural nucleus, the lower its chances of permeating through the native institutional membrane and sticking to the local institutional origins. Thus, the general field of economics becomes more acceptable of the idea that social institutions matter significantly for a sustainable political-economic development.

This dissertation documents the empirical importance of social institutions for economic growth by focusing on Ukraine's post-socialist development experience. In this dissertation, I argue that self-governance and political-economic liberalization are the key institutional factors contributing to the sustainable economic development in Ukraine. Using original quantitative data and evidence from my field work, I show that a *de facto* institutional change rather than a *de jure* policy-designed change drives a democracy consolidation and free market development in the post-socialist country. Ukraine's post-socialist political-economic development also demonstrates that a policy change can be effective only if underlying social institutions support it. Otherwise, a mismatch between a policy-designed formal change and underlying informal institutions creates the inefficient institutional lock-in situations and retards economic progress.

This dissertation consists of three chapters that provide evidence in support of the above-stated hypothesis and arguments. The first chapter starts by considering the main policy debate about the proper role of government in economic development. The demise of the Soviet superpower throughout the 1980s followed by its collapse in 1991 provided

the major historical evidence in support of the *socialism impossibility* theory² that was propagated by the Austrian school of economics (see Boettke, 2001; Lavoie, 1985; Hayek, 1944; and Mises, 1922). However, the former Soviet Union (henceforth, FSU) economies demonstrated a noteworthy discrepancy in their post-socialist development that the unfettered faith in free markets and limited role of government came into question. China's development experience also added more fodder for critics of the classic liberal traditions (Jacques, 2009). On the one hand, the Czech Republic, Hungary, and Poland are the paragons of post-socialist growth-enhancing political-economic liberalization. On the other hand, the heretical examples of Russia, Belarus and Kazakhstan make it hard to defend the unfettered faith in free markets and limited role of government. Moreover, the current economic recession gives more reasons to criticize the economic liberalism because the freest FSU countries such as the Baltic States underwent much harsher economic downturn than their authoritarian counterparts like Russia and Belarus.³ Thus, this chapter provides a comparative political-economic analysis of institutional development in Ukraine, Russia and other FSU countries. Ukraine has the second largest economy among the FSU countries (i.e. in terms of GDP's volume) and the only consolidating democracy among the non-EU FSU countries. Unlike

² This theory states that the socialism is impossible because a rational economic calculation is impractical in the socialist system (Mises, 1920 & 1922). The rational economic calculation does not work in the socialist economy because both private ownership of production means and market price mechanism are absent under the socialism. Mises (1920:105) wrote that "without economic calculation, there can be no economy. Hence, in a socialist state wherein the pursuit of economic calculation is impossible, there can be - in our sense of the term - no economy whatsoever".

³ The Baltic trinity (i.e. Estonia, Latvia, and Lithuania) have the sharpest fall in their GDPs as compared to the first quarter of 2008. While Russia has a 6% drop in GDP and Belarus has a 4% fall in GDP, the Baltic States are experiencing a double-digit fall in GDP with 18% in Latvia, 15.6% in Estonia, and 12.6% in Lithuania. Ukraine is somewhere in between Russia and Lithuania with an 8% decline in GDP (see "No Panic, No Gloom", Economist, May 14, 2009, and IMF World Economic Outlook, April 2009).

in the highly acclaimed economically and politically stable Putin's Russia, the transitional experience of Ukraine demonstrates that a sustainable socialist-capitalist transition does not require the policy trade-off between freedom and prosperity (Cartwright, 2009; Aslund, 2009, 2007; Leeson and Trumbull, 2006; Shleifer and Treisman, 2005). This chapter demonstrates how economic liberalization and the underlying culture of self-governance led to a sustained economic growth and a consolidated democracy.

The second chapter presents two case studies of Ukraine's economic liberalization: privatization of steel and agro-producing industries.⁴ Using public opinion surveys and interviews with main stakeholders, I show that Ukraine's privatization program reflected the underlying social institutions. This chapter demonstrates that the underlying culture facilitated the industrial privatization while certain culturally-based beliefs and preferences of indigenous economic agents retarded the agricultural privatization (see Hay and Shleifer, 1998; Greif et al, 1994; Greif, 1989). Thus, this chapter examines the role that the underlying social institutions play in the institutional change by looking closely at the above-mentioned case studies of economic liberalization. In this chapter I also apply and modify *the regression theorem of institutional stickiness* to analyze the Ukrainian privatization.

⁴ In the United States term *privatization* is often understood as a choice between provision of goods and services by federal and state government companies or private contractors (see Lopez-de-Silanes, Shleifer and Vishny, 1997). However, this dissertation discusses privatization as a sale by government of state-owned capital assets and land to private economic agents as it was introduced by Britain's Thatcher government in the early 1980s (see Megginson and Netter, 2001).

The third chapter presents an applied microeconomic analysis of the policy effectiveness in the context of Ukraine's agro-producing industry. This chapter focuses on the transformation of property rights regime by examining how sensitive the economic performance of a firm is to its institutional ecology. I examine the effect of the policy-designed change of property rights regime on the economic efficiency of Ukrainian agro-producing firms created in a wake of the 1999 Reform. I use original firm-level data from Ukraine's State Statistics Committee and Ukraine's State Registry of Enterprises and Organizations to create a representative sample of Ukraine's agro-producing industry. This chapter speaks to the literature on economics of property rights. This strand of economic research demonstrates conventionally that a properly defined and enforced system of property rights has a positive effect on use and allocation of factor resources whether in the private or common property rights system (Blewett, 1995; Besley, 1995; Ostrom, 1990; Williamson, 1985; Demsetz, 1967; Alchian and Demsetz, 1972). The contractual or the transaction-cost approach to the economic organization that views an individual firm as a sovereign system of governance emphasizes the role of delineated property rights in increasing economic efficiency (Klein and Foss, 2002; Grossman and Hart, 1986; Shleifer, 1998; Williamson, 1991). My findings of significant impact of well-defined governance system on economic efficiency are consistent with this literature. However, I also focus on the exogenous policy-designed shocks to the governance system that is highly relevant to a large number of emerging economies and developing countries. This chapter demonstrates, across a large number of firms and in a representative sample of a national industry, that a reform policy can have long-term

unintended effects on individual economic performance. These findings question efficiency of public policies that implement a fundamental institutional change.

In the conclusion, I want to reiterate that the policy debate over the proper role of the government in the modern society remains at its critical point. Advocates for increasing the role of government in modern society argue that the policy change, rather than the institutional change, drives a sustainable economic development. They justify their argument on the premise of the superiority of a *de jure* governance system over a *de facto* system of self-governance and underlying informal institutions in the terms of economic efficiency. This dissertation demonstrates that the policy effectiveness is subjective to the compatibility between the policy-designed institutions and the underlying social institutions. By focusing on Ukraine's post-socialist economic development, I find that the exogenous policy change leads to the economically inefficient institutional lock-in situation if the policy design disregards the indigenous culture. I also show that self-governance and economic liberalization are the key factors contributing to a successful institutional change. Since the general field of economics becomes more acceptable to the idea that social institutions have significant impact on a sustainable economic development, this dissertation provides original evidence in support of the empirical importance of social institutions and sheds more light on the post-socialist development experience. This dissertation also contributes to the subsequent academic and policy discussion about the proper role of the government in our society.

2. Good Bye Lenin: The Political Economy of Ukraine's Post-Socialist Development

2.1 Introduction

The 1970s was a golden decade for libertarian economists. Keynesian economics was lying in peril after the monetarist counter-revolution led by Milton Friedman and followed by the stagflation in the major industrialized countries in the early 1970s. The rational expectations revolution started by Robert Lucas Jr. finished the intellectual debate by favoring neoclassical economics. When Friedrich von Hayek and Milton Friedman were both honored with the Nobel Prize in Economics, libertarian economists celebrated the rebirth of neoclassical economics and the downfall of Keynesian economics worldwide. The Kennedy-Johnson era of Keynesian economics finally came to an end in the U.S. On the other side of the world, the former Soviet Union (henceforth, the FSU) and its socialist satellite states were in deep economic recession. That remained unnoticed due to the nuclear arms race and the strong stand on secrecy and censorship. The demise of the Soviet superpower throughout the 1980s followed by its collapse in 1991 provided major historical evidence in support of the *socialism impossibility* theory propagated by the Austrian school of economics (see Mises, 1922; Hayek, 1944; Lavoie, 1985; and Boettke, 2001). So it was a general understanding that a main policy issue

concern with the proper role of government in the economy was swept under the carpet by free market economists.

However, human history teaches us a very important lesson - major economic events tend to tip the scale in policy debates when an economic recession severely affects the well-being of the general public. For instance, the Great Depression which triggered the emergence of modern macroeconomic theory dismissed the *laissez faire* economics in favor of Keynesian and led to worldwide prominent domination of the latter until the 1970s. The current economic recession, which many economists consider to be the second largest after the Great Depression, raises the same old policy debate around the proper role of the government in the economy. We can now witness the revival of Keynesian economics. This policy shift has detrimental consequences not only for the nation's well-being but also for individual liberty and private property.

The discrepancy in the economic performance of the FSU countries is mainly responsible for how easily the world political leaders turn to Keynesian macroeconomic policy. The collapse of the FSU fundamentally undermined the socialist approach to the market economy. But the FSU economies demonstrated such a weird discrepancy in their post-socialist transition that we could hardly prove the importance of individual liberty and private property for economic growth. While Poland, Hungary and the Czech Republic are not only the first bastions of democracy and market economy in Eastern Europe, they are also very successful examples of economic liberalization of former socialist states. The heretical examples of Russia, Belarus and Kazakhstan make it hard to defend the unfettered faith in free markets and limited role of government. Moreover,

the current economic recession gives more fodder for the critics of economic liberalism because the freest FSU countries such as the Baltic States underwent much harsher economic downturn than their authoritarian counterparts like Russia and Belarus.

Thus, the free market economics is once again under attack. The best way to win the trite policy debate is to present more nation-wide cases in support of the libertarianism than our counterparts operate with at the present moment. Borrowing a terminology from a field of jurisprudence, we need to present a *prima facie* case. The pool of FSU countries must be explored in greater detail. They were red-flagged by the international development community prematurely and their transitional experience was misrepresented. To start off, this chapter examines Ukraine's post-socialist transition.

Among the FSU countries, Ukraine has the second largest economy (i.e. in terms of GDP's volume). Out of non-EU FSU countries, Ukraine is the only consolidating democracy with a decade of steady economic growth. This chapter mainly compares Ukraine to Russia that is one of the BRICs.⁵ The economists and political scientists tend to admire its recent economic growth and Putin's abilities to rule the country. Ukraine is portrayed as a case study of crony capitalism and corporatist state capture. By examining Ukraine's transition, this chapter demonstrates how economic liberalization leads to a sustained economic growth and a consolidated democracy. Despite the highly acclaimed economically and politically stable Putin's Russia, I want to reiterate the libertarian argument that a trade-off between freedom and prosperity is not acceptable. Unlike

⁵ Jin O'Neil, a head of Global Economic Group at Goldman Sachs, coined the acronym BRIC (i.e. Brazil, Russia, India, and China) to describe a group of fast-growing economies that will dominate the world economy by 2050.

Russia or China, the transitional experience of Ukraine demonstrates that a sustainable socialist-capitalist transition does not require the policy trade-off.

This chapter proceeds as follows. Section 2.2 evaluates the quality of political changes that took place in Ukraine. Section 2.3 examines the institutional quality of Ukraine's economy with an emphasis on steel and agro-producing industries. Section 2.4 describes the key institutional factors that contributed to consolidating democracy and emerging market economy in the former socialist country. Concluding remarks are contained in Section 2.5.

2.2. The Political Transition

Ukraine began its transition without democratic political traditions. Throughout its history, Ukraine witnessed only two isolated cases of democracy. The first democratic state, *Zaporizhska Sich*, was established by the Ukrainian freedom fighters, *Cossacks*, in the Eastern part of Ukraine on the *Khortytsia* Island. Cossacks made several attempts to liberate Ukraine from the Polish-Lithuanian rule, *Rzeczpospolita* (1569-1654). The most successful revolt was the 1648-54 Liberation War followed by the signing of the Pereyaslav treaty (1654). Under the Pereyaslav treaty, the Eastern part of Ukraine, including Kyiv, left *Rzeczpospolita* and joined the Russian empire as an autonomous and constitutional parliamentary state. But the continuous conflict between the Russian monarchy and the Cossacks reached its peak during the reign of Empress Catherine the Second (see Subtelny, 2000). Following her order, Prince Potyomkin led the military operation and destroyed the Cossack army in 1775.

The second democratic period was even shorter. After the 1917 Russian Revolution the Ukrainian nationalists led by the distinguished historian Mykhailo Hrushevsky declared Ukraine's independence from both the Austro-Hungarian and Russian empires and established Ukraine's first president's administration with Professor Hrushevsky as the chief of state. However, the new-born state could not defend its independence against the three waves of Soviet invasion followed by the occupation of Ukraine in 1921 (see Subtelny, 2000). Escaping from the Soviet terror, the government officials, including President Hrushevsky, immigrated to Canada. Conquest (1986) wrote that "Ukraine was to be the first great example of the extension of Soviet rule by force over an independent Eastern European country – recognized as such by Lenin in 1918". The detrimental consequences of the Soviet rule for Ukraine are still underestimated because of the ability of Stalin and the Soviet government to conceal the historical facts. The majority of Sovietologists⁶ continue to treat the terror-famine of 1930-33 as a policy failure of the War Communism rather than an act of genocide⁷ against the Ukrainians. Thus, despite the historical account of the nearly absent democracy and weak rule of law on the territory of Ukraine, the Soviet occupation that lasted for almost three quarters of

⁶ Conquest (1986) and Subtelny (2000) are two of the few historians who consider it as an act of genocide. Boris Pasternak's masterpiece novel, *Doctor Zhivago*, also presents an objective historical account of the Soviet terror in Ukraine.

⁷ I refer to the definition of genocide given in the Article II of the United Nations Convention on the Prevention and Punishment of Genocide, adopted by the General Assembly on 9 December 1948 and ratified by the former USSR in 1954.

the 20th century posed the main problem for Ukraine's smooth transition from autocracy to democracy.⁸

2.2.1. Quality Evaluation of Political Institutions

The political environment has significantly improved since the breakaway from the FSU. Ukraine is free as it has never been before. The Polity Score that measures the level of political freedom (e.g. 0 denotes absolute autocracy and 20 denotes consolidated democracy) was 16.36 for Ukraine and 9.22 for the rest of the FSU countries (Polity IV, 2009). Ordinary Ukrainians enjoy a higher level of political and economic freedom than their FSU's neighbors in Belarus, Moldova and Russia. While all four countries started with the same level of freedom, they moved in different directions. Belarus and Russia slipped into autocracy. Moldova whose GDP per capita is half of Ukraine's level has the communist government and the very weak rule of law. Ukraine is one of the freest countries in the FSU region (Freedom House, 2009).⁹

In order to evaluate Ukraine's political transformation, Table 1.1 presents the main indicators of the political institutional quality for Ukraine, Russia and the FSU. An annual research report "Nations in Transit" released by Freedom House in June 2009 is the primary data source. According to the report, Ukraine's quality of political institutions is above that of the FSU and Russia. Ukraine has a more independent judiciary than Russia and the rest of the FSU. The independence of mass media and the

⁸ Ilya Prizel (1998), political scientist at John Hopkins University, wrote that the Ukrainian elites viewed the independent statehood as a remote, even unattainable possibility, for many years. Ivan Rudnitsky (1963) called Ukraine a "non-historical" nation that failed to develop its own political identity after the centuries of Polish and Russian occupations.

⁹ I use the Freedom House's classification that does not include the Baltic States in the FSU group because they are part of EU. Thus, every mentioning of the FSU states refers to the non-EU FSU states.

development of the civil society are very close to the levels in developed nations. The democratic institutions at both state and province are also of better quality. The electoral process is very transparent and up to democratic standards. The rule of law, the civil and the political rights are much stronger in Ukraine than anywhere else in the FSU. Overall, Table 1.1 shows Ukraine as a free state with a consolidating democracy as compared to non-free and authoritarian Russia and the rest of the FSU.

Nonetheless, Ukraine's political transition does not have an immaculate record. I agree with Ukraineologists that the former President Kuchma's administration gravitated towards Putin's standards of media and political freedom during the 2004 presidential campaign.¹⁰ Kuchma who came into power as a free market democrat in 1994 tarnished his political reputation by curbing media freedom and abusing his political power by controlling the outcome of the 2004 Presidential elections. Unlike Russia, the authoritarian glitch in the Kuchma's administration triggered the Kuchmagate¹¹ scandal followed by the Orange Revolution. Why did the former president Kuchma find himself in the middle of the turmoil? It was a *cascade effect* of the *authoritarian syndrome* among the political leaders of the FSU countries. The long-term iron grip on the political power demonstrated by Belarus' Lukashenka, Russia's Putin, Turkmenistan's Niyazov,

¹⁰ President Kuchma served two terms from 1994 to 2004. Before that he was a prime-minister in 1992.

¹¹ The government pressure against the media freedom associated with the assassination of Georgi Gongadze, a journalist of the internet-based newspaper *Ukrainian Pravda*, triggered a series of public riots in Kyiv, the capital of Ukraine. President Kuchma's security service officer Melnychenko released a tape with a conversation between the former president and his minister of interior Kravchenko where they allegedly planned the murder. However, the parliamentary hearings could not prove the authenticity of the tape. While three murderers who were the former police officers were arrested, prosecuted and incarcerated, the General Procurator could not make the case against the former president because of the lack of evidence.

Kazakhstan's Nazarbaev, and Azerbaijan's Aliev distorted the political self-interest of the former democrat Kuchma.

2.2.2. Unintended Consequences of the 2004 Presidential Elections

In the Federalist #51 James Madison wrote that “if men were angels, no government would be necessary. If angels were to govern men, neither external nor internal controls on government would be necessary. In framing a government which is to be administered by men over men, the great difficulty lies in this: you must first enable the government to control the governed; and in the next place oblige it to control itself. A dependence on the people is, no doubt, the primary control on the government; but experience has taught mankind the necessity of auxiliary precautions.” When most FSU countries exhibited the path dependence in the development of their political institutions without the public expressing discontent, the Kuchma administration decided to secure a power transition from the incumbent president to Viktor Yanukovych by non-democratic means. Yanukovych was the presidential nominee of the *Party of Regions* and the incumbent prime-minister. However, it was the presidential nominee of *Our Ukraine*, Viktor Yushchenko, who capitalized on the Kuchmagate by increasing his constituency in the traditionally pro-Kuchma regions.

Moreover, the rigged 2004 presidential elections had a major consequence on the quality of institutional development in Ukraine. The rigged elections tested the independence of the judiciary branch of power. And the result of the institutional quality test revealed the maturity of the judiciary system not only to Ukrainians but also to the rest of the world. The Supreme Court made one of the most important rulings in its

history when it nullified the election results and called for a run-off.¹² After the additional run-off, Yushchenko won the presidency with 52% of votes while Yanukovych received 44% of votes.¹³ To avoid the executive power abuse in the future, the latest amendment to the Ukrainian constitution separated the political power between the president and the prime-minister so that the former would be responsible for the foreign policy and the latter headed the executive power, and the Cabinet of Ministers took control over domestic policy.¹⁴ The current system of the checks and balances demonstrates the democratic changes in the political environment. Thus, the Kuchmagate and the Orange Revolution revealed certain transitional problems of the institutional nature which were typical for the FSU countries. Then again, those political events just demonstrated that Ukraine had a strong civil society and working separation of powers that all together led to a democratic transition of power.

Thus, Ukraine has the highest quality of political institutions among the non-EU FSU states though its record of political transition is not immaculate. The Ukrainian politics is very competitive with an increasing separation of powers and improving system of checks and balances. Instead of following the Russian model of political transition (i.e. strengthening autocracy), Ukraine is one of the few FSU states that moves

¹² A significant discrepancy between public opinion polls and election results pointed to the rigged elections. *Our Ukraine*'s lawyers contested the election results in the Supreme Court (SCU). The Council of the SCU presided by the honorable judge Yarema made a ruling against the official results based on the presented evidence of several hacker attacks on the server of the Central Election Committee (CVK) (see the decision of the SCU from Jan 20, 2005, [http://www.scourt.gov.ua/clients/vs.nsf/\(SearchV\)?SearchView&Query=2004](http://www.scourt.gov.ua/clients/vs.nsf/(SearchV)?SearchView&Query=2004)). The CVK's representatives provided computer logs showing that the hacker attacks changed the election results in a favor of Yanukovych.

¹³ Source: CVK's website, http://www.cvk.gov.ua/postanovy/2005/p0015_2005.htm.

¹⁴ Source: The Constitution of Ukraine, Ch. V and VI, <http://www.president.gov.ua/en/content/constitution.html>.

towards consolidated democracy. While the Kremlin's policies choked both political and economic competition, Ukrainians enjoy levels of economic and political liberties comparable to those in developed nations. Ukraine has lower living standards in terms of GDP per capita than Russia's. But would you rather have more freedom or more money if you know that more wealth cannot buy you more freedom? More freedom with less money makes you happier than less freedom with more money. Whilst the Russians are eager to trade rising living standards for curbs on the media, rigged elections, and a slide into autocracy¹⁵, the Ukrainians move forward to the living standards of the EU without a trade-off between freedom and prosperity.

2.3. The Economic Transition

The main objective of Ukraine's economic transition was to transform the socialist society into a capitalist one via the economic liberalization policies such as deregulation, privatization, and tariff reductions, etc. Since the private ownership of the means of production is essential for the capitalist economy, privatization was to be the driving force behind the advancement of capitalism. Mises (1944, p.48) wrote that "the essential teaching of liberalism is that social cooperation and the division of labor can be achieved only in a system of private ownership of the means of production, i.e., within a market society, or capitalism. All the other principles of liberalism, democracy, personal freedom of the individual, freedom of speech and of the press, religious tolerance, and peace among the nations are consequences of this basic postulate. They can be realized only within a society based on private property." The purpose of deregulation and other

¹⁵ After 2004 the Kremlin substituted the elections of the local governors for the direct appointment.

types of economic liberalization policies was to secure private property rights and stimulate the private sector development.

The economic transition was initially a tough challenge because Ukraine also began its transition with a weak economy. The weak Ukrainian economy was the result of economic miscalculations under the socialist system. Ukraine completely lost its world-renowned comparative advantage in the production of steel, heavy machinery, jets, and grain. As a part of the FSU economy, it imported grain from Canada and USA.¹⁶ The steel and heavy machinery industries were so outdated and produced low-quality final goods that the Ukrainian products failed to meet the international standards when Ukraine opened to international trade in the early 1990s. The international openness and advent of the market economy exposed the folly of the seven-decade long socialist economic planning. The economic liberalization caused the conversion of numerous assembly lines and sometimes whole factories into scrap metal because they had no potential for international competitiveness. Without privatization, the factories planned and built under the socialist economy would remain in the public sector as the potential “black holes”, sucking in subsidies and other trade-protectionist policies.

The folly of the Soviet central planning also translated in Ukraine’s significant dependence on the rest of the FSU economies. A tendency of producers in one country to be dependent on producers abroad is a typical economic relationship in the modern globalized world. An iPod bought in the US has its multiple parts made in China, Japan,

¹⁶ The FSU has imported grain from USA and Canada since the late 1970s while it has increased the export of oil.

Indonesia, Mexico and etc. However, it is another matter of concern when the business relationship is centrally planned without respect for the market mechanisms of trade and production. In this case, the relationship cannot be sustainable in a market economy because it fails to take into account a basic profit-loss calculation and creates coordination problems. In the early 1990s the three-quarters of final goods production in Ukraine relied on the supply of intermediate goods from the FSU economies, mostly Russia (Paskhaver and Verkhovododa, 2004). Once Ukraine opened to market relations and international trade, its economy went through a deep structural breakdown. The Ukrainian producers realized that the production link to the FSU's economy needed to be changed or broken to survive in the market economy. At that time, the most pressing question was: could the emerging private sector revive the economy after all the damage that the FSU's economic policy has done?

2.3.1. Quality of Economic Institutions after Two Decades of Transition

After almost two decades of the market reforms, everything points to the successful economic transformation. In terms of economic growth, Ukraine has been a fast-growing FSU economy since the late 1990s. In the last decade Ukraine's GDP per capita grew at an average of 8 percent per year (World Development Indicators (WDI), 2009). Consider, for instance, Figure 1 that shows the rates of real GDP growth in the post-Socialist economies between 1997 and 2008. Figure 1 demonstrates how Ukraine's economy has been buoyant since 1999. In the last several years, Ukraine's real GDP grew

at a higher rate than in any other Central and Eastern European country except Russia.¹⁷ Since 1999, Ukraine's real GDP has grown by 32% whereas the real GDPs in Hungary, Poland and the Czech Republic have increased by only 10-15% on average. Moreover, Ukraine's average growth rate of real GDP was higher as compared to that in the transitional economies in the last decade (see Figure 1).

The economic growth of Ukraine is a real value-added production growth unlike a mainly oil-driven economic growth of Russia, Kazakhstan, and Azerbaijan. The industry's value added growth was 5% higher in Ukraine than Russia's and 10% higher than FSU economies' between 1999 and 2007 (WDI, 2009). Ukraine's industrial output is twice as much as its pre-independence level. The steel industry is the fastest growing production sector. The export of crude steel increased from 3 mln tons to 37 mln tons between 1990 and 2008 (State Statistics Committee of Ukraine, 2009) and Ukraine is among the top ten steel-producing countries¹⁸. The agro-producing sector is also a very fast growing industry, making Ukraine one of the major grain exporters. The grain output increased from 38.6 ths tons to 53.2 ths tons between 1991 and 2008 (State Statistics Committee of Ukraine, 2009). Other sectors of the economy also demonstrated a steady growth after the mid-1990s recession.

¹⁷ Even though Russia's average growth rate of real GDP is higher than Ukraine's, the real GDP growth was 3% higher in Ukraine than in Russia and 8% higher than in the FSU economies between 1999 and 2007 (WDI, 2009).

¹⁸ Ukraine's steel industry produces 47% of its output via the Siemens-Martin type of a blast furnace and 49% of steel via the basic oxygen process while the former constitutes just 4% of the world steel output and the latter is respectively 60%. Almost 35% of the world steel is produced via the electric arc furnaces (International Iron and Steel Institute, 2009, <http://www.worldsteel.org>). Despite several "technology modernizations" requests on the behalf of the World Bank, Ukraine retained a technology of an intermediate steel production (i.e. a pig iron via the blast furnace) and became one of its major exporters.

However we should not judge the socialist-capitalist transformation just by the levels of economic growth. In 1968 American Senator Robert Kennedy criticized the conventional economic accountability for treating GDP as a face value of a nation's well-being. His argument is universal and right on the point: GDP does not reflect non-monetary aspects of our lives such as a quality of social, political and some economic institutions. Senator Kennedy said that "GDP did not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our courage, nor our wisdom, nor our devotion to our country. It measures everything, in short, except that which makes life worthwhile, and it can tell us everything about America except why we are proud that we are Americans".

In terms of private sector development, Ukraine has one of the most privatized economies among the FSU countries. According to the WDI (2009), Ukraine's private sector share in GDP is approaching an all-time high of 85%. More than 80% of assets are in private ownership (State Statistics Committee of Ukraine, 2009). All industries, including telecommunications and energy sectors, are deregulated and privatized. On average between 1991 and 2008, Ukraine's infrastructure development was better compared to the rest of the post-socialist economies (EBRD, 2009). Unlike Russia which prefers to create its own international trade organization, Ukraine is open to multilateral

international trade and a member of the World Trade Organization since 2008.¹⁹ The period of outrageous corruption that is typical for all transitional economies is over. EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPs) demonstrated a phenomenal decline in the rate of the “bribe tax”, from 3.1% to 1.5% between 1999 and 2005. It is an unprecedented anti-corruption event in the FSU. Ordinary citizens who are part of the Soviet generations enjoy the unseen economic liberties. Ukraine had a higher than average level of economic freedom than the rest of the post-socialist countries between 1991 and 2008 (Heritage Foundation, 2009). Thus, everything indicates that Ukraine’s private sector has emerged and revived the stagnating FSU economy.

2.3.2. Emergence of Private Sector: Evidence from Steel Industry

Ukraine’s private sector development started in the steel industry, the same sector that produced the first two Ukrainian billionaires, Rinat Akhmetov and Viktor Pinchuk, who were often referred to as oligarchs (see Alslund, 2004; Kravchuk, 2002).²⁰ The rise of the steel industry was an unintended consequence of a strange mix of the economic liberalization reform and the obsolete steel production technologies. Without privatization and deregulation Ukraine’s steel sector would not become the competitive industry it is today. The privatization of the steel industry was very chaotic so that no

¹⁹ The WTO’s Press Release, February 2008, http://www.wto.org/english/news_e/pres08_e/pr511_e.htm.

²⁰ Rinat Akhmetov is a CEO of Donetsk-based international corporation, “System Capital Management” (SCM). Viktor Pinchuk is a CEO of Dnipropetrovsk-based international corporation, “Interpipe”. The total net worth of both corporations was around \$10 billion in 2008. The regional economies of Donetsk and Dnipropetrovsk produce, on average, 83% of iron ore, 70% of coal and 80% of steel from Ukraine’s total industrial output.

agent exited the privatization with a possession of the complete production cycle.²¹ Nonetheless, the State Property Fund did not register any case of privatization of the complete steel production cycle. Likewise, the NGOs did not report any case.²² Thus, the privatization created a competitive industry within the domestic economy. The real economic calculation and coordination emerged in the FSU's "commanding height" of the industrial sector.

The World Bank made several policy recommendations to the Kuchma's administration with the emphasis on the urgency of modernizing the steel industry to meet international standards. However, President Kuchma who was a former factory director himself could not or did not want to find a consensus among the steel producers regarding the proposed reform. On the other side, the new private owners opposed any modernization of technology. In the late 1990s the world-wide race for more energy-efficient production of steel created a shortage of low-tech intermediate steel products. Surprisingly, the technological backwardness provided the competitive edge of Ukrainian steel in the international market. In capitalizing on domestically-produced coal²³ and iron ore, Ukraine emerged as one of the major steel exporters.²⁴ The phenomenon of

²¹ The full cycle would require the ownership of steel mill, iron ore and coal mines. An iron ore is a main raw material where a coal is the primary energy source as well as a source of carbon used for mixing with iron ore to produce steel. And the ownership of steel mill completes the production cycle.

²² One of the Ukrainian NGOs, Kyiv-based "Center for Economic Development", that hosts two architects of the industrial privatization, has followed the private sector development since 1991 and has posted the annual reports on the web. Source: <http://c-e-d.info/>.

²³ The steel industry received subsidies for the purchase of the domestic coal. According to my calculations, the subsidy's share of the coal's wholesale price decreased from 28% to 10% between 1996 and 2006.

²⁴ Though the government played a minimal role in the rebounding of the steel industry, I should mention that premier-minister Yushchenko implemented an expansionary fiscal policy that reduced a tax burden in half for the period of 1999-2001. The policy was associated with the output growth in the steel industry.

Ukraine's economy was that the low-tech industry became the main source of economic growth after the 1990s recession (Paskhaver et al, 2004:13). The accumulation of large private capital in the steel industry boosted domestic investments in other sectors of the economy. Reaching a 43% share of GDP, the service sector experienced a boom of economic activity in 2004. The construction and real estate sector with a 20% share of GDP reached its peak of economic activity in 2007 before the worldwide crash of housing markets.

2.3.3. Agro-Producing Industry: Why Is It Lagging Behind?

Alike its political transition, Ukraine's economic transition does not have an immaculate record. The agro-processing industry still lags behind in terms of economic institutional development. Ukraine's world-renowned grain industry was the toughest sector to reform because of its economic backwardness and troubled cultural heritage. Marx wrote in *Capital* (Vol. I, p.837) that "the transformation of scattered private property, arising from individual labor, into capitalist private property, is naturally, a process, incomparably more protracted, violent, and difficult, than the transformation of capitalistic private property, already, practically resting on socialized production, into socialized property. In the former case, we had the expropriation of the mass of the people by a few usurpers; in the later, we have the expropriation of a few usurpers by the mass of the people". Marx was wrong on all accounts. The transformation of private land into socialist ownership was neither natural nor peaceful in Ukraine.²⁵ The Soviet

²⁵ Conquest (1986) and Subtelny (2000) provide a full historical account of the Soviet collectivization in Ukraine. Boettke (1992) presents an excellent analysis of the political economy of the Soviet collectivization.

economic policy had negative consequences for Ukraine's farming industry. It created the adverse selection problem because both the 1921-1930 militarized collectivization and the 1930-33 famine-terror fundamentally undermined human capital development in the agro-producing industry. The expropriation of private property and massive extermination of rural dwellers created generations of farmers lacking in entrepreneurship and private ownership.

Moreover, Ukraine's long history of land grabs by foreign empires embedded a fear of land loss either to foreigners or landlords. The cultural heritage translated into a special status of agricultural land among other natural resources: "land is the fundamental national wealth that is under special state protection" (The Constitution of Ukraine, Article 14).²⁶ Ukrainians joke that everyone is a socialist when it comes to agricultural land, but then everyone is an adamant capitalist when it comes to anything else.²⁷ Even though 80% of agricultural land is in private ownership, the deregulation of the agro-producing industry is still incomplete because sale of agricultural land is still an illegal transaction. However, a growing banking sector and a working market of land leases allowed the agro-producing industry, with a 12% share of Ukraine's GDP, to demonstrate a steady output growth in the last several years.

2.4. Untold Facts of Ukraine's Transition

By now a careful reader should know that privatization and the 1990s recession have been and remain to be the major sources of rhetoric about Ukraine's transition

²⁶ The Constitution of Ukraine (1996), Chapter 1, source: a website of the President's administration, <http://www.president.gov.ua/en/content/chapter01.html>.

²⁷ Public opinion polls demonstrate a dominating public disapproval of agricultural land sale (Panina, 2006; Golovakha, 1997).

because some facts of the transition were untold or downplayed. In brief, I present you the untold facts of Ukraine's transition.

The first untold fact is that Ukraine's privatization has served its ultimate purpose. The privatization created one of the largest private sectors in the FSU region. It was not a socially optimal distribution of state property because it increased economic inequality.²⁸ But it was economically efficient because it led to the private sector development and steady economic growth.²⁹ The privatization also created a new social class, the rich oligarchs,³⁰ who use their economic power to influence politics. While Putin is known for controlling the oligarchs and making them work for the general well-being, Aslund (2004, 2001) and Hellman (1998) write that the Ukrainian oligarchs control the state and explore rent-seeking opportunities at the expense of ordinary citizens. If this is true, then how do we explain how the oligarch-controlled Ukraine is now on its way towards a consolidated democracy and market economy while Russia follows the opposite path?

The second untold fact of Ukraine's transition is that privatization reflected the indigenous culture. A comparative assessment of the privatization bill and survey data shows that the final project closely reflected prevailing public attitudes towards privatization methods (see Paskhaver et al, 2004; Krasnozhon, 2009). What were the reasons for that? First, the contest for the privatization project was very competitive and transparent. The interest-group politics cannot explain why the final privatization project

²⁸ In terms of GINI index, Russia's level of economic inequality is higher than Ukraine's (WDI, 2009).

²⁹ Brown and Earle (2007), Brown, Earle and Telegdy (2006), and Pivovarsky (IMF, 2001) find that a privatization has a positive effect on firm performance in Ukraine.

³⁰ The wealth and power of the Ukrainian oligarchs are not very impressive in the relative terms, if you compare them to the Russian oligarchs or the American billionaires. There are only four Ukrainians in the top 300 of the Forbes' 2008 World's Billionaires Report.

was chosen so that it reflected the popular public opinion rather than the interests of the pressure groups. The oligarchs did not have any influence over the bill because they did not emerge by the time the privatization bill went to the floor in the parliament. Thus, any statement about the oligarch-controlled privatization is a normative one. Second, the Ukrainian government had more degrees of freedom in its choice of reforms than Russia and other FSU countries of the larger international attention so that it avoided the agency problem of exogenously designed reforms. The development community was so engaged in finding the correct institutional mix to promote democracy and market economy in Russia which was unanimously considered as the main political and economic heir of the FSU. Ukraine was left alone for quite some time. Consider, for instance, \$90 billion in foreign aid received by Russia between 1991 and 1999 and \$4 billion in foreign assistance received by Ukraine in the same period of time.³¹ Ukraine also has one of the smallest shares of the foreign direct investments in the FSU region while oil-exporting Azerbaijan, Kazakhstan and Russia receive the lion's share of FDIs.³² Moreover, Ukraine was one of the first FSU countries that rushed into a nuclear disarmament that made it less important for foreign policy of the developed nations. Despite the international recognition of Ukraine as a peaceful post-Soviet state, neither foreign aid nor FDIs

³¹ Even though Russia's population (140 mln) is three times as much as Ukraine's population (45 mln), a difference in the volumes of foreign aid is still tremendous.

³² In the relative terms, Ukraine's economy rebounded and demonstrated a steady growth without a significant share of FDI and foreign aid while Russia and Kazakhstan have slipped into autocracy and curbed economic freedom despite large volumes of FDI and foreign aid.

followed the lead. Even the international attention to the Chernobyl catastrophe³³ did not translate into the proper foreign aid.

The third untold fact of Ukraine's transition is that the economic recovery started in the mid1990s. The official statistical data shows that the deep and prolonged decline in industrial output coincided with high rates of unemployment and inflation till the mid1990s.³⁴ Ukraine's economy reached its trough in 1994 with a 22.4% decline in GDP and then demonstrated signs of recovery throughout the second half of the 1990s (EBRD, 1999).³⁵ The economic rebounding was associated with the start of privatization. In the fourth quarter of 1999 the economy already had a positive rate of growth.

The last fact that is often untold or downplayed is that Ukraine's economy, as a part of the FSU economy, was in a depression since the late 1950s. One of the rare public opinion polls, VCIOM (1988), conducted in the FSU demonstrated public desperation with the Soviet economy. More than half of the respondents considered the economic situation to be critical and another 40% regarded it as unfavorable. Only one per cent said that the economic situation was favorable. Two Soviet economists, Popov and Shmelev

³³ The Chernobyl disaster is referred to the Chernobyl nuclear power plant explosion that took place in Ukraine near the city of Chernobyl in 1986. The nuclear explosion contaminated 15,830 square miles of land and affected up to three millions of people (International Labor Organization, 1995). While the Soviet government did nearly nothing to offset the social and environmental effects of the Chernobyl disaster, Ukraine had to face the Chernobyl cleanup bill on its own. Approximately, one-sixth of the government expenditures went towards the Chernobyl issue (Dyczok, 2000).

³⁴ The official data underestimated the level of economic performance in the 1990s because of the large share of shadow economy. An odd discrepancy among the rate of electricity consumption, output growth, and volume of exports pointed to that. Johnson, Kaufman and Shleifer (1997) estimated Ukraine's shadow economy between 24% and 35% share of GDP between 1990 and 1995. Lacko (1999) found that it was between 37% and 54% for the same period.

³⁵ According to Ukraine's State Statistics Committee, the export of the steel by-product, a scrap metal, increased from 370 thousand tons to 5 million tons (i.e. a fourteen-fold increase) between 1995 and 2000. On average, Ukraine produced 8% of the world scrap metal in that period of time. In the same period GDP per unit of energy use grew from \$1.2 per kgoe to \$1.6 per kgoe (EBRD, 2009).

(1989), provided evidence in support of the public beliefs. They found that the Soviet government had falsified the official economic data since the late 1950s. Since then, the rates of economic growth have fallen constantly and by the middle of the 1980s had dropped almost to zero (Popov and Shmelev, 1989:41).³⁶ Then why was it such a shocker to the international development community to see a post-socialist economy exhausted by several decades of economic miscalculations struggling for its survival instead of following the Washington Consensus's policy prescriptions successfully? The imminent capitalist restructuring of the socialist system followed by the breakaway from the FSU just brought more instability and worsened the prospects of an economic recovery in the short run. "Liberalization, privatization, and stabilization" eventually worked in the long run though not as good as in the Czech Republic or Hungary but not as bad as in Belarus or Turkmenistan. Ukraine has never lost its faith in the unfettered free market and followed its own path of economic development.³⁷

2.5. Conclusion

Many economists and political scientists described Ukraine as a corporatist state where several oligarchic groups used their outrageously enormous economic and political powers to control the state (see Aslund, 2009; Aslund and de Menil, 2004; Kravchuk, 2002; EBRD, 1999; Kubicek, 1999; Hellman, 1998; and Kuzio, 1997). The source of the

³⁶ Similarly, several other Soviet economists demonstrated that main economic indicators were inflated while independent estimation results indicated that the Soviet economy was in recession (see Khanin, 1988, 1993).

³⁷ A number of scholars such as Pejovich (2003) and Boettke (2001) emphasize the role of culture in the transition from socialism to capitalism in Central and Eastern Europe. Two Harvard economists, Erzo Luttmer and Monica Singhal, also show in their working paper "Culture, Context, and the Taste for Redistribution" that a culture is a strong predictor of economic preferences.

oligarchs' political power came from their wealth. The source of their wealth was from private capital accumulation in a shady period of privatization. The following rhetoric presented the Ukrainian privatization as an unfair and non-competitive accumulation of private property where the main sources of income were rent-seeking and asset-looting. The most oligarchic sectors of the economy were steel and energy industries (see Aslund, 2004; Kravchuk, 2002). If that was the case, then how could we explain that the lion's share of the economic growth came from the most oligarchic industries? If there was a state capture in Ukraine as Hellman (1998) argued, then how could someone articulate a consolidation of democracy in that Eastern European country? If Aslund and de Menil (2004), and Aslund (2001) were correct about the privatization of the economy through the privatization scams, then why did the privatization have a positive effect on the economy? And the main question is, how does one explain the steady private sector development in a state captured by the notorious oligarchs? I believe that the current rhetoric has not presented the case of Ukraine's transition objectively.³⁸ Otherwise, it must logically explain the current economic and political environment in Ukraine but it fails to do so.

Everything indicates that Ukraine has successfully gone through the socialist-capitalist transition. The *captive nation* of the former Soviet empire is a free state with a consolidating democracy and a steady growing market economy. The rhetoric of the

³⁸ Anders Aslund in his latest book *How Ukraine Became Democracy and Market Economy* contradicts his earlier books (2004, 2001) when he argues that the oligarchic Ukraine becomes a democracy with a market economy by the wish of the infamous oligarchs. Similarly, Robert Kravchuk (2002) describes a decade of Ukraine's transition as a peculiar case of "non-reform" when the decade is actually a period of the major market reforms associated with a rebounding of Ukraine's economy.

modern Ukraineologists cannot properly explain how Ukraine got where it is now (see Aslund, 2009; Aslund and McFaul, 2006; Aslund and de Menil, 2004; Kravchuk, 2002, Kuzio et al, 1999; etc.). Ukraine did not follow the “one-size-fits-all” or “spend-and-they-come” type of institutional development. Ukraine had its own path that took it to the right place. Though the level of institutional quality is lower compared to developed nations, the prospects for institutional improvement are great.

The little international pressure on Ukraine’s economic and political liberalization had only a positive effect on the quality of institutional improvement. Ukraine did not have to use a copy-cat of market reforms applied everywhere in the post-socialist countries. It went through an economic liberalization with its own speed and its own discretion by timely adjusting to the conditions of world politics and globalized economy. The international openness and privatization made the transition become the incentive-compatible enterprise for Ukrainians. The rise of a new class of capital-venture entrepreneurs did not lead to the state capture or corporatization. Instead the private sector development secured private property rights and supplemented the advent of capitalism into the former socialist economy. The late blooming of Ukraine’s economy is not a sign of failed market reforms. In contrast, it demonstrates the sustainability of economic liberalization.

While the international development community treats Africa and China as the millennium generation of the developing-transitional economies, it should not ignore the lessons from the transitional experience of the FSU economies. Ukraine’s experience sends a very clear message to the international organizations and political leaders: there is

no trade-off between living standards and individual freedom even under the severe economic conditions. Russia, Belarus and many other countries stepped on that slippery slope of reform policy and then slipped into the abyss of the autocracy and state-controlled economy. Ukraine avoided the path dependence road and went through the institutional quality development by building a free democratic state with a market economy. The economists agree that market economy promotes democracy. I want to add that the market economy promotes democracy if the nation has a market-oriented and democracy-friendly culture. And the market economy promotes democracy more, the longer it stays in effect. But this process cannot be planned and controlled by the government because, as we have also learnt, the policy experts cannot design institutions for transplanting one country to another without unintended consequences that undermine the efficiency of both the plan and the control.

The central message of this chapter is timely and important because of the ongoing negative changes in the governance system across the world. Governments use the current economic recession as an excuse for bringing the elements of socialism into the modern capitalist society. Martin Jacques, the former editor of a British magazine called *Marxism Today*, in his book, *When China Rules the World*, predicts that China's rising economic power under the "benign" communist political leadership will dominate the world. He makes his argument based on the latest study by Goldman Sachs which forecasts that China's economy will be bigger than America's by 2027 and will double its size by 2050. Thus, this book sends the opposite message: a mix of communism and capitalism can be sustainable in the long run. But this proposition contradicts centuries of

human history exemplified by the registered failure of the greatest socialist experiment, the FSU. China will not collapse as the FSU but it will not rise to the economic world domination without democracy and rule of law. Neither can any nation that steps on a slippery slope of a policy trade-off between living standards and individual liberties succeed in the long run.

3. Institutional Stickiness and Privatization: Evidence from Ukraine

3.1. Introduction

The general field of economics becomes more acceptable of idea that a culture matters a lot for a sustainable economic development. A notion of the culture's important role in the successful economic development is also widely accepted among other social scientists (Harrison and Huntington 2000; Landes, 1998; Inglehart 1997; Moynihan, 1996; Berger, 1991b). On the one hand, the underlying culture could facilitate important institutional changes necessary for the economic progress (Storr, 2006; Pejovich, 2003; Boettke, 2001; Hayek, 1991, 1973; Weber, 1930). On the other hand, the indigenous culture could create institutional bottle-necks retarding the economic progress (Easterly, 2006, 2001; Kuran, 2004; Blewett, 1995). I believe that we know by now that the imposed western institutions in post-Soviet Eurasia or post-colonial Africa have different results than these institutions produce in the Western Europe and the North America. While some Western institutions were transplanted with a certain degree of success, other Western institutions failed to stick to the indigenous institutional environment. Thus, it is a fact that the underlying culture affects the stickiness of the implanted policy-designed institutions.

Boettke, Coyne, and Leeson (2008) develop *the regression theorem of institutional stickiness* to explain why some institutions stick to the underlying social environment while the others do not stick at all. Their main proposition is that a degree of institutional stickiness depends on a social distance between the indigenous culture and the introduced institution. The further the designed institution falls from the cultural nucleus, the lower chances of its institutional stickiness are. By focusing on both industrial and agricultural privatizations, this chapter applies the regression theorem of institutional stickiness to examine Ukraine's economic liberalization. Using a qualitative data compiled from public opinion surveys and interviews with main stakeholders, I show that Ukraine's privatization program reflected the underlying culture. Nonetheless, a designed policy change failed on several accounts when several implanted institutions were not consistent with the indigenous institutional environment. This chapter demonstrates that the underlying social institutions facilitated the industrial privatization while certain culturally-based beliefs and preferences of indigenous economic agents did not support the agricultural privatization (see Hay and Shleifer, 1998; Greif et al, 1994; Greif, 1989).

This chapter proceeds as follows. Section 3.2 presents a historical record of Ukraine's privatization. Section 3.3 examines a role that the underlying culture plays in the institutional change by looking closely at the privatization of industrial sector and agro-producing industry. Section 3.4 applies *the regression theorem of institutional stickiness* to the case of the Ukrainian privatization. Concluding remarks are contained in Section 3.5.

3.2. Historical Record of Ukraine's Privatization

Privatization was a seminal change in Ukraine's system of property rights. It shaped the second largest economy of the former Soviet Union (i.e. in terms of GDP volume) in many ways. The Ukrainian privatization created a system of private property rights in the post-socialist economy by making private property the dominant form of asset ownership. Ukraine's privatization also changed a status quo in the post-socialist economic environment by shifting an economic power from the government to the private sector. As a result, in the economic decision-making process nomenclature substituted for new types of economic agents such as stockholders, CEOs, and venture capital entrepreneurs. An overall impact of privatization on Ukraine is so multi-facet that we must look beyond the structural changes in the ownership system to understand its significance. Though privatization was just a part of economic liberalization, the market reform permeated every aspect of institutional environment in Ukraine. In this section, I provide a brief review of Ukraine's privatization, discuss its economic record and describe a constitutional process of privatization law-making.

3.2.1. *The Record of Ukraine's Privatization*

Most experts agree that Ukraine's privatization has mainly started since the 1994 Privatization Bill (Paskhaver et al, 2008; Aslund, 2008). Ukraine had a mass privatization with management-employee-buyout (henceforth, MEBO) as a primary method and direct sale as a secondary method.³⁹ Between 1994 and 1998, the mass privatization period,

³⁹ There are several methods of privatization defined in economic literature (see Megginson and Netter, 2001; Brada, 1996). Majority of the transition economies of Central and Eastern Europe, including Ukraine, went through voucher (certificate) privatization that was often referred to as *mass privatization*

almost 45% of small-scale enterprises and around 95% of large-scale enterprises were privatized via MEBO, as shown in Table 2.1.⁴⁰ Five percent of large-scale enterprises and 55% of small-scale enterprise were privatized via the direct sale.

It is noteworthy that the privatization was not viewed as a source of government revenues. The architects of Ukraine's privatization such as Paskhaver, Verkhovodova and Ageyeva (2008) write that the privatization had two main goals: a destatization of a post-socialist economy, and, a private sector development. All statistics indicates that both objectives are completed, as shown in Tables 2.2 and 2.3. GDP share of private sector – the main indicator of the effectiveness of privatization –increased significantly from 35 percent in 1994 to 85 percent in 2008 (WDI, 2009). More than 80% of assets are in private ownership (UKRSTAT, 2009). Nine out of ten Ukrainians have a real estate in private ownership. More than sixteen million of Ukrainians, that is one-fourth of the total population, became shareholders and more than six million received agricultural land in private property.

Other statistics also suggest that privatization promoted private sector development and economic progress in Ukraine, as shown in Tables 2.2 and 2.3. Labor force share of private sector grew from 16.1 percent to almost 86 percent between 1994 and 2008. Ukraine's private sector produced almost 96 percent of manufacture goods in 2008 as

(MP). This method allocates vouchers or certificates to eligible citizens for free or at nominal cost so that people can use vouchers for share acquisition of state-owned capital assets (e.g. capital stock, real estate). MP has several forms. MEBO that is one of them was very popular among the transition economies. MEBO gives employees of state-owned enterprise certain privileges in a share acquisition such as exclusive buy-out rights or priority buy-out rights.

⁴⁰ The 1994 Privatization bill defines a small-scale enterprise as one with less than 100 employees and a net worth of less than one million hryvnia. A large-scale enterprise is one that has more than 100 employees and a net worth of more than one million hryvnia. By the way, the Ukrainian certificates were printed in USA.

compared to eleven percent in 1994. Moreover, the economic rebounding is associated with the start of privatization. Ukraine's economy reached its trough in 1994 with a 22.4% decline in GDP and then demonstrated signs of recovery throughout the second half of the 1990s (EBRD, 1999).⁴¹ In the fourth quarter of 1999 the economy already had a positive rate of growth. Ukraine's industrial output increased two-fold from its pre-privatization level. Ukraine became one of the major exporters of industrial and agricultural products. The fastest growing production sector of Ukraine is the steel industry. The export of crude steel increased from 3 mln tons in 1990 to 37 mln tons in 2008 (UKRSTAT, 2009). Export of steel by-product, a scrap metal, increased from 370 thousand tons to 5 million tons between 1995 and 2000 (ibid). On average, Ukraine produced 8% of the world scrap metal in that period of time. Privatization also raised productive efficiency of Ukraine's economy. In the same period GDP per unit of energy increased by 30% from \$1.2 per kgoe to \$1.6 per kgoe (EBRD, 2009). In relative terms, Ukraine's economy was one of the best performers among the FSU economies in the last decade. For instance, Ukraine's value-added growth of industrial output was five percent higher than Russia's and ten percent higher than FSU economies' (WDI, 2009). Moreover, Table 2.3 shows that a rate of Ukraine's economic liberalization was higher than Russia's. Considering the levels of political and economic liberties, Ukraine had much more liberalized economy and more democratic system of political governance

⁴¹ The official data underestimated the level of economic performance in the 1990s because of a large share of shadow economy. An odd discrepancy among the rate of electricity consumption, output growth, and volume of exports pointed to that. Johnson, Kaufman and Shleifer (1997) estimated Ukraine's shadow economy between 24% and 35% share of GDP between 1990 and 1995. Lacko (1999) found that it was between 37% and 54% for the same period.

than its big neighbor, Russia. Furthermore, political and economic freedom significantly increased in Ukraine while Russia's economic and political liberties plunged. Overall, we can see that the Ukrainian privatization is associated with the economic growth and the institutional quality improvement. Moreover, a positive correlation between improvements in both political and economic systems of Ukraine proves that a sustainable economic development can be achieved through economic liberalization without any trade-off between prosperity and freedom in the post-Soviet countries.

3.2.2. The Constitutional Process of Privatization

The early 1990s were the formative years of the privatization policy that would direct a transformation of a socialist system of property rights for the next decade. Ukraine's parliament (*ukr.* Verkhovna Rada) was extremely prolific between December 1991 and December 1994. First, the Verkhovna Rada passed two major bills on privatization of state-owned enterprises and land reform in 1991. Both laws declared a start of redistributive reform that would allocate state-owned capital assets, real estate and land to Ukrainians. Second, the parliament passed bills on types of ownership and on land privatization in 1992. The former introduced a new system of property rights with state, collective, and private ownership, while the latter gave Ukrainians private property rights on land. Third, Ukraine's parliament amended both the Commerce and Land Codes by adding a private property as a new type of ownership. Finally, by the end of 1994, the parliament completed and enacted the privatization program that united the above-mentioned laws under the umbrella of the general concept of denationalization and privatization of all kinds of state property.

In order to develop the privatization program, Ukraine's government announced a public contest in the state-owned mass media. The contest for Ukraine's privatization program was very competitive and transparent. More than twenty groups of domestic experts sent their bill proposals to the parliamentary committee on privatization that chose three projects for parliamentary hearings.⁴² Each project went through the individual parliamentary hearing. In addition, authors of each project hold conferences and individual Q&A sessions with deputies in the breaks between the parliamentary hearings. After several rounds of discussions, the Verkhovna Rada voted on three privatization projects, namely: *certificate privatization*, *direct sales* project and *free giveaway privatization*. Parliamentary majority chose the certificate type of mass privatization with subsequent MEBO proposed by a group of researchers (Dr. Oleksandr Paskhaver, Dr. Lidia Verkhovodova, Dr. Volodimir Lanovoi, and others) formerly affiliated with the Academy of Sciences' Institute of Economics.⁴³ Then President Kravchuk offered Dr. Lanovoi a post of a deputy-minister at the Ministry of Economy. Dr. Lanovoi took the offered position and appointed his colleagues, both Dr. Paskhaver and Dr. Verkhovodova, as his advisers.⁴⁴ The following excerpt from an interview with one of the privatization architects demonstrates how favorable Ukraine's political environment was towards a status quo change in the property regime. "In the early 1990s,

⁴² Official chronicles of parliamentary sessions, Uryadovy Kur'er (1994) and Holos Ukrayini (1994).

⁴³ Ibid.

⁴⁴ Each of them was responsible for different parts of privatization program. Dr. Paskhaver lead a large-scale privatization project and Dr. Verkhovodova lead a small-scale privatization project. Another colleague, Mr. Fedotenko worked on a real estate privatization. Later Dr. Paskhaver and Dr. Verkhovodova founded a non-government think-tank Center for Economic Development to evaluate a progress of privatization.

Ukraine was sending government officials abroad for professional training so that they could see how the Western economies functioned at that time. Everyone was coming back with firm pro-market and pro-democratic beliefs. As a result, privatization lawmaking was not an issue. The only issue was what privatization program to accept. Luckily, the certificate privatization won the contest. After all, it was the most socially optimal choice”.⁴⁵

Ukraine’s political environment was so favorable to market reforms that pushing a privatization bill through the Verkhovna Rada was not an issue. A balance of power in the Ukrainian parliament changed drastically in the early 1990s, as shown in Figure 2. At first, the 1990 parliamentary elections gave national-democrats and independent deputies a majority of seats in the parliament. Then President Kravchuk, who was a national-democrat himself, replaced the old communist elite by the national-democrats in every public office at both national and regional levels. Another major change in the Ukrainian politics was a government-issued ban on the communist party and subsequent dissolution of all communist political organizations. Thus, the national-democratic government not only disoriented but also weakened the left-wing of the Ukrainian parliament.⁴⁶ The national-democratic party People’s Council that was the main counterpart of both socialists and communists represented the right-wing of the Verkhovna Rada. Independent deputies who were mainly democrats represented the political center of the

⁴⁵ This interview was a part of field work conducted by the author in Ukraine in 2008 (see Appendix).

⁴⁶ The left-wing political parties have experienced demise in their popularity since then. In the 2007 parliamentary elections, the Communist Party of Ukraine (CPU) received 5.39% by passing a three-percent threshold so that it retained seats in the Ukrainian parliament. The Socialist Party of Ukraine received only 2.86% of votes and for the first time did not pass the threshold. Source: Central Election Commission of Ukraine, <http://www.cvk.gov.ua/pls/vnd2007/w6p001>.

parliament. The center was considered unofficially to be the “party of power” between 1991 and 1994 because it had the largest number of seats in the parliament (Whitemore, 2004). By commanding the majority of seats, the center and the right-wing dominated Ukraine’s parliament between 1991 and 1994. Under those circumstances the privatization bills were passed by the majority of the deputies without any legislative grid-locks.

3.2.3. *Public Choice and Privatization*

In the romanticized view of politics, major political and economic changes must take into account public opinion, while government is a benevolent and omniscient agency. The most interesting fact of Ukraine’s privatization is that it reflected a prevailing public opinion. After all, that is what a democratically-elected government must do. It must represent their constituency and express their will. In this sense Ukraine’s privatization was one of the most democratic legislations in its modern history. The following analysis of public opinion surveys that were conducted by both foreign and domestic organizations between 1989 and 1995 in Ukraine demonstrates that the privatization program reflected the public opinion. To start off, I describe data sources.

Gorbachev’s *Glasnost* reform whose motto was “Politicians should have constructive dialogue with people” encouraged the empirical study of public opinion in the FSU. The first organization was the All-Union (later, All-Russian) Center for Public Opinion and Market Research (henceforth, VCIOM) that was founded in December 1987. It had branches all over the FSU, including Ukraine. In 1991 the Ukrainian branch of VCIOM joined Ukraine’s Institute of Sociology at the National Academy of Sciences

(henceforth, ISOC) to conduct public opinion surveys independently from the Moscow-based VCIOM. Between 1990 and 1991 a group of ISOC researchers lead by both Dr. Panina and Dr. Golovakha conducted an independent study of public opinion in Kyiv, the capital of Ukraine. The Kyiv-based surveys (henceforth, KYIV) provide a comparative framework for an analysis of public opinion between the capital and the rest of the country. Another leading Ukrainian research organization was the Kyiv International Institute of Sociology (henceforth, KIIS) that started public opinion surveys in 1991. KIIS is known internationally because its staff not only collects public opinion data for the European Values Surveys but also contributes to several peer-reviewed sociological journals including the International Journal of Sociology. I also use data from another Moscow-based research organization Fund of Public Opinion (henceforth, FOM) that started as VCIOM's branch and became independent research organization in 1992. Finally, I use public opinion data from EUROBAROMETER as well. Thus, using public opinion data from the above-mentioned sources, I demonstrate that privatization was successful when it reflected the prevailing public attitudes towards types and methods of privatization.

In the early 1990s Ukrainians were mainly supportive of economic liberalization, as shown in Figure 3. On average, more 60% of Ukrainians supported the privatization of small-scale business. The privatization of the large-scale enterprises received less public support than the small-scale privatization. Between 1989 and 1994, on average, more than 30% of respondents supported the large-scale privatization. Its disapproval rate fluctuated above and below the approval rate while almost 30% of respondents could not

decide whether they approved or disapprove the large-scale privatization. For instance, almost half of respondents approved it and 30% of them disapproved it in 1991, while a year later the approval rate dropped to 40% and the disapproval rate increased to 35% (KIIS, 2002). Experts agreed that a negative outlook on the Russian voucher privatization partially affected the Ukrainian public opinion (Panina, 2006; Burakovsky, 2002). Furthermore, Figure 4 shows the public attitudes towards the methods of privatization. Ukrainians largely supported an insider's privatization of small- and large-scale enterprises through either MEBO or free transfer of capital assets to management and employees (i.e. free MEBO). Both MEBO and free MEBO received the equal approval rate of 45.75% between 1989 and 1994. A direct sale was the least popular method of privatization among the public though its approval rate was almost 30 percent.

Considering the land privatization, Ukrainians demonstrated a high approval rate of the reform, as shown in Figures 5 and 6. More than two-thirds of respondents approved a transfer of land from a government to a private owner. Figure 6 shows that the concept of the land reform was very popular in both parts of Ukraine, the West and the East, as well as in both urban and rural areas. Moreover, Ukrainians urged the government to speed up the economic liberalization and privatization. According to the EUROBAROMETER survey, in 1992 more than three-fourths of Ukrainians believed that the privatization of state-owned enterprise needed a boost and two-thirds of respondents wanted the economic liberalization to move faster. A year later 83% of Ukrainians called for a speeding up of the privatization.

3.3. Ukraine's Private Sector Development

As demonstrated in the previous section, the Ukrainian privatization is associated with the economic growth and the institutional quality improvement. The transformation of the property rights system was a successful reform in all accounts. Ukraine has one of the most privatized economies among the FSU countries. Ukraine's private sector share in GDP is approaching an all-time high of 85% (WDI, 2009). All sectors of Ukraine's economy have more than 80% of assets in private ownership (UKRSTAT, 2009). The previous section also provides evidence that the Ukrainian privatization mainly reflected the public opinion. In other words, the privatization was a success because the underlying culture facilitated the institutional change. A hypothesis of a successful match between the designed privatization policy and the indigenous culture deserves a closer analysis because it provides important insights in a realm of the economic policy. Likewise, a number of scholars such as Boettke, Coyne, and Leeson (2008), Pejovich (2003), and Boettke (2001) emphasize a role of the underlying culture in the transition from socialism to capitalism in Central and Eastern Europe. Thus, to test this hypothesis, this section examines a relationship between the underlying culture and the designed institutional change with a focus on both industrial and agricultural privatizations.

3.3.1. Pre-privatization Status Quo

The crucial feature of post-Soviet Ukraine was that the former captive nation was by no means a country with *tabula rasa* economic system. Private property was not a new institution to Ukraine. Private ownership of capital assets and land had existed in Ukraine in the early 20th century until the Soviet Russia converted the Ukrainian economy into the socialist system and kept it locked-in for the next three quarters of the 20th century. But

the informal sector of the Soviet economy preserved a culture of private property, entrepreneurship and free enterprise despite the Soviet efforts to annihilate the spontaneous emergent institutions. In Schumpeterian sense, the informal business sector lead by unsung heroes, men and women, who recreated free enterprise through the sheer force of their wills and imaginations, was responsible for the most important development in Ukraine's history, the spread of *sub rosa* indigenous culture of private property and market economy. Agro-producing entrepreneurs often referred to as *kulaks* (eng. knuckles) were presumably the first to lead the informal economy in the Soviet Ukraine (Conquest, 1986; Subtelny, 2000). The distinguished Ukraineologist Robert Conquest (1986, p.177) writes that the destruction of the kulaks was in part designed to decapitate the peasantry in its resistance to the imposition of the new (socialist) order. Kulaks opposed farm collectivization and state-controlled market of agricultural produce by engaging in the informal business activity. Marxism-Leninism envisaged the kulaks as the agro-producing bourgeoisie - a class enemy of the worker-peasant proletariat. In December 1929 Stalin announced the aim of "the liquidation of the kulaks as a class".⁴⁷ The Soviet collectivization that was a blood-shedding nationalization of agro-producing industry and agricultural land crushed the grass-root entrepreneurs in the 1930s.⁴⁸ Then the WWII had a very important unintended consequence for sub rosa culture of market institutions because of a barter that emerged as a main mechanism of exchange in the

⁴⁷ Pravda, December 27, 1929.

⁴⁸ Conquest (1986) and Subtelny (2000) provide a full historical account of the Soviet collectivization in Ukraine. Boettke (1992) presents an excellent analysis of the political economy of the Soviet collectivization.

period of the war calamity and the post-war reconstruction.⁴⁹ However, the Soviet NKVD succeeded in restricting a size of barter economy by prosecuting citizens for informal transactions.

In the 1960s the FSU officially entered a decade of stagnation that translated into sharp shortages of consumer goods and food items. To overcome inefficiency of the socialist economy, a new class of entrepreneurs that was often referred to as *speculant* (eng. speculator) emerged in the informal sector. Speculants offered consumers food items, apparel, and electronics at higher prices than in the state-owned retail stores while they risked being caught and prosecuted by the economic crime unit OBKHSS.⁵⁰ Speculants also offered services of foreign currency exchange that was illegal transaction in the FSU. In the 1970s another group of small-scale manufactures that was often referred to as *tsekhovik* (eng. an owner of a workshop) emerged as a response to a growing demand for consumer goods and deteriorating Soviet economic system. By the time Gorbachev came to power a significant share of the Soviet economy operated in a shade using black market mechanisms and relying on *de facto* private property rights system. In the 1980s more street vendors, small shop owners and farmers responded to the shortage of consumer goods in the socialist economy by selling the state-owned and privately-produced goods on the black market. There are several studies that estimate the size of the informal economy in the FSU. Grossman (1977, 1979) argues that the Soviet

⁴⁹ Experimental economists such as Kimbrough, Smith, and Wilson (2009) find that barter is an efficient mechanism of exchange.

⁵⁰ OBKHSS is an acronym for Otdel po Bor'be s Khisheniem Socialisticheskoy Sobstvennosti (eng. Socialist Property Theft Investigation Unit). NKVD created OBKHSS in 1937 to fight the informal business activity. Later OBKHSS joined the Soviet Ministry of Internal Affairs.

informal economy has grown in its size significantly since 1970. He uses fragmentary data from the Central Intelligence Agency and the Soviet press to show that the informal economy permeates several state-owned businesses such as car dealerships and gas stations.⁵¹ Using data about several consumer goods and services collected from the Soviet newspapers, O'Hearn (1980) finds that the Soviet informal economy generated 25% of fresh fish sales and 70% of house repairs. In order to estimate the Soviet informal economy, several studies used the randomized surveys of the Soviet emigrants to Israel and the United States. Relying on the Israeli sample, Ofer and Vinokur (1992) find that the informal economy generated almost 12% and 18% of the Soviet household income and expenditures, respectively, in the late 1970s. Grossman (1987) uses the American sample of the Soviet emigrants and he finds that the share of the informal economy was between 28% and 33% of the Soviet urban household income in the same period of time. Similarly, Kim (2003) finds that the Soviet households spent more than 23% of their budgets in the informal sector of the economy between 1969 and 1990. Johnson et al (1997) estimated the informal sector as much as 12% of the Soviet GDP in 1990. Moreover, Kim (2003) provides evidence that the informal economy has operated within the Soviet economy since 1969. Using archival data from Soviet family budget surveys, Kim (2003) estimates the size of the informal economy to be 6.8% of the Soviet GNP and 7.3% of Ukraine's GNP. Thus, Ukraine had the larger informal economy than the rest of the Soviet economy. Another statistics suggest a very large size of Ukraine's informal

⁵¹ Similarly, Ebelling (1991) writes that the Soviet informal economy substituted a formal state-controlled trade for an informal transfer of property rights.

economy. Johnson, Kaufman and Shleifer (1997) estimated Ukraine's shadow economy between 24% and 35% share of GDP between 1990 and 1995. Lacko (1999) found that it was between 37% and 54% for the same period.

Considering the evolutionary process in the informal economy, the Soviet Ukraine did not have a pure socialist economic system. It was rather a mixed system of formal socialism and informal capitalism. Moreover, the size and magnitude of the informal economy illustrates that a pre-privatization status quo was very conducive towards the institutional change. Thus, Ukraine's underlying institutional environment had all necessary informal institutions such as sub rosa market economy and de facto private property rights system to facilitate the privatization.

3.3.2. Industrial Privatization

The privatization of Ukraine's industrial sector fairly reflected popular public opinion that was a true barometer of political and economic status quo change started in the late 1980s. Gorbachev's *Perestroika* returned private ownership, market prices and entrepreneurship to the formal sector of the Soviet economy.⁵² The revival of market institutions was marked by the laws on Individual Labor Activity, State Enterprises, Cooperatives, Lease, and Peasant Farms.⁵³ Anders Aslund (2009, p.24) considers the USSR Law on Cooperatives (1988) as a highlight of Gorbachev's *Perestroika* because the

⁵² See Boettke (2001), Ellman and Kontorovich (1998) for more detailed discussion of the political economy of Gorbachev's *Perestroika*.

⁵³ The Law on Individual Labor Activity (1986) started a liberalization of the Soviet economy. The law allowed individuals to operate a small-scale business without a hired labor force. The Law on State Enterprise (1987) gave state-owned enterprises autonomy in use and allocation of their assets. The Law on Cooperatives (1988) introduced a collective ownership of capital assets and land. Finally, the Law on Lease (1988) allowed employees to lease a state-owned enterprise and conduct business without a supervision of the State Board of Industry.

bill gave start to most current big Ukrainian businessmen. It legalized any economic activity such as domestic and foreign trade, production and banking outside the public sector. Though Gorbachev's reforms shook up the Soviet economy, most experts agree that the reforms were incomplete and their effects were insignificant (see Goldman, 1991; Boettke, 2001). For instance, a share of private sector in Ukraine's GDP was less than 10% in 1992. A share of private sector in Ukraine's manufacturing industry was 15 % while it was just 4% in the agriculture. Thus, the privatization program had still to carry a burden of economic liberalization and deregulation of Ukraine's industrial sector, the second largest industrial sector among the FSU economies.

It is important to note that main stakeholders of privatization held very positive attitudes towards the exogenous institutional change. Managers and employees of industrial state-owned enterprises (henceforth, SOEs) dominantly supported the MEBO. Almost two-thirds of industrial workers and three-fourths of industrial SOE managers named MEBO as the most preferred method (FOM, 1994). Managers and employees supported the insider type of privatization because they considered SOEs to be in their *de facto* ownership. More than three-fourths of industrial SOE managers supported the economic liberalization of their sector of the economy and almost 40% of them named the overcoming of liquidity constraints⁵⁴ through borrowing from the emerging banking sector as the main objective of industrial privatization (FOM, 1995). Both managers and

⁵⁴ A collapse of the Soviet banking sector left many enterprises with no working capital. Moreover, a commercialization of the previously established supply network and a very small number of private banks resulted in a credit crunch and liquidity constraints in Ukraine's economy in the early 1990s. Several studies demonstrate a high level of barterization in Ukraine in that period of time (see Marin, Kaufman, and Gorochowiskij, 2000; Gregory, 2000).

workers expected the privatization to give them a full access to the cash-flow and control rights over SOE where they worked at. A transfer of ownership rights from public to private sector guaranteed the latter a real return on entrepreneurial efforts in a period of a harsh economic downturn and a suddenly commercialized economy. Employees also demonstrated a strong urge to work at the privately-owned enterprise rather than at the state-owned. More than three-fourths of them wanted to work in a private sector while one-sixth of respondents wanted to stay in a public sector (KYIV, 1992). Thus, main stakeholders had very positive attitudes towards the industrial privatization. Moreover, the privatization policy reflected stakeholders' views on the exogenous institutional change. Given a good fit between the policy design and the underlying culture, everything suggested a smooth privatization of Ukraine's industrial sector.

Nonetheless, the policy makers made a mistake when they decided that Ukrainians were ready not only for foreign-designed institutional change⁵⁵ but also for foreign-designed financial institution such as a trust fund. The reformers developed a very simple investment plan where the key role was to be played by the trust funds. The capital stock of industrial SOEs was divided in equal shares proportional to the number of employees. Then the employees were issued certificates with a nominal value of their capital stock share. Once received a certificate, the workers were supposed to deposit it to a trust fund and receive annual interest payments in return. Sale and purchase of certificates was illegal because the government was afraid that employees would sell out

⁵⁵ Privatization is a foreign-designed reform of property rights system because Ukraine is not the first country to produce and introduce it. In the early 1980s the Thatcher government introduced privatization as it was used later by many developed and developing nations, including Ukraine.

their only means of wealth accumulation. Later when necessary market institutions would be in place, the employees could use their savings to purchase stocks in their enterprise as well as other companies at the initial public offerings. Thus, the policy makers used the trust fund to shift privatization's gears from the shock therapy speed to the more gradual approach.

Another objective of the trust fund scheme was to give employees the means of initial private wealth accumulation. The government aimed to recover private savings lost in the default of the Soviet financial system. However, the government made a mistake by choosing the foreign-designed financial institution to become a driving force behind the industrial privatization. The concept of trust fund failed to stick to the idiosyncratic culture of local agents because Ukrainians had a very low level of trust in financial institutions after the default of the Soviet financial system that stripped everyone off their lifetime savings. The employees who received capital stock shares of SOEs refused to deposit their certificates to the trust funds. Another mistake made by the government was to outlaw a certificate sale. Without a stock trade, the shares of SOEs capital stock had no real market value. The absence of free market exchange and the particular preferences of the local agents transformed the capital stock certificate from the potential liquid asset into the dead capital.⁵⁶ The experts expressed concerns that the industrial privatization was in a deadlock (Paskhaver et al, 2004).

⁵⁶ I use Hernando de Soto's definition of a dead capital. The costs of legalizing assets are so prohibitively high that the asset remains in the informal economy and it never becomes liquid (Soto, 2000).

However, the preexisted culture of the informal market exchange and the de facto private ownership bridged a coordination gap between the certificate owners and the buyers. The savvy entrepreneurs who emerged from the informal economy transformed trust funds into emergent stock-swap markets because they saw great business opportunities in purchasing a large pool of capital stock shares. Since the certificate sale was still illegal transaction, the entrepreneurs used other methods of asset transfer between them and employees such as a long-term lease with a subsequent buy-out or a gift-based giveaway. Paskhaver et al (2008) write that, though it is impossible to estimate a volume of illegal certificate sales, there is enough evidence to believe that a lion's share of certificates was transferred from employees to the emerging venture-capitalist entrepreneurs through the above-mentioned transactions. According to Ukraine's NGO Center for Economic Development, the black market price of a capital stock share ranged from \$5 to \$10. Several mass media sources reported that certificates were often exchanged for consumer goods and food items. For instance, a stock of Donetsk-based steel factory was traded for a twenty-bottle container of vodka that was equivalent of \$40.⁵⁷

Thus, the informal economic experience helped both the extravagant entrepreneurs and the certificate owners to overcome the folly of the privatization policy by using market mechanisms. Ludwig von Mises (1922, p.97) writes that the essence of the economic activity so far as it is rational is to carry out acts of exchange. As shown in

⁵⁷ Ukraine's leading newspaper Mirror Weekly (ukr. Zerkalo Nedeli) reports thousand cases of illegal certificate trades in "Privatization is as Good as Certificates: Analysis of Trust Funds", source: <http://www.zn.ua/2000/2060/44045/> (Accessed on Sep 20, 2009).

the previous section, the evolutionary process within the informal economy created the underlying culture that facilitated the privatization and the subsequent private sector development. As a result, the failed foreign-designed financial institution substituted for the emergent certificate market allocated resources efficiently through either money-based or barter-based exchange. The highest bidders who emerged later as oligarchs received the capital assets in the industrial enterprises of their interest. The rise of the private sector in the steel industry that produced the first two Ukrainian billionaires, Rinat Akhmetov and Viktor Pinchuk, was not accidental (see Alslund, 2004; Kravchuk, 2002). The steel industry that employed almost a 60% share of the industrial labor force produced around two-thirds of the total industrial output in the early 1990s. Thus, the steel industry had the largest pool of capital stock shares proportional to the number of industrial workers and offered the biggest profit opportunities to the emerging venture-capitalist entrepreneurs. The privatization of the steel industry was so spontaneous that no agent exited the privatization with a possession of the complete production cycle. Several NGOs and the State Property Fund of Ukraine (henceforth, SPFU) did not find any case of privatization of the complete steel production cycle.⁵⁸ However, not all certificates were traded. Some stock shares never found a buyer because their enterprises did not provide sufficient profit opportunities to the emerging private sector. Those factories and workshops eventually dissolved while their warehouses were converted into whole-sale stores and shopping malls.

⁵⁸ For instance, Center for Economic Development (henceforth CED) is the leading economic policy think-tank in Ukraine. CED mainly follows Ukraine's private sector development and posts the annual reports on its web-site <http://c-e-d.info/>.

Finally, despite the pessimistic expectations expressed by the policy experts, the informal certificate market boosted the private sector development in the industrial sector. The SPFU reported that the share of private sector already reached 40% of the national economy by 1998. The official statistics shows that Ukraine's economy rebounded after the start of industrial privatization. A deep and prolonged decline in industrial output reached its trough in 1994 with a 22.4% decline in GDP and then demonstrated signs of recovery throughout the second half of the 1990s (EBRD, 1999). In the fourth quarter of 1999 the economy already had a positive rate of growth. The economy became driven by a value-added industrial output growth. Ukraine's industrial output increased two-fold from its pre-privatization level. For instance, in the last decade a value added growth of Ukraine's industry was 5% higher than Russia's and 10% higher than FSU economies' (WDI, 2009). The fastest growing production sector of Ukraine is the steel industry. The export of crude steel increased from 4 mln tons in 1994 to 37 mln tons in 2008 (UKRSTAT, 2009). Ukraine is listed among the top ten steel-producing countries.⁵⁹ According to UKRSTAT, the export of the steel by-product, a scrap metal, demonstrated a fourteen-fold increase between 1995 and 2000.

3.3.3. The Agricultural Privatization

Ludwig von Mises (1922, p.763) writes that “the Roman Empire crumbled to dust because it lacked the spirit of liberalism and free enterprise. The policy of

⁵⁹ Ukraine's steel industry produces 47% of its output via the Siemens-Martin type of a blast furnace and 49% of steel via the basic oxygen process while the former constitutes just 4% of the world steel output and the latter is respectively 60%. Almost 35% of the world steel is produced via the electric arc furnaces (International Iron and Steel Institute, 2009, <http://www.worldsteel.org>). Despite several “technology modernizations” requests on the behalf of the World Bank, Ukraine retained a technology of an intermediate steel production (i.e. a pig iron via the blast furnace) and became one of its major exporters.

interventionism and its political outcomes decomposed the mighty empire as they will by necessity always disintegrate and destroy any social entity”. Agro-producing industry almost became the Roman Empire of Ukraine’s economy. Ukraine’s world-renowned grain industry turned out to be the toughest sector to reform because of its economic backwardness and troubled cultural heritage.

The Soviet economic policy had the most detrimental effect on Ukraine’s culture of free enterprise and entrepreneurship in the agro-producing industry than anywhere else. The Soviet collectivization (1921-30) and the Soviet famine-terror (1930-33) created the adverse selection problem by fundamentally undermining human capital development in the agricultural sector. The expropriation of private property and massive extermination of rural dwellers created generations of farmers lacking in entrepreneurship and private ownership. Then the decades of economic central planning and collective farming culturally embedded socialist work ethics while Ukraine appeared on the world maps as merely part of the former Soviet Union. Thus, it is not the presence but the absence of property has been taken for granted in Ukraine since the advancement of the Soviet communism. So many generations were born with the perception that private property rights in land should be absent.

The main problem of the land reform was mixed evidence from the public opinion polls. On the one hand, public mainly supported the idea of land private ownership, as shown in Figures 5 and 6. On average, more than two-thirds of Ukrainians demonstrated positive attitudes towards the land privatization between 1989 and 1994. Both Western and Eastern regions dominantly supported the land privatization with a bit larger support

in the West. The approval rate of the land privatization was 10% lower in rural areas than in urban areas though it was still more than 70%, on average, in the same period of time. On the other hand, Ukrainians demonstrated anti-market views with respect to the privatization of agro-producing enterprises and the liberalization of land market. Almost half of state-owned farm (henceforth, SOF) directors and more than one-third of rural dwellers opposed privatization of the agricultural sector (FOM, 1994). Moreover, 65% of SOF workers and 68% of SOF directors wanted to work in a collective farm rather than in a private farm (ISOC, 1998). Only 14% of SOF directors approved the private farming. Another statistics suggest that in the early 1990s almost half of Ukrainians did not support the economic liberalization of the agricultural land market (ISOC, 1995).⁶⁰

Another problem of the land reform was that the privatization policy sent a mixed signal to the economy. While the agricultural privatization bill went into effect, the government enacted a ban on agricultural land sale. The ban that remains one of the most controversial political issues is still in effect. The mixed policy created a regime uncertainty situation by significantly damaging private investors' confidence in the durability of private property rights in the agro-producing industry.⁶¹ The initial set up of the agricultural privatization was incentive-incompatible with the whole concept of economic liberalization. Moreover, the government refrained from the shock therapy approach to the land reform by allowing SOF employees to choose between two types of

⁶⁰ Public opinion polls demonstrate a growing public disapproval of agricultural land sale-purchase (Panina, 2006; Golovakha, 1997). By the way, Ukrainians joke that everyone is a socialist when it comes to agricultural land, but then everyone is an adamant capitalist when it comes to anything else

⁶¹ For more discussion on a regime uncertainty, please, see Higgs (1997).

farm restructuring: one, from kolkhoz⁶² to collective farm, and, two, from kolkhoz to privately-owned farm.⁶³ Majority of farm employees chose the former that significantly slowed down the transformation of property rights system in the agriculture and the subsequent farm restructuring. Thus, the economic liberalization of Ukraine's agriculture led to collectivization rather than privatization. The collective farms operated more than three-fourths of the agricultural land and accounted for two-thirds of the total number of agricultural enterprises in 1999.⁶⁴ Many empirical studies show that the collective ownership is less efficient than its conventional counterpart (see Hansmann, 1990; Bonin et al, 1993; Megginson and Netter, 2001). Employee-owned farms usually use more labor-intensive methods of production than their counterparts. Labor-intensive methods of production result in underinvestment in capital-intensive production. The collective farms retained their scale of operations and levels of employment at the level of SOFs. In the early 1990s, the level of employment on average reached 750-800 employees per collective farm, ranging from 80 to 1,500 (Sabluk, 1999). Moreover, employee-owned firms often maximize average wage rather than maximize their profits. As a result of wage-maximizing production, employee-owned firms increase wages at costs of other inputs. The collective farms were also extremely inefficient producers. In 1997, 85% of the collective farms were unprofitable. In 1998, the number of profitable farms dropped to 7%, totaling \$1.23 billion in losses (Sabluk, 1999). Likewise, the World Bank and

⁶² Kolkhoz that is an acronym for Kollektivnoe Khozyastvo (eng. Collective Household) was a typical SOF.

⁶³ The World Bank (1975) recommended to base land reforms on the following principles: desirability of owner-operated family farms, efficiency and equity of resource redistribution.

⁶⁴ Share of employee-owned farms started decreasing after the 1999 Land Reform Acceleration Bill and shrank to almost 20% from the total number of farms in 2008.

FAO estimated that 92% of collective farms were unprofitable in 1998 (see Lerman et al, 2007, p. 19). By the end of 1999, less than ten percent of collective farm enterprises were restructured (Meyers et al, 2005, p.47). Krasnozhan (2010b) finds that producer cooperatives' total factor productivity is more than 20 percents lower than TFP of private farms in Ukraine. Cooperatives' technical efficiency is more than 10% lower than that in private farms.

Douglas North (1981) writes that norms governing economic interactions could inhibit the development of efficient market economies. Alas, the Soviet culture of collective farming retarded the private sector development in Ukraine's agriculture. Despite the introduction of private property in land, most rural residents preferred to retain their land and capital stock shares in their SOFs substituted for the collective farms. Foreign and domestic experts agree that the agricultural privatization carried mainly artificial character (Meyers et al, 2005; Pugachov and Kobets, 2004; Lerman and Csaki, 2000). SOFs were restructured into new ownership limbos of collective farms without the actual internal restructuring. I refer to this institutional lock-in as *kolkhoz inertia* because the economic liberalization achieved a suboptimal resource allocation in the agro-producing industry (Krasnozhan, 2005). When I asked major stake-holders to explain why they chose to transfer their stock shares to the collective farm, 65% of them said that it was a socially optimal type of farm restructuring and 20% said that the collective farm was the closest form of business organization to the SOF.⁶⁵ Several

⁶⁵ A source of data is a randomized study that the author conducted in Ukraine in 2008. The study included 47 face-to-face and 11 follow-up interviews with the main stake-holders of privatization (see Appendix).

former SOF managers said that they did not feel right becoming owners or members of the board of executives while the rest of the employees and their families would be left out. The following excerpt from an interview with a current manager of agro-producing cooperative shows how strongly *the kolkhoz inertia* biased his attitude toward privatization. “I did not feel right about privatization from the very beginning. I did not want to own what did not belong to me. The farm belonged to our village. I would not dare to look into people’s eyes if I became the only owner of everything”.⁶⁶ Likewise, the former Agricultural Policy adviser to Ukraine’s president explains that the agricultural privatization was not very popular among rural population because of biased public perception of the process. “Private farm, instead of a collective farm, was viewed as an unlawful transfer of capital assets and land into the hands of one person. Corporate farm was viewed as some kind of oligarchic process where capital assets and land would be accumulated by a few people. As a result, most state-owned farms became collective farms or agricultural cooperatives that had new organizational form but de facto everything (capital assets and land ownership) remained the same”.⁶⁷

Thus, considering the agricultural privatization, we can see that the underlying culture was less acceptable towards the institutional change. As a result, the economic development of the agricultural sector lagged significantly behind the rest of the Ukrainian economy. While agricultural sector continued to deteriorate economically, industrial sector rebounded and demonstrated a resilient output growth in the late 1990s.

⁶⁶ This interview is a part of the field work that the author conducted in Ukraine in 2008 (see Appendix).

⁶⁷ Ibid.

In 2008 the agricultural output reached only 80% of its pre-privatization level. Almost 20% of arable land area was degraded and low-yield while 40% of arable land was abandoned by the owners (Ukraine's State Committee of Land Resource, 2008).

3.4. Application and Extension of the Regression Theorem of Institutional Stickiness

This chapter conjectures that the policy change can succeed only if the designed institutions do not fall far from the indigenous institutional environment. Likewise, the *regression theorem of institutional stickiness* (henceforth, RTIS) formulated by Boettke, Coyne, and Leeson (2008) maintains that a success of any proposed institutional change that is defined by the *institutional stickiness* is a function of that institution's status in relationship to indigenous agents in the previous period of time.⁶⁸ The scholars explain differences in institutional stickiness through the social distance between three categories of institutions and *métis*, ancient Greek concept, which is characterized by local knowledge resulting from practical experience. *Métis* includes skills, culture, norms, and conventions, which are shaped by the experience of the individual. Thus, the further a new institution falls from *métis*, the less sticky it will be. Boettke et al (2008) divide institutions in three categories: one, indigenously introduced exogenous institutions (IEX); two, indigenously introduced endogenous institutions (IEN), and, three, foreign-introduced exogenous institutions (FEX). In terms of their distance from *Métis*, IEN is the closest and FEX is the farthest.

⁶⁸ Boettke et al (2008) defines the *institutional stickiness* as the ability or inability of new institutions to take hold where they are transplanted.

Considering the Ukrainian privatization, the RTIS provides important insights for understanding the progress of the structural changes in the post-socialist economy. In the context of the RTIS framework, the privatization falls in two categories: FEX and IEX. The institutional change was a foreign-designed but it was modified and implanted by the Ukrainian government. The policy objective was to create a system of private property rights. As shown in the previous sections, *de facto* system of private property rights was largely present in the informal economy of the Soviet Ukraine for a long time. Thus, the policy makers aimed to lay down a mixed system of FEX and IEX institutions on the informal system of IEN. Since the underlying culture that was necessary to support the privatization was in place, the overall institutional change was a success.

However, the privatization progressed across the sectors of the economy with a different pace. As shown in the previous section, the underlying culture necessary to facilitate the privatization was different among socially distinguishable groups of economic agents. The industrial privatization was facilitated by the underlying metis while the agricultural privatization stumbled upon hostility towards a system of private ownership and land market. This observation has very important policy implications because it highlights a common misperception about the effectiveness of “one-size-fits-all” policy. Presently, there is a theoretical gap between sociology and political economy in treating a latent variable of culture. Swidler (1997) writes that thirty years ago most sociologist viewed culture as a “seamless web” of norms and institutions unitary and internally coherent across groups and situations. The sociology has recently made a significant shift to a more complex understanding of culture. Many modern sociologists

such as Martin (1992) envisage culture as something fragmented across groups within a populace and inconsistent across its manifestations such as responses to attitude questionnaires and the values embodied in everyday practices.

By looking closely at the industrial sector, we can see that the cultural impact of the socialism was offset by the emergent informal economy in small-scale business and manufacturing sector. Moreover, the industrial privatization was facilitated by IEN institutions that overcame the policy failure. Consider, for instance, a transformation of the trust fund into the certificate exchange that emerged in a process of human spontaneous interactions for mutual gain. While trust funds that were introduced as FEX failed, they spontaneously evolved as efficient IEN of the certificate exchange.⁶⁹ Overall, the industrial privatization was a success because the implanted FEX-IEX property regime was very close to the original institutional environment. In contrast, the underlying culture necessary to facilitate the agricultural privatization was severely damaged by the Soviet rule, as shown in the previous section. The agro-producing industry lacked the underlying metis to support the institutional change. As a result, the privatization efforts failed to stick in agriculture because of a large gap between the introduced FEX-IEX ownership system and the indigenous institutional environment.

Thus, the application of the RTIS provides important insights into the institutional analysis of Ukraine's privatization. But I find it helpful to extend the RTIS framework by introducing new types of hybrid institutions and a degree of institutional stickiness

⁶⁹ IEN institutions are usually associated with spontaneously emergent institutions. They are common practices, norms and beliefs which emerged informally over time in concrete places.

because the proposed concepts facilitates a broader understanding of the institutional change. The degree of institutional stickiness estimates a likelihood of a mismatch between the indigenous culture and the policy-designed institutions. In other words, the degree of institutional stickiness indicates how likely the designed and introduced institution will stick to the local institutional environment. The analytical value of the concept is that it expands the taxonomy proposed by Boettke et al (2008), as shown in Table 2.4. Thus the policy-designed institutions can be divided in five categories, including three original types (FEX, IEX, and IEN) and two new hybrid types (FIEX and FIEXN). In the context of the proposed concept, Ukraine's privatization that the RTIS classifies as both FEX and IEX falls into a new category of a hybrid institution FEX-IEX or FIEX. Its degree of institutional stickiness is higher than that of FEX but lower than that of IEX. Furthermore, the institution of trust fund that the RTIS categorizes as both FEX and IEN represents another hybrid type of institution FEX-IEN or FIEXN. Its degree of institutional stickiness is higher than that of IEX and lower than that of IEN. This extension of the RTIS facilitates a more applied analysis of the two case studies of agricultural and industrial privatizations in Ukraine.

3.5. Conclusion

The modern development community conventionally conceives that institutions can be designed by policy experts for transplant in undeveloped countries. Ukraine's recent post-socialist development experience must warn the policy makers at least about the folly of the policy-designed institutional transplant. This chapter demonstrates that the underlying *metis* must be in place to support the designed institutional change. Otherwise,

an inconsistency between the indigenous culture and the designed institutions will retard the policy change. The effectiveness of the institutional change also requires coordination between the government and population regarding the course of the change. This chapter conjectures that beliefs and preferences of indigenous economic agents were at the core of the successful institutional change. The presented analysis of Ukraine's post-Soviet transition history demonstrates that success of institutional change is more plausible if new institutions are traceable to the indigenous culture. Thus, it does not seem an exaggeration to say that any path to progress with a reasonable probability of success must ultimately be rooted in indigenous institutional order.

4. Property Rights and Economic Efficiency: Evidence from Ukraine

4.1. Introduction

Economies in the post-socialist countries went through many kinds of institutional changes, such as economic liberalization, privatization, and, land reform, in the last two decades. In addition to their concurrent effects, the effects of certain types of reforms may still be felt many years later. From an economic policy standpoint, it is particularly important to identify reforms that have large long-run effects. Moreover, the mechanisms underlying the persistence of exogenous institutional changes may be a key for understanding the institutional underpinnings of such reforms. For instance, a transformation of property rights system may not only have a long-run direct effect but also long-term unintended consequences simply because the policy design cannot predict human actions that emerge spontaneously in response to incentives created by the reform. Unlike the direct outcomes of the institutional change, the indirectly affected outcomes quite often determine a general well-being in the long-run.

This chapter focuses on the transformation of property rights regime by examining how sensitive the economic performance of a firm is to its institutional ecology. In particular, this chapter studies the microeconomic effect of property rights regime on the productive and technical efficiency of Ukrainian agro-producing firms created in a wake

of the 1999 Reform. I attempt to demonstrate a link at a firm-level between the property rights system implanted exogenously by the reform and the post-reform economic performance.

I use firm-level data from Ukraine's State Statistics Committee (henceforth, UKRSTAT) and Ukraine's State Registry of Enterprises and Organizations (henceforth, EDRPOU) to create a representative sample of Ukraine's agro-producing industry. To deal with a hypothetical endogeneity and selection bias, I run instrumental variables regressions where variables for the property rights regime measured at a date of business registration and a net worth of enterprise serve as instruments for the intra-firm property rights system.

I examine the impact of intra-firm property rights system on a range of economic outcomes observed in 2006. I find that a well-defined and enforced system of private property rights leads to improved efficiency, larger profits, and, higher wages. Agro-producing firms with a completely restructured system of property rights have 20 percent higher total factor productivity and 8 percent higher production possibilities frontier. They also have 9.7% percent higher profit margins and pay 16 percent higher wages. These results are robust across the provinces at sector and product levels.

This chapter is related to two strands of economic research. First, it is linked to a body of economic literature on the relationship between employee ownership and efficiency. The modern microeconomic theory predicts that employee-owned firms will be significantly less effective producers because of pervasive production inefficiencies as compared to conventional privately-owned firms while the empirical evidence is

somewhat mixed (see Jones and Mygind, 2000; Djankov and Murrell, 2002; Blasi et al, 2003; Sesil, 2006; Kramer, 2008). Another accepted concept in this literature is that employee-owned firms use more labor-intensive production and pay higher wages than the privately-owned (see Bartlett et al, 1992; Bonin et al, 1993; Becker and Murphy, 1998; Kardas et al, 1998; Blair et al, 2000). This chapter relates with this body of economic research and identifies the effect of employee ownership on individual economic performance. In comparison with this research, I focus on Ukraine's agro-producing industry that has the largest concentration of employee-owned firms among all post-socialist economies. Moreover, the natural experiment of the exogenously implanted system of property rights offers a unique setting for a comparative analysis of the relationship between employee ownership and efficiency.

This chapter also speaks to the literature on property rights economics. This strand of economic research demonstrates conventionally that a properly defined and enforced system of property rights has a positive effect on use and allocation of factor resources whether in the private or common property rights system (Demsetz, 1967; Alchian and Demsetz, 1972; Williamson, 1985; Ostrom, 1990; Blewett, 1995; Besley, 1995). The contractual or the transaction-cost approach to the economic organization that views an individual firm as a sovereign system of governance emphasizes a role of delineated property rights in increasing economic efficiency (Grossman and Hart, 1986; Williamson, 1991; Shleifer, 1998; Klein and Foss, 2002). My findings of significant impact of well-defined governance system on economic efficiency are consistent with this literature. This chapter also adds to the existing literature by demonstrating that at a firm-level the

impact of properly defined system of private property rights has a very profound positive effect on productive and technical efficiency.

There are several additional features in this chapter that distinguishes it from existing research. First, the chapter examines the effect of intra-firm governance system in post-socialist country, Ukraine. Among previous papers, only Estrin and Rosevear (1999a, 1999b), Djankov (1999), Curtiss et al (2005), and Brown and Earle (2007) conduct such examination. Second, I examine a wide range of diverse outcomes in a high-quality representative sample dataset, the UKRSTAT06. By contrast, existing work make use of datasets that have a much more restricted set of outcome variables available, such as the World Bank survey data (Lerman et al, 1998), the FAO survey (Lerman et al, 2007), and, smaller-scale surveys (Kurkalova and Carriquiry, 2003). Finally, in comparison with existing research, this chapter focuses on the exogenous shocks to the governance system that is highly relevant to a large number of emerging economies and developing countries. This chapter demonstrates, across a large number of firms and in a representative sample of a national industry, that a reform policy can have long-run unintended effects on individual economic performance. These findings question efficiency of public policies that implement a fundamental institutional change.

This chapter proceeds as follows. Section 4.2 presents discussion of conceptual issues and related literature. Section 4.3 reviews the evidence on the impact of governance system on agro-producing efficiency in Ukraine. Section 4.4 describes the datasets I use and provides descriptive statistics. Section 4.5 presents the estimating

framework and the main empirical results. This section also contains a variety of supplementary analyses. And Section 4.6 is the conclusion.

4.2. Related Literature

In the economic literature, there are typically two approaches towards economic analysis of organizational forms such as the firm. This chapter speaks to both strands of economic research. The neoclassical microeconomic theory considers the firm as a set of production possibilities that optimally uses inputs to maximize outputs. The firm maximizes profits subject to technological and resource constraints or simply its production costs (Solow, 1957; Hansmann, 1990; Bonin et al, 1993). The property rights theorists focus their attention on the organizational details on production by viewing the firm as a nexus of distinctive property rights within its governance system with different types of integration (Coase, 1937; Alchian and Demsetz, 1972; Williamson, 1985; Grossman and Hart, 1986). The intra-firm governance system consists of contractual relations between asset owners and employees (Klein and Foss, 2002). Since the intra-firm governance system comes in a great variety ranging from sole proprietorship to corporation with multi-level hierarchy, the “contractual” literature suggests that economic performance is also subjective to the individual governance system (Williamson, 1971; 1991). This strand of economic research also demonstrates that a governance system must be properly defined and enforced to ensure efficient use and allocation of factor resources (Demsetz, 1967; Ostrom, 1990; Blewett, 1995; Besley, 1995). The contractual or transaction-cost approach to economic organization shows that the governance system with contractual incompleteness, such as attenuated property rights and uncertain

delineation of control and cash-flow rights, fails to allocate resources in the most efficient way (Williamson, 1971; Grossman and Hart, 1986; Shleifer, 1998; Klein and Foss, 2002).

The focus in this chapter is on the effect of intra-firm property rights system on economic efficiency, in particular, a comparative analysis of employee-owned and privately-owned firms. A body of economic research on the relationship between employee ownership and efficiency presents mixed evidence (Hansmann, 1990; Bonin et al, 1993; Megginson and Netter, 2001). One strand of economic literature ascribes the following benefits to employee ownership - better performance, job stability, and higher work compensation. Employee ownership and participation can reduce the agency costs by increasing levels of worker's commitment and reducing supervision costs (Conte and Svejnar, 1990; Blasi, 2008). Unlike the traditional adversarial relationship between management and employees in the privately-owned firm, a democratic atmosphere of joint welfare maximization in the employee-owned firm improves and stimulates peer group pressure (Alchian and Demsetz, 1972; Jones and Svejnar, 1985).⁷⁰ Employee-owned firms also have higher wage levels than in private firms because the former maximize the average earning per worker instead of maximizing profit (Eastrin, 1982; Earle and Estrin, 1996; Kardas et al, 1998; Ben-Ner et al, 2000).⁷¹ Several empirical

⁷⁰ Starting with Mill (1879) and Marshall (1890, 1892), the economists believe that the employee ownership creates a democratic work environment that translates into better performance and lower supervision costs rather than shirking or sabotage. Using experimental methods, Frohlich et al (1998) find that workers demonstrate higher levels of involvement in their task and greater propensity to interact with their co-workers in employee-owned firms than their conventional counterparts.

⁷¹ Ward (1958) and Vanek (1970) point out that a level of employment in the employee-owned firm can be more robust to economic conditions than in the privately-owned firm.

studies in the U.S., Sweden, Japan, Italy, and England demonstrate that employee-owned firms are more efficient producers than their conventional counterparts (Craig et al, 1995; Kruse and Blasi, 1997; Blasi et al, 2003; Sesil, 2006; and Kramer, 2008).⁷² The employee-owned firms have higher labor productivity and use more labor-intensive production than the private firms (Thoradson, 1987; Bartlett et al, 1992; Kruse et al, 2008). In contrast, Winther and Marens (1997) and Freeman et al (2000) do not find any consistent effects of employee ownership and “employee involvement” practices on productivity in the U.S.

Another strand of economic research that studies the relationship between employee ownership and efficiency in the post-socialist economies shows that employee-owned firms have slower market-oriented enterprise restructuring because of pervasive production inefficiencies (Blanchard et al, 1991; Boycko et al, 1995; Frydman et al, 1996; Roland, 2001).⁷³ Employee-owned firms incur high decision-making costs because workers participate in management and ownership. Moreover, managers in the employee-owned firms have less power and discretionary authority and are more likely to shirk from effective restructuring and adoption to market conditions (Alchian and Demsetz,

⁷² Kruse and Blasi (1997) using a meta-analysis of eleven empirical studies find that productivity in employee-owned companies is higher by 6 - 8 percent than in their counterparts and that the adoption of employee ownership increases firm performance by 4.4 percent.

⁷³ The restructuring consists of the actions taken by the new or incumbent management to achieve greater efficiency in the privatized firm (Roland, 2001, p.234). These actions are often categorized as defensive or strategic restructuring. Defensive restructuring is defined as taking measures to reduce costs and scale down unprofitable activity: cutting the obsolete production lines, shedding labor, getting rid of nonproductive assets, and the like. Strategic restructuring is referred to the innovation and investment decisions which are necessary to enhance enterprise performance.

1972; Williamson, 1975, 1980).⁷⁴ Djankov and Murrell (2002) using a meta-analysis find that worker ownership has a negative effect on enterprise restructuring in the former Soviet countries. In Estonia, manager-owned firms have higher levels of economic performance than employee-owned firms (Jones and Mygind, 2000; 2003). In the Czech Republic, by controlling for ownership endogeneity, Curtiss et al (2005) find that ownership concentration and managerial ownership have a significantly positive effect on labor productivity in the agro-producing industry. While most studies in the post-socialist economies find that employee ownership is associated with worse enterprise restructuring, the evidence is somewhat mixed. Estrin and Rosevear (1999a, 1999b) show that employee ownership is associated with better enterprise restructuring in Ukraine. Djankov (1999) also finds that employee ownership is beneficial to labor productivity growth and enterprise restructuring at low ownership levels, but it becomes insignificant at higher levels in six former Soviet countries, including Ukraine.

This chapter differs from the existing research in several ways. First, it focuses on the relationship between economic efficiency and the intra-firm property rights system that is determined by the exogenous institutional change. Second, it examines the effect of intra-firm governance system in a post-socialist country, Ukraine. Among previous studies, very few conducted similar research (Estrin and Rosevear, 1999a, 1999b; Djankov, 1999; Brown and Earle, 2007). Finally, I make use of a high-quality representative sample dataset, the UKRSTAT06, to examine a wide range of economic

⁷⁴ Both the industrial organization economist Barnard (1938) and the Austrian economist Hayek (1945) agreed that the adoption to changes in the market was the central problem of economic organization.

variables. By contrast, several studies conducted in Ukraine use datasets that have a much more restricted set of outcome variables available, such as the World Bank survey data (Lerman et al, 1998), the FAO survey (Lerman et al, 2007), and, smaller-scale surveys (Kurkalova and Carriquiry, 2003).

4.3. Property Rights System and Agro-producing Industry in Ukraine

The property rights system is the most important dimension of variation in types of agro-producing firms in Ukraine. Because of the economic liberalization reforms implemented in the 1990s, forms and shares of agricultural enterprises showed a big variation in Ukraine across time. For instance, the share of state-owned farms in Ukraine's agro-producing industry dropped from 95 percent in 1991 to 5 percent in 2006. The structural changes in the property rights system also affected the economy of the agricultural sector.

The economic liberalization of Ukraine's agricultural sector typically consisted of several years of market reforms. The most distinguished reform was the 1999 Reform because it finally shaped the agro-producing industry as a sector of economy dominated by privately-owned enterprises.⁷⁵ The 1999 Reform was a necessary step towards a sustainable private sector development in agriculture. Lerman (1999) writes that unlike the Czech Republic, Hungary, and Azerbaijan where most state-owned farms were restructured into market-driven corporate and individual farms, Ukraine hardly departed from the Soviet type of collective farms until the 1999 Reform. Lerman and Csaki (2000)

⁷⁵ I will often refer to this presidential decree that is formally known as the Presidential Decree "On accelerating land reform and farm restructuring" (12/03/1999) as the 1999 Reform.

and Meyers et al (2005) criticized farm restructuring in Ukraine for its artificial character - state-owned farms were restructured into new ownership limbos of collective agricultural firms without the actual internal restructuring. The collective farms operated at suboptimal level by retaining their scales of operations and levels of employment at the level of state-owned farms. In the late 1990s, the average level of employment in the collective farm reached 800 employees (Sabluk, 1999). According to the FAO, a share of unprofitable collective farms reached 92% in 1998 (Lerman et al, 2007: 19). In the same year the collective agricultural enterprise reported four billion hryvnia in losses (\$1.23 billion) and 95% of the collective farms defaulted on their credit payments (Sabluk, 1999). Despite outrageous productive inefficiencies, the collective farms operated more than three-fourths of the agricultural land and accounted for two-thirds of the total number of agricultural enterprises before the start of the 1999 Reform.

In December 1999 Ukraine's president Leonid Kuchma issued a decree which called for speeding up the transformation of the inefficient collective agricultural enterprises into either privately-owned farms or producer cooperatives.⁷⁶ The 1999 Reform required every collective farm to complete the restructuring of governance system by April 30, 2000. The decree demanded the collective farms to divide the capital stock via free management-employee buyout and the management and employees had to decide what type of business organization they wanted to create in place of the collective

⁷⁶ Henceforth, I define a private farm as an agro-producing firm that is privately-owned. A producer cooperative or cooperative farm is defined as an employee-owned agro-producing firm. Thus, the "private farm" is not really the "private farm" in the sense of the "peasant farm" that is typically a small-scale individual farm. I thank Zvi Lerman for bringing my attention to a potential source of confusion with a following terminology.

farm. In order to ease the dissolution of debt-constrained collective farms, the government also announced the default on debt payments in the agricultural sector. As a result, the 1999 Reform was a very effective policy in transforming the collective farms into other types of business organizations. In December 1999 there were 8,102 collective farms, 284 producer cooperatives, and 2,273 private farms (Lerman et al, 2007:21). By the end of 2001, there were no collective farms listed in the business registry. Within newly registered enterprises there were 7,464 (67.8%) privately-owned farms, and 2,762 (24.7%) producer cooperatives. In 2005, there were 12,593 (82.1%) private farms and 1,749 (12.5%) cooperatives (EDRPOU, 2006).⁷⁷

Nonetheless, the groundbreaking reform left some gaps in the transformation of property rights system in Ukraine's agriculture. Private property rights still remain an unresolved problem. Now the main issue is the incomplete farm restructuring of producer cooperatives. Unlike private farms, the producer cooperatives have not completed the restructuring yet. Their capital stock still remains in the abstract collective ownership.⁷⁸ Management and employees hold their individual stocks in the collective ownership. Individual stock shares have abstract form because remuneration of their real market values has never been done.⁷⁹ Unlike private farms, the producer cooperatives consists of a large number of asset owners who have abstract control rights over tangible assets and

⁷⁷ EDRPOU is acronym for Ukraine's State Registry of Enterprises and Organizations (ukr. *Edinyi Derzhavnyi Reestr Pidpriemstv ta Organizatsyi Ukraini*).

⁷⁸ Two main laws regulating agro-producing industry are potential sources of the following legal conundrum. The Land Code that went into effect in 2002 divides land ownership in two types: private and public. On the other hand, the Commerce Code that went into effect in 2003 lists three forms of asset ownership: private, public, and collective.

⁷⁹ The "zero contribution thesis" says that rational, self-interested individuals will not act to achieve their common or group interests unless their number in a group is quite small or unless there is coercion or some other special device to make individuals act in their common interest (Olson, 1965).

hold residual income rights. An uncertain regime of property rights creates a calculation problem because of a pervasive conflict between control and cash-flow rights.⁸⁰ Moreover, unlike conventional cooperatives, these employee-owned farms have attenuated economic incentives because they use a wage-based form of work compensation instead of a standard profit-sharing mechanism. Stuck between its conventional and former organizational forms, the producer cooperatives operate under an uncertain property rights regime. This limbo type of business organization not only damages investors' confidence but also creates attenuated private property rights and inefficient set of control and cash-flow rights within a business venture (see Hart et al., 1997; Higgs, 1997; Shleifer, 1998; Acemoglu et al., 2005). By remaining locked-in in the suboptimal governance system, the producer cooperatives inefficiently use factor resources and fail to maximize their profits.

Though in recent years most farms had robust profits, attributable to steep price increases boosted by ethanol production and global demand for food crops, cooperative farms demonstrated lower levels of productive efficiency than the rest of agro-producing firms in Ukraine, as shown in Table 3.1. In 2005 cooperative farms used almost 750 hectares more of agricultural land, employed twenty more workers, and had almost 120,000 hryvnia (\$21,000) more in net worth per 100 hectare than their conventional counterparts. But in the same year private farms outperformed the producer cooperatives in all measures of productive efficiency, as shown in rows 4-11 of Table 3.1. Either per

⁸⁰ Within the economic organization of the firm, property rights are usually divided in two main groups: control and cash-flow rights. Property rights usually possess a bundle of characteristics such as exclusivity, transferability, inheritability, alienability and enforcement mechanism (Alchian and Demsetz, 1973).

100 hectares or per worker, the private farms had higher profits, revenues, and value-added output. The profit margin in private farms was nine percent higher than their counterparts and three percent higher than the national average (UKRSTAT, 2006). Moreover, the mean wage rate was 500 hryvnia (\$90) higher in the private farms than in the cooperatives. The private farms also outperform the cooperative farms across time and regions, as shown in Table 3.2. The private farms had higher profit margins in grain production, in particular, cereals, sunflower, and sugar beets, in Kharkiv province in 2003-2004. Moreover, Kharkiv's cooperatives had lower profit margins in grain production than the national average. As a result, a share of profitable farms was much lower among cooperatives than among private farms and lower than the national average. Thus, despite the reform efforts, there is a pronounced productive inefficiency in the producer cooperatives across Ukraine driven by the phenomenon of incomplete restructuring of governance system.

4.4. Data Sources and Summary Statistics

In this chapter, I use a dataset on agro-producing firms, the UKRSTAT06, which was provided by the State Statistics Committee of Ukraine (henceforth, UKRSTAT). The UKRSTAT06 includes a variety of farm-level economic variables, ranging from land sizes to total revenues, and other annual farm-level economic data. The representative sample that I use in this chapter contains observations on 535 agro-producing firms operated in Kharkiv and Sumy provinces in 2006. These farms represent five percent of the total number of farms in Ukraine. The sample consists of 499 privately-owned farms and 36 producer cooperatives. In total, these farms employ 65,129 workers. The total net

worth of farms in the sample was estimated at 4.1 billion hryvnia (\$806 mln.). The farms operated 1.7 million hectares of agricultural land or five percent of the national total. In 2006 the selected farms generated 2.7 billion hryvnia (\$535 mln.) in revenues. Table 3.3 reports summary statistics.

In brief, the privately-owned farms have higher levels of productive efficiency in all the measures of economic performance than their employee-owned counterparts. Lerman et al (2007) estimates farm labor productivity as revenue per employee and revenue per man hour. Private farms have 72 percent higher revenue per employee and 65 percent higher revenue per man hour compared to cooperative farms, as shown in rows 2 and 3. Land productivity, another measure of productive efficiency, is higher for private farms than for cooperatives. Private farms generate 36 percent more revenue per hectare than their counterparts.

To identify a difference in factor resource use between two types of farms, I also use two measures of capital intensity: a cost-based capital-labor ratio and a ratio between net worth and number of employees (see Kramer, 2008; Jorgenson, 2009). I find mixed evidence, as shown in rows 5-6. The capital-labor ratio in private farms is more than 40 percent higher than in cooperative farms, while the net worth per worker is 55 percent higher in the producer cooperatives than in the private farms. Since agricultural production also uses land as a factor of production, I apply the same measures of capital intensity with respect to the land input. Once again evidence is mixed. The cost-based measure of capital intensity is 14 percent higher for private farms when the net worth per hectare of agricultural land is 32 percent higher for the cooperative farms. Another

statistics suggest that agricultural production is more capital-intensive in the private farms than in the cooperatives. Private farms incur more cost in fuel, seeds, and, fertilizer per hectare than their counterparts, as shown in rows 9-12. Moreover, cooperative and private farms also demonstrate differences in use and compensation of labor input. Private farms employ fewer workers annually than cooperatives. On average, private farms have six workers less than their counterparts. Employees also work less in private farms than in cooperatives. Throughout the year, private farms use ten thousand hours less of manual labor than their counterparts. Regarding the use of land input, private farms use smaller areas of agricultural land, as shown in rows 18-20. Private farms also rent fewer hectares than cooperatives. But private farms make eight percent larger land lease payments per hectare than their counterparts. Finally, the summary statistics provides mixed evidence regarding the intensity of resource use across two types of agro-producing firms. The descriptive data demonstrates a pronounced difference in the levels of productive efficiency between privately-owned and employee-owned farms.

4.5. Main empirical results

4.5.1. Productive and Technical Efficiency

To examine the relationship between the intra-firm property rights system and economic efficiency, I use the conventional logarithmic specification of the Cobb-Douglas production function, as shown in Equation 1. The variables used in estimating the empirical framework are logged values of grain production outputs and resource inputs. Total revenue is the dependent variable, Y . Capital costs, including expenditures on fertilizers, seeds, and fuel, measure the capital input variable, K . Wages, annual

number of employees, and annual number of man-hours constitute the labor input variable, L . Area of arable land is a measure of land input, N . In Equation 1, β_K , β_L , and β_N are the output elasticities of the corresponding inputs:

$$(1) Y_i = \beta_0 + \beta_K K + \beta_L L + \beta_N N + \alpha \text{COOP}_i + \varepsilon_i$$

The coefficient of interest is α , the impact of intra-firm property rights system on the total factor productivity (TFP). The corresponding dummy variable COOP indicates whether the agro-producing firm is employee-owned ($\text{COOP}=1$) or privately-owned ($\text{COOP}=0$). The results from the OLS estimation of equation (1) are presented in Table 3.4. All coefficients are statistically significant and different from zero at conventional levels. Coefficients across the six regressions are also jointly statistically significantly different from zero. Robust standard errors are presented in parentheses and the sample size of the regression is in brackets. The OLS estimates of output elasticities demonstrate the increasing returns to scale in grain production. The estimation results also show that grain production is capital-intensive because the capital input has a larger share in total production than other inputs. How large is the effect of intra-firm property rights system? The privately-owned agro-producing firms have 16-17 percent higher TFP than the producer cooperatives. Thus, a well-defined governance system has a significant positive effect on the productive efficiency.

I also use stochastic frontier analysis of production function in order to estimate a relationship between the governance system and the technical efficiency (Aigner et al, 1977; Caudill et al, 1997; Kurkalova and Carriquiry, 2003; Lerman et al, 2007). The

following specification implies that the production process is subject to two economically distinguishable random disturbances with different characteristics:

$$(2) Y_i = \beta_0 + \beta_k K_i + \beta_l L_i + \beta_n N_i + u_i + v_i$$

The non-positive disturbance term u_i reflects the fact that each firm must lie below or on its production possibilities frontier. Any such deviation is the result of factors under the firm's control such as use and allocation of factor resources. But the frontier itself can vary across firms. The random disturbance term v_i reflects the effect of external factors such as climate conditions. Moreover, the stochastic frontier analysis produces a technical efficiency score that measures how efficiently the firm uses its set of production possibilities. If the firm reaches the optimal production frontier, it has TE score equal to 1. The further the agro-producing firm is located from the optimal production possibilities frontier, the lower its TE score gets. The results from estimation of Equation 2 are presented in Table 3.5. All coefficients are statistically significant and different from zero at conventional levels. On average, the TE scores indicate that producer cooperatives have 4-9 percent lower technical efficiency than the private firms. Thus, the stochastic frontier analysis shows that a properly defined system of property rights has significantly positive effect on technical efficiency.

4.5.2. Robustness check

Supplementary analysis confirms the robustness of the empirical results. First, I consider whether the effect of governance system differs across provinces. The main difference between provinces that are located in Eastern Ukraine is the climate condition. The Sumy province is located further to the north than province of Kharkiv. Annual

average level of precipitation that is 526 mm in both provinces is sufficient for generating high crop yields. Thus, it is interesting to see whether the empirical findings are robust to the difference in climate conditions which play a very important role in agriculture. In terms of soil fertility, provinces are not different.⁸¹ In order to control for the province effect, the corresponding dummy variable PROV indicates whether the agro-producing firm is located in Kharkiv province (PROV=1) or Sumy province (PROV=0):

$$(3) Y_i = \beta_0 + \beta_K K_i + \beta_L L_i + \beta_N N_i + \alpha_C COOP_i + \alpha_P PROVINCE_i + \varepsilon_i$$

The results from the OLS estimation of equation (3) are presented in Table 3.6 (Columns 1-3). All coefficients are statistically significant and different from zero at conventional levels. Robust standard errors are presented in parentheses and the sample size of the regression is in brackets. The estimation results show that grain production is more productive in the southern province than in the north. The governance system coefficient is higher but almost three percent and it remains statistically significant at the 1 percent level.

Furthermore, the agro-producing firms in the UKRSTAT06 dataset produce a different composition of crops by using various types of crop rotation.⁸² Cash crops such as corn, sugar beets, and, soy beans are more likely to increase sales revenue than manure crops such as oats. Moreover, a crop composition can also depend on climate conditions.

⁸¹ Both provinces are mostly covered by the *black soil*. According to USDA classification, black soil is grasslands, *mollisols*, type of soil which is a nutrient-rich soil with a deep dark layer of topsoil that is rich in organic matter.

⁸² Crop rotation requires annual alteration of crops in order to maintain soil fertility and thus maximize profits.

To check the robustness of the effect of intra-firm governance system at the crop level, I add dummy variables for all available types of crops ($CROP_i$):

$$(4) Y_i = \beta_0 + \beta_K K_i + \beta_L L_i + \beta_N N_i + \alpha_C COOP_i + \alpha_P PROVINCE_i + \alpha_{CR} CROP_i + \varepsilon_i$$

The results from the OLS estimation of equation (4) are also presented in Table 3.6 (Columns 4-7). All coefficients are statistically significant and different from zero at conventional levels. Robust standard errors are presented in parentheses and the sample size of the regression is in brackets. The estimation results show that the cash crops have a significant positive effect on revenues while the manure crops have a significant negative effect. The governance system coefficient is attenuated by almost two percent but it remains statistically significant at the 1 percent level.

Finally, it is important to consider whether endogeneity or selection bias in this sample confound the results. To investigate the likely direction of endogeneity and selection bias, I use the EDRPOU dataset to obtain the date of registration and the original net worth of each agro-producing firm from the UKRSTAT06 sample. To rule out these concerns, I test whether the net worth and the date of registration affects the choice of the organizational form. The results provide no statistically significant indication that the date of registration or the net work affects the likelihood of choice in this sample. Thus, the use of instrumented variable for the governance system is not necessary since the potential instruments are not strong vis-à-vis conventional thresholds used in instrumental variables estimation (Leamer, 1983; Bound et al, 1995; Stock and Yogo, 2005; Heckman and Urzua, 2009). This result is consistent with Meyers et al (2005) and Lerman et al (2007) who argue that a selection of organizational forms was

exogenous in Ukraine. The government officials actively participated in the 1999 Reform by making public appearances before the general assembly of collective farms and using administrative resources to reorganize the collective farms into the specific organizational forms (Lerman et al, 2007:35). Moreover, this chapter deals with a very broad problem of economic organization – governance system. The conventional thought is that the choice of organization form can be a function of other institutional factors such as adverse selection, collective action, social capital, etc. To understand why the economic situation in Ukraine's agro-producing industry turned out the way it did could become a task for future research. My findings provide additional justification for future research on the effect of governance system on the economic efficiency in Ukraine and countries with similar institutional environment.

4.6. Conclusion

This chapter finds that the economic efficiency of the firm is highly subjective to the governance system. In a high-quality representative sample dataset I examine effect of economic organization on productive and technical efficiency of Ukrainian agro-producing firms created during the 1999 Reform. Using firm-level data from Ukraine's State Statistics Committee (UKRSTAT) and Ukraine's State Registry of Enterprises and Organizations (EDRPOU), I find that a well-defined and enforced governance system leads to large positive gains in economic efficiency. In Ukraine, agro-producing firms with a properly delineated and complete system of property rights have twenty percent higher level of productive efficiency and nine percent higher level of technical efficiency. They also have larger profits and pay higher wages than agro-producing firms with

pervasive contractual incompleteness and uncertain regime of intra-firm property rights. These results are robust across the provinces at sector and product levels.

My findings relate to a substantial literature in industrial organization that documents positive gains in economic efficiency from a properly assigned and enforced intra-firm property rights system (Alchian and Demsetz, 1972; Williamson, 1971, 1985; Grossman and Hart, 1986; Shleifer, 1998; Klein and Foss, 2002). This chapter provides convincing evidence, across a large number of firms and in a representative sample of a national industry, that reform policy can have long-term unintended effects on a firm's economic performance. These results have important implications on economic policy that aims at implementing institutional change. The exogenous shocks to the governance system can create not only efficient economic organizations but also suboptimal organizational forms which are particularly vulnerable to fluctuation in economic conditions. The main reason for policy inefficiency is a spontaneous emergent nature of human actions that evolve in a reaction to a new set of incentives created by the reform policy.

Finally, my findings suggest several interesting directions for future research. For example, it is important to understand the persistence of inefficient economic organizations. Why do firms fail to adopt more effective systems of governance? It is also essential to study economic agents that operate in suboptimal organizational forms. Why do individuals remain in inefficient institutional settings? These questions are highly relevant not only to Ukraine and other post-socialist countries but also to a large number of emerging economies and developing countries

5. Conclusion: Lessons from Ukraine's Post-Socialist Economic Development

This dissertation addresses the continuous policy debate over the proper role of the government in modern society. Advocates for increasing the role of government use the current global economic crisis to undermine the faith in free markets and minimal government involvement in economic life. Instead of following this fashion, this dissertation offers an independent perspective on Ukraine's post-socialist economic development. It presents obvious evidence that Ukraine has become a consolidating democracy and emerging market economy through self-governance and economic liberalization rather than centralized development planning and totalitarian control over the economy when according to the experts that should have been impossible (Aslund, 2009, 2004, 2001; Aslund and de Menil, 2004; Kravchuk, 2002; Kubicek, 1999; Hellman, 1998; and Kuzio, 1997).⁸³

This dissertation also emphasizes the empirical importance of the underlying social institutions for a successful institutional change leading to a sustainable economic development. By using original quantitative data and field work evidence, I demonstrate that spontaneous emergent institutions rather than policy-designed ones drove Ukraine's

⁸³ Anders Aslund in his latest book *How Ukraine Became Democracy and Market Economy* contradicts his earlier books (2004, 2001) when he argues that the oligarchic Ukraine becomes a democracy with a market economy by the wish of the infamous oligarchs. Similarly, Robert Kravchuk (2002) describes a decade of Ukraine's transition as a peculiar case of "non-reform" when the decade is actually a period of the major market reforms associated with a rebounding of Ukraine's economy.

post-socialist economic development. Advocates for increasing the role of the government in the commercial life have neglected that the policy effectiveness depends on the compatibility between the policy-designed institutions and the underlying indigenous culture. A mismatch between *de jure* and *de facto* systems of governance results in the economically inefficient institutional lock-in situation if the policy design disregards the indigenous culture.

Ukraine's experience sends another clear message to the social scientists and policy makers - a policy change must be rooted in the indigenous social institutions. The economic development should not be treated as a global laboratory for designing and transplanting institutions from one country (more developed) to another (less developed). This process cannot be planned and controlled by the government because the policy experts cannot design and transplant institutions without unintended consequences that undermine the efficiency of both the plan and the control. Each country should follow a subjective path of development rooted in the indigenous social institutions. Though Ukraine has not followed the established "one-size-fits-all" or "spend-and-they-come" type of institutional development, it has become a consolidating democracy and emerging market economy. Incidentally, Ukraine is the only case of a more general phenomenon of a post-socialist political-economic liberalization in the non-EU FSU region. I ascribe this economic and political success to the aptitudes of the people and the pursuit of the appropriate policies. The international development community that treats Africa and China as the millennium generation of the emerging economies should not ignore the lessons from the transitional experience of the FSU states such as Ukraine.

Finally, this dissertation is timely and important because of the ongoing negative changes in the governance system across the world. Governments use the current global economic recession as an excuse for bringing the elements of socialism into the modern capitalist society. Martin Jacques, the former editor of a British magazine called *Marxism Today*, in his book, *When China Rules the World*, predicts that China's rising economic power under the "benign" communist political leadership will dominate the world.⁸⁴ He makes his argument based on the latest study by Goldman Sachs which forecasts that China's economy will be bigger than America's by 2027 and will double its size by 2050.⁸⁵ Thus, this rhetoric sends the wrong message - a mix of communism and capitalism can be sustainable in the long run. This proposition contradicts centuries of human history exemplified by the registered failure of the greatest socialist experiment, the FSU.⁸⁶ China will not rise to the economic world domination without democracy and rule of law that are rooted in the underlying change of the indigenous social institutions and should be neither policy-designed nor transplanted. In general, neither nation that has stepped on a slippery slope of a policy trade-off between prosperity and freedom has

⁸⁴ Martin Jacques in his latest book, *When China Rules the World; the Rise of the Middle Kingdom and the End of the Western World*, also argues that democracy and rule of law were not a precondition to the rise of the economic power in the Western World, including USA. From his point of view, it was just a coincidence. However, he does not provide any historical account of a nation's rise to the world economic power without a good institutional quality. For more discussion about China's success of mixing socialism with capitalism and federalism, see Kannbur and Zhang (2008), Lindbeck (2008), Weingast et al (2005) and Roland (2001). By the way, the Uighur's riot reveals a typical authoritarian trait of China's transition.

⁸⁵ See online version of *BRICs and Beyond*, Goldman Sachs Global Economic Group, Goldman Sachs Group Inc., <http://www2.goldmansachs.com/ideas/brics/book/BRIC-Full.pdf> (accessed on July 15, 2009).

⁸⁶ I should note that the FSU was not purely socialist state. Consider, for instance, Lenin's New Economic Policy that allowed for the elements of the market economy in some industries, in particular, in the agro-producing industry (see Boettke, 1990). Khrushchev's *Thaw* and Gorbachev's *Perestroika* also represented the Communist Party's concessions towards democracy and market economy (see Ellman and Kontorovich, 1998; Boettke, 1993; and Goldman, 1991).

succeeded in the long run. Thus, I believe that this dissertation is highly relevant not only to Ukraine and other post-socialist countries but also to a large number of emerging market economies and developing countries. Earlier versions of dissertation chapters were presented at the annual meetings of the Institute for Humane Studies in Washington, D.C., November, 2009; the Southern Economic Association in Washington, D.C., November 2008; the Public Choice Society in San Antonio, TX, May 2008; and GSPW seminars at George Mason University.

TABLES

Table 1.1. The Indicators of Political Transition in Russia, Ukraine and the Former Soviet Union, 2009

	The FSU	Russia	Ukraine
Corruption	6.1	6.25	5.75
Judicial independence	5.83	5.50	5.00
Independent media	6.0	6.25	3.5
Civil society	5.13	5.75	2.75
Local democracy	6.17	5.75	5.25
National democracy	6.08	5.75	5.25
Democracy	5.92	6.11	4.39
Electoral process	6.00	6.75	3.5
Rule of law*	7	4	10
Civil rights	4	5	2
Political rights	5	6	3
Freedom score	Non-Free (NF)	NF	Free

Note: * denotes that data was available only for 2008. Unlike other indicators, the rule of law score has a different scale so that the higher score denotes the better rule of law.

Source: "Nations in Transit 2009", Freedom House, press release from June 30, 2009, <http://www.freedomhouse.hu/images/nit2009/tables.pdf>

Table 2.1. Ukraine's Privatization: Distribution by Its Methods, 1994-1998.

Type of Privatization	Net Worth, mln UAH	Distribution by methods of privatization, %	
		MEBO	Direct Sale

Large-scale	10,036.2	95.1	4.9
Small-scale	1,211.7	44.3	55.7

Source: State Property Fund of Ukraine, 2009.

Table 2.2. Ukraine's Private Sector Development, 1994-2008

	Indicators	1994	2008
1.	Share of Property Registry	10	88.5
2.	Share of Industrial Sector	4	92.5
3.	Share of Agricultural Sector	3	80
4.	GDP share	35	85
5.	Labor force share	16.1	86
6.	Share of Real estate	15	90
7.	Share of Hydrocarbon output	3	71.1
8.	Share of Manufacture output	11	96.1
9.	Share of Banking sector	20	91
10.	Share of Exports	18	92.2

Source: WDI (2009), UKRSTAT Annual Report, 1995 and 2009.

Table 2.3. Comparative Assessment of Institutional Quality
in Ukraine and Russia, 1994-2008

Indicators	1994		2008		Δ	Δ
	RU	UA	RU	UA	RU	UA
GDP per capita, PPP (\$)	6,559	3,577	15,921	7,347	+9,362	+3,770

Large-scale privatization score	3	1	3	3	0	+2
Small-scale privatization score	3	2	4	4	+1	+2
Trade & Forex System score	3	1	3.33	4.33	+.33	+3.33
Banking Liberalization score	2	1	2.67	3	+.67	+2
Infrastructure reform score	1.67	1	2.67	2.33	+1	+1.33
Index of economic freedom	51.1	39.9	49.8	51.0	-1.3	+11.1
Democracy score (2007 est)	6	6	5	7	-1	+1

Sources: EBRD's Transition Indicators, Heritage Foundation, Polity IV.

Table 2.4. Extension of the Regression Theorem of Institutional Stickiness

Type of institution	Acronym	Degree of Institutional Stickiness
Foreign-introduced Exogenous	FEX	0
FEX & IEX	FIEX	.25
Indigenously Introduced Exogenous	IEX	.5
FEX & IEN	FIEXN	.75
Indigenously Introduced Endogenous	IEN	1

Table 3.1. Ukraine's Agro-producing Industry, 2005.

Indicator/Type of Farm	Cooperative	Private
Land area (ha)	1764.9	1021.65
Number of employees	108	88
Net worth (ths. hryvnia per 100 ha)	344.5	227.2
Profit per 100 ha (ths. hryvnia)	5.6	19.55
Profit per worker (ths. hryvnia)	0.9	4.05
Revenue per worker (ths. hryvnia)	15.3	29.33
Revenue per 100 ha (ths. hryvnia)	93.6	142.05
Profit margin (%)	1.4	10.45
Annual wage (ths. hryvnia)	2.9	3.6
Value added per worker (ths. hryvnia)	3.8	7.65
Value added per 100 ha (ths. hryvnia)	23.3	36.8

Share from the total number of farms (%)	12.5	82.1
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Source: State Statistics Committee of Ukraine, Annual Report on Agro-producing Industry, 2005.

Table 3.2. Profit Margin in Ukraine's Agriculture, 2003-2004.

	2003			2004		
	Kharkiv province		Ukraine	Kharkiv province		Ukraine
	Coop	Private	Average	Coop	Private	Average
Profit margin (%):						
Grain	29.8	47.2	41.7	8.8	22.4	20.3
Cereals	37.3	58.3	45.8	14.4	23.5	20.1
Sunflower	67.2	71.3	64.3	35.3	47.2	45.2
Sugar beets	5.1	13.5	6.2	-7.5	0.3	-0.8
Profitable farms (%)	53.3	62.3	67	50	74	72
Obs.	51	349	10256	47	318	11820

Source: State Statistics Committee of Ukraine, Annual Reports on Agro-producing Industry, 2003-2004.

Table 3.3. Summary Statistics, Private Farms and Cooperatives in 2006.

Variable	Values	Private farm		Producer cooperative	
		Mean	Std. Dev.	Mean	Std. Dev.
Revenue	ths. hryvnia	2079.6	2594.3	1462.2	1412.3
Revenue per worker	ths. hryvnia	43.1	45.5	25.1	16.8
Revenue per man hour	hryvnia	37.2	57.8	22.5	18.9
Revenue per ha	hryvnia	828.3	730.4	606.7	458.4
Capital-labor ratio	hryvnia	7.9	12.6	5.3	3.6
Net worth per worker	ths. hryvnia	112.8	210.1	175.8	275.3
Net worth per hectare	ths. hryvnia	2.08	3.39	3.07	3.44
Fuel cost per ha	hryvnia	179.6	114.1	170.0	109.1
Seed cost per ha	hryvnia	131.6	85.6	106.2	65.2
Fertilizer cost per ha	hryvnia	109.4	142.8	98.0	143.3
Capital cost	ths. hryvnia	1590.0	1832.2	1274.8	1096.7
Capital costs per ha	hryvnia	630.9	466.7	551.8	396.2
Number of workers	people	51.0	48.3	56.2	46.3
Monthly wage	hryvnia	436.9	248.5	377.8	173.8
Man hours	ths. hours	69.9	73.9	80.3	78.9
Labor cost per ha	hryvnia	121.2	130.5	121.6	85.6
Labor costs	ths. hryvnia	271.9	286.5	285.1	342.6
Agricultural land	hectares	2487.0	1812.6	3491.6	5661.8

Arable land	hectares	2256.5	1698.2	2181.6	1330.1
Rented Land	hectares	2432.6	1802.7	2460.4	2029.8
Land lease payment	hryvnia	235.8	239.1	221.2	207.4
Profit margin	%	2.3	-27.4	-7.4	-25.9
Net worth	ths. hryvnia	4869.6	7655.6	7023.1	6452.4
Observations		497		36	

Note: In 2006 the average exchange rate between hryvnia and the US dollar was: 5.06 UAH = 1 USD.

TABLE 3.4. Effect of Governance System on Productive Efficiency, 2006:
OLS Estimation Results

Dependent variable: Revenue						
	(1)	(2)	(3)	(4)	(5)	(6)
Cooperative	-0.181*	-0.179*	-0.187**	-0.191**	-0.188**	-0.187*
	(0.07)	(0.08)	(0.07)	(0.07)	(0.07)	(0.08)
Land area	0.157**	0.230***	0.108*	0.182*	0.118*	0.178*
	(0.05)	(0.07)	(0.05)	(0.07)	(0.06)	(0.07)
Capital cost	0.819***		0.777***		0.834***	
	(0.04)		(0.04)		(0.04)	
Fertilizer cost		0.270***		0.259***		0.275***
		(0.03)		(0.03)		(0.03)
Seed cost		0.229***		0.235***		0.227***
		(0.05)		(0.05)		(0.05)
Fuel cost		0.234***		0.181**		0.229***
		(0.06)		(0.06)		(0.06)
Man hours	0.116***	0.101*				
	(0.03)	(0.04)				
Wages			0.192***	0.196***		
			(0.03)	(0.04)		
Number of workers					0.149***	0.167**
					(0.03)	(0.06)
R-squared	0.88	0.83	0.89	0.84	0.88	0.83
Observations	535	450	533	448	535	450

Note: Each column represents coefficients (standard errors) from a separate regression. Baseline category is *private firm*. Robust standard errors are in the parentheses.

*** Significant at the .1 percent level.

** Significant at the 1 percent level.

* Significant at the 5 percent level.

TABLE 3.5. Technical Efficiency Scores, Private and Cooperative Firms, 2006

Privately-owned firm					
	Mean	Std. Dev.	Min	Max	Obs.
TE score	0.76	0.12	0.30	0.92	497
TE score	0.73	0.11	0.34	0.92	497
TE score	0.68	0.16	0.19	0.92	497
Employee-owned firm					
	Mean	Std. Dev.	Min	Max	Obs.
TE score	0.73	0.13	0.47	0.89	36
TE score	0.68	0.10	0.48	0.86	36
TE score	0.62	0.15	0.29	0.87	36

Note: Technical efficiency scores are estimated in three ways: first, with a province variable as control for external effect on technical efficiency; second, estimated via general frontier model; and, third, estimated with weighted variance covariates.

TABLE 3.6. Effect of Governance System on Productive Efficiency at Province and Product Level: OLS Estimation Results

Dependent variable: Revenue							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cooperative	-0.199** (0.06)	-0.222*** (0.06)	-0.206*** (0.06)	-0.164** (0.06)	-0.170** (0.06)	-0.175** (0.06)	-0.167** (0.06)
Land area	0.098* (0.05)	0.070* (0.07)	0.059* (0.06)	0.151** (0.06)	0.167** (0.07)	0.102* (0.06)	0.114* (0.06)
Capital cost	0.806*** (0.04)		0.824*** (0.04)	0.709*** (0.04)		0.665*** (0.04)	0.717*** (0.04)
Fertilizer cost		0.249*** (0.02)			0.237*** (0.02)		
Seed cost		0.272*** (0.05)			0.211*** (0.05)		
Fuel cost		0.142* (0.06)			0.164** (0.06)		
Province	0.244*** (0.04)	0.276*** (0.04)	0.240*** (0.04)	0.180** (0.06)	0.221*** (0.06)	0.165** (0.05)	0.188*** (0.05)
Sugar beets				0.116* (0.05)	0.130** (0.05)	0.098* (0.05)	0.108* (0.05)
Corn				0.100* (0.04)	0.050* (0.04)	0.094* (0.04)	0.097* (0.04)
Oats				-0.171***	-0.204***	-0.171***	-0.173***

					(0.04)	(0.04)	(0.04)	(0.04)
Soy beans					0.136**	0.179***	0.150***	0.154***
					(0.04)	(0.04)	(0.04)	(0.04)
Man-hours	0.126***				0.100**			
	(0.03)				(0.03)			
Wages		0.181***					0.167***	
		(0.03)					(0.03)	
Number of workers			0.157***			0.176**		0.143***
			(0.04)			(0.05)		(0.04)
R-squared	0.89	0.85	0.89	0.90	0.86	0.89	0.90	
Observations	535	448	535	535	450	533	535	

Note: Each column represents coefficients (standard errors) from a separate regression.
Baseline category is *private firm*. Robust standard errors are in the parentheses.

*** Significant at the .1 percent level.

** Significant at the 1 percent level.

* Significant at the 5 percent level.

FIGURES

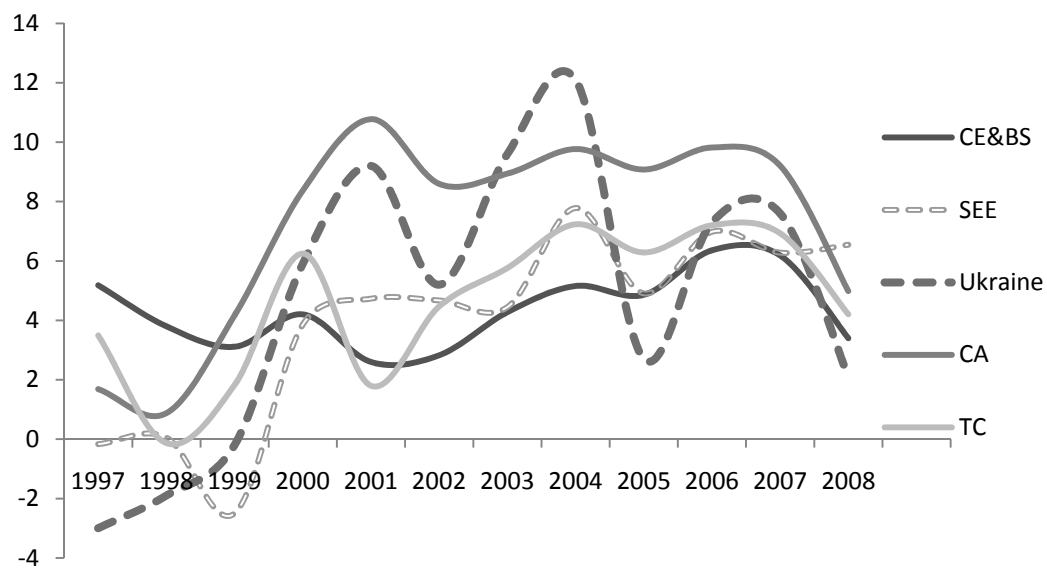


Figure 1. Real GDP Growth in Post-Socialist Countries (%), 1997-2008

Note: I use EBRD's classification of countries: Central Europe and the Baltic States (CE&BS), South Eastern Europe (SEE), Central Asia (CA), and Transitional Countries (TC).

Source: EBRD online database, <http://www.ebrd.com/country/sector/econo/stats/index.htm>.

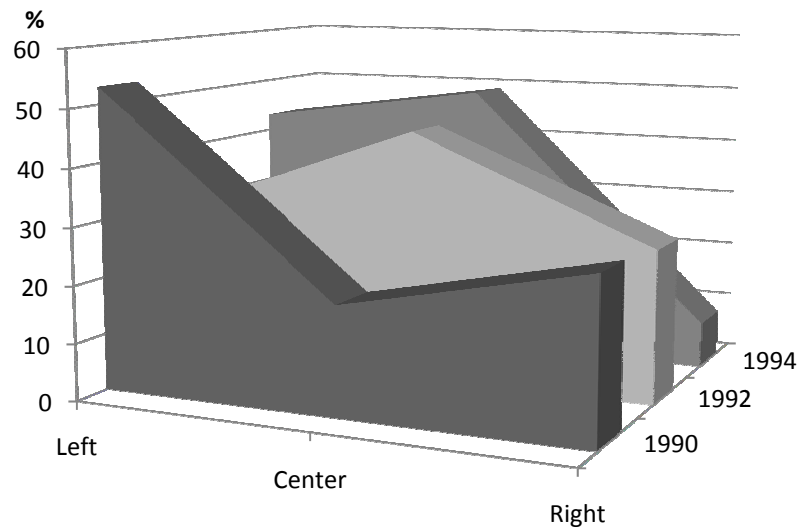


Figure 2. Ukraine's Parliament: Distribution of Seats by Ideological Position, 1990-1994 (%)

Source: Chronicles of USSR Parliament, Chronicles of Ukraine's Parliament.

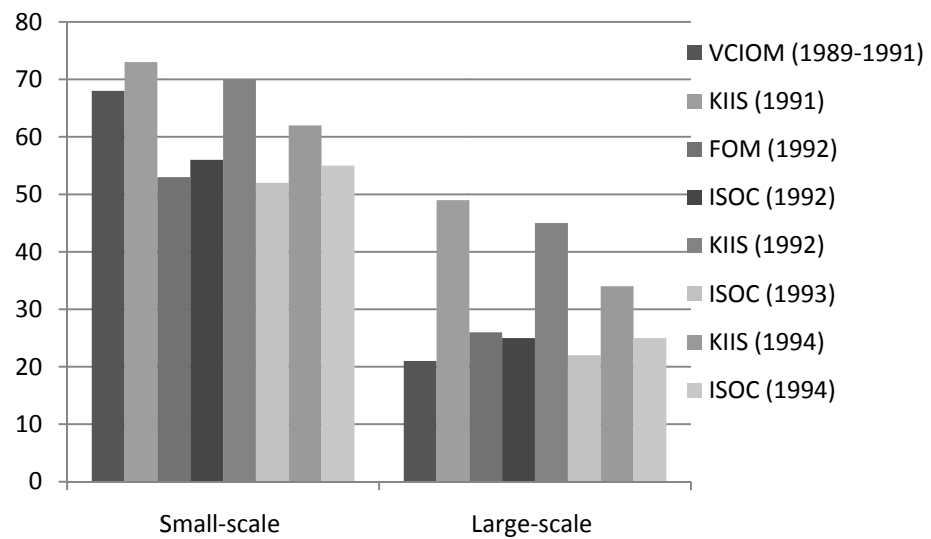


Figure 3. Ukraine's Public Support of Types of Privatization, 1989-1994 (%)

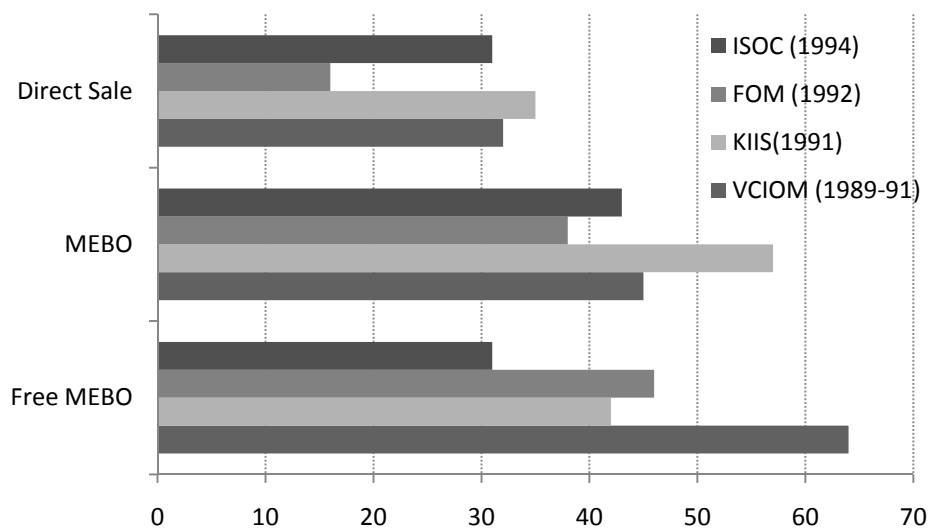


Figure 4. Ukraine's Public Support of Methods of Privatization, 1989-1994(%)

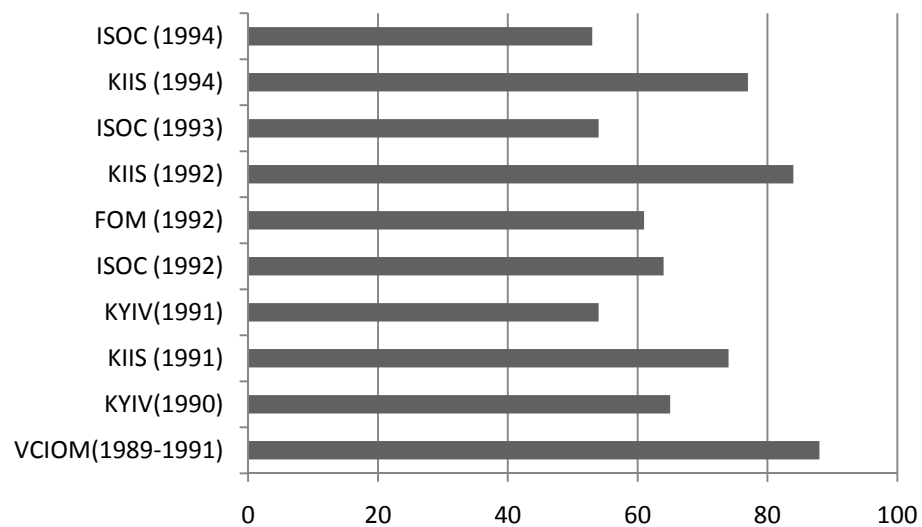


Figure 5. Ukraine's Public Support of Land Privatization, 1989-1994(%)

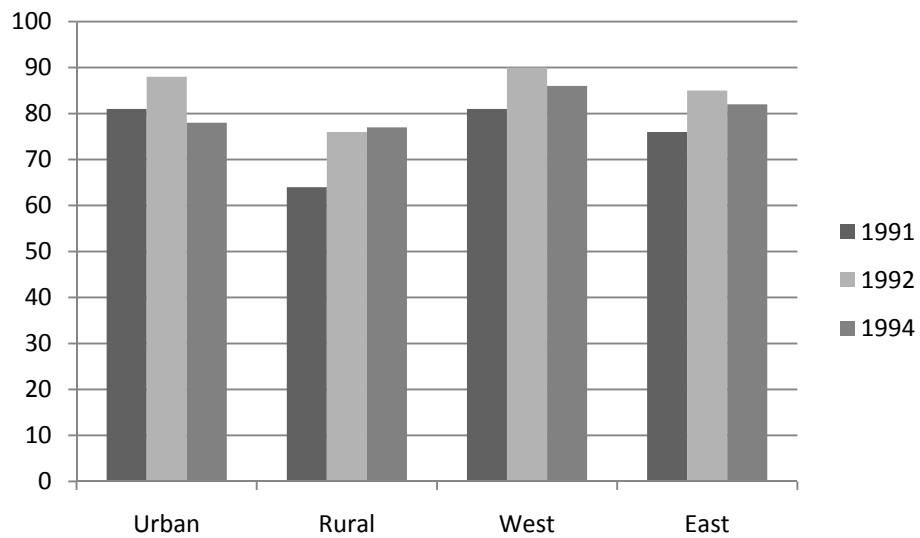


Figure 6. Ukraine's Public Support of Land Privatization by Area of Residence, 1991-1994(%)

Source: Kyiv International Institute of Sociology



Figure 7. Map of Ukraine

Note: The field work was conducted in Kharkiv, Kyiv, Sumy and Zaporizhzhya provinces.

APPENDIX

In summer 2008 I conducted a field work in Ukraine. The study included 47 face-to-face and 11 follow-up interviews with the main stake-holders of privatization. The following table that contains a list of interviews describes a place of each interview and a position of each interviewee.

List of Interviews

N	City/Village	Province	Position	Organization
1	Pisarevka	Kharkiv	Chairman	Frunze Farm
2	Pekelne	Kharkiv	Chairman	Zapovit Lenina Farm
3	Blagodatne	Kharkiv	Chairman	Druzhba Farm
4	Starovirovka	Kharkiv	Chairman	Druzhba Farm
5	Babayi	Kharkiv	Chairman	Krasnyi Partizan Farm
6	Velyki Velmi	Sumy	Chairman	Pershe Travnya Farm
7	Basivka	Sumy	Chairman	Iskra Farm
8	Okhtirka	Sumy	Chairman	Sud Farm
9	Tokari	Sumy	Chairman	Sumsky Lani Farm
10	Velyky Bobrik	Sumy	Chairman	Viktoria Farm
11	Goryane	Kharkiv	Chairman	Mayak Farm
12	Berdyanka	Kharkiv	Chairman	Frunze Farm
13	Kharkiv	Kharkiv	Chairman, retired	No affiliation
14	Basivka	Sumy	Chief Economist	Iskra Farm
15	Velyki Velmi	Sumy	Chief Economist	Pershe Travnya Farm
16	Samotovka	Sumy	Chief Economist	Urozhai Farm
17	Kharkiv	Kharkiv	Deputy	Kharkiv City Council
18	Kharkiv	Kharkiv	Deputy	Kharkiv City Council
19	Zolochiv	Kharkiv	Deputy Governor	Zolochiv County Council
20	Kharkiv	Kharkiv	Deputy's Adviser	Kharkiv City Council
21	Velyki Velmi	Sumy	Economist	Pershe Travnya Farm
22	Sumy	Sumy	Entrepreneur	Self-employed
23	Zaporizhzhya	Zaporizhzhya	Entrepreneur	Self-employed
24	Kharkiv	Kharkiv	Executive director	Institute of Land Resources
25	Rawgun	Kharkiv	Farm owner	Self-employed

26	Sula	Sumy	Farm owner	Shepil Farm
27	Kushugum	Zaporizhzhya	Farm owner	Self-employed
28	Novodolaga	Kharkiv	Governor, retired	Novodolaga County Council
29	Zaporizhzhya	Zaporizhzhya	Lawyer	Zaporizhzhya Bar Association
30	Zaporizhzhya	Zaporizhzhya	Lawyer	Zaporizhzhya University of Humanities
31	Zaporizhzhya	Zaporizhzhya	Lawyer	Zaporizhzhya Bar Association
32	Kyiv	Kyiv	Policy adviser	President's Administration
33	Kyiv	Kyiv	Policy analyst	National Bank of Ukraine
34	Kyiv	Kyiv	President	NGO Center of Economic Development
35	Kharkiv	Kharkiv	Professor	Institute of Agricultural Economics
36	Sumy	Sumy	Professor	Sumy Agricultural Institute
37	Kharkiv	Kharkiv	Professor	Institute of Agricultural Economics
38	Sumy	Sumy	Sales Manager	Technotorg Company
39	Goryane	Kharkiv	Senior Accountant	Mayak Farm
40	Starovirovka	Kharkiv	Senior Accountant	Druzhba Farm
41	Berdyanka	Kharkiv	Senior Agronomist	Frunze Farm
42	Oleksyivka	Sumy	Senior Manager	Garant Farm
43	Pekelne	Kharkiv	Staff member	Zapovit Lenina Farm
44	Babai	Kharkiv	Staff member	Krasnyi Partizan Farm
45	Kyiv	Kyiv	Team Leader	UNDP Blue Ribbon
46	Kharkiv	Kharkiv	Vice President	Kharkiv Bureau of Statistics
47	Sumy	Sumy	Vice President	Sumy Bureau of Statistics

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