

University of Economics, Prague

Faculty of Economics

Field of Study: Economics and Economic Administration



Bachelor Thesis

**The role of Institutions in Economic
Development: case of Kazakhstan**

Author: Valeriya Sidorova

Thesis Supervisor: Ing. Robin Maialeh, Ph.D.

Year: 2019

I hereby declare that I wrote this bachelor's thesis independently and used only sources and aids indicated.

Valeriya Sidorova
Prague, 18.08.2019

Acknowledgements

I would like to thank my supervisor Ing. Robin Maialeh, Ph.D for his valuable support and useful remarks throughout the process of writing this thesis.

In addition, I am very thankful to the University of Economics for offering such an amazing course that gave me deep understanding of the economic theories and great life experience.



BACHELOR THESIS TOPIC

Author of thesis: Valeriya Sidorova
Study programme: Economics and Economic Administration
Field of study: Economics
Thesis supervisor: Ing. Robin Maialeh, Ph.D.

Title of the thesis: The role of Institutions in Economic Development: case of Kazakhstan

Language version: English

General content:

1. It is widely known that economic institutions play one of the leading roles in a country's economic wellbeing. This paper will discuss the importance of institutions' quality in Kazakhstan, which is one of the countries that rarely gets scientific attention in all means, including economics. Not to mention, that it is a good time to talk about the possible reforms that could stimulate the development process due to the recent, first in the country's history, change of government.
2. The aim of this thesis is to assess the impact of institutions' quality on economic wellbeing in Kazakhstan. In particular, it will look at the importance of secure property rights and proper jurisdiction to stimulate growth through investment. The hypothesis will be settled around the correlation between main institutional regulators(each will be studies separately) and economic performance of the country.
3. The theoretical part of the paper will summarize and assess the other works done on the correlation between social infrastructure and economic output. It will also discuss the main types of institutions and how they affect the economy generating different incentives. It will touch the theory of Public Choice and Coase Theorem to have a closer look at the incentives and behavioural patterns of economic entities.
4. The empirical part of this thesis will be based on a regression model that will study the mentioned above possible correlation. In addition, it will explain the methodology behind calculation of institutional indicators used in the model. These four main indicators will include corruption level, property rights protection, judicial independence, level of religious and ethnic tensions. Taking into account several successful and unsuccessful government decisions and its empirical impact on the country's output, the conclusion about the strength of their impact will be made.

Length of thesis: 45 standard pages

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Date of entry: June 2019

Date of submission: August 2019

Valeriya Sidorova
Solver

Ing. Robin Maialeh, Ph.D.
Thesis supervisor

prof. Ing. Robert Holman, CSc.
Head of department

prof. Ing. Zdeněk Chytil CSc.
Dean NF VŠE

Abstract

There is little evidence in the academic literature on this topic of economic institutions effect of the economic development in Kazakhstan. In this thesis we address this particular problem and identify that the institutions closely correlated with the economic growth in Kazakhstan. We start with a general overview of institutional economic field, make a review of its theories, summarise the results of the most outstanding works in the field and identify potential problems. We characterise Kazakhstan economy and observe positive development in terms of GDP per capita growth, inflation and unemployment reduction. Finally, using ordinary least squares we estimate the relationship between institutional indicators and real output per capita. The results show that control of corruption, government efficiency, rule of law and regulation quality are crucial for economic growth in Kazakhstan. Political stability and freedom of speech (voice and accountability) do not influence the economic growth in Kazakhstan.

Keywords: Corruption, Economic growth, Institutions, Kazakhstan, Institutional economics

JEL classification: O430, O530, P260

Table of contents

Introduction.....	8
1. Theoretical part.....	10
1.1. Definition and taxonomy of institutions	10
1.2. Institutions and the Economic Growth.....	13
2. Practical part	17
2.1. Analysis of Kazakhstan economy	17
2.2. Analysis of institutions in Kazakhstan	23
2.3. The institutional quality and economic development in Kazakhstan.....	27
Conclusion	36
List of tables.....	39
List of charts	40
List of references	41
Annexes	45
Annex 1. Main economic indicators of Kazakhstan	45
Annex 2. Structure of population in Kazakhstan	46
Annex 3. Structure of GDP by expenditure approach in Kazakhstan	47
Annex 4. Structure of GDP by production approach in Kazakhstan	48
Annex 5. World Governance Indicators for Kazakhstan	49
Annex 6. Regression results controlling for oil exports (price of WTI)	50
Annex 7. Regression results controlling for oil exports and GDP of trade partners (price of WTI)	51

Introduction

Institutions play a big role in people's lives and in the society. Good institutions may help people and effectively frame the behaviour of the others in such way that it is easy to predict what to expect from them. Poor institutions, in contrast, may bring the problem of non-efficient control, weak enforcement mechanisms etc. This idea was incorporated into the economic theory by the scholars working in the field of institutional economics. The first wave of institutional economists includes Thorstein Veblen, Wesley Mitchell, John R. Commons, and Clarence Ayres and mostly concentrates on the qualitative studies of institutional effects on economics. The most recent studies follow the mainstream methodology of quantitative economic analysis. They start with the works of Douglass North and further were developed by Daron Acemoglu, Nathan Nunn, Melissa Dell and other authors. Although these authors succeeded to prove empirically that institutions may shape an economic development and influence economic growth, many questions are still unanswered. Particularly, how economic development depends on the institutional change. There is a long process of transition from planned to market economy in post-socialist countries which also includes changing of institutions. If the institutions affect economic growth, then how change in institutions, and in which particular institutions, may accommodate this economic growth better?

In the first part of the thesis we make an outline of new institutional economics field, providing necessary definitions of institutions, taxonomy of institutions, main theories within the field together with the review of most influential studies on institutions and economic growth. We also identify which aspects of new institutional economics methodology are criticised to be aware of potential weaknesses in the research.

In this thesis we use the analysis of selected macroeconomic indicators, including GDP, inflation and unemployment. To establish the empirical relationship between institutions and economic development in Kazakhstan we use linear regression model and OLS estimation. This is a standard approach in the field of empirical institutional economics, when some quantitative indicators related to the institutions are used as explanatory variables to the economic outcomes, such as real GDP or GDP growth.

The objective of this thesis is to evaluate the impact of institutional quality on the economic wellbeing in Kazakhstan. Particularly, we want to answer the following questions:

- How institutions in Kazakhstan have recently changed?
- Do institutions matter for economic growth in Kazakhstan?
- Which particular institutions matter for economic growth in Kazakhstan?

In order to answer these questions, we employ the methods discussed above.

1. Theoretical part

1.1. Definition and taxonomy of institutions

The origins of New Institutional Economics start with papers from Ronald Coase, “The Nature of the Firm” (1937) and “The Problem of Social Cost” (1960), but the “Godfather” of New Institutional Economics is Douglass North, who published his books “Institutional Change and American Economic Growth” (1971) and “The Rise of the Western World: A New Economic History” (1973).

The neoclassical economic theory assumes that the market equilibrium is established automatically through the adjustment of supply and demand with the help of price mechanism. Firms are profit maximizers and react to shifts in relative prices of inputs through their production decisions. Consumers are utility maximizers and make their choices in response to changes in relative prices of goods.

Such views together with the perfect information, rational behavior, instantaneous exchange and other assumptions were inherited by macroeconomic theories of economic growth based on micro-foundations. Cross-country differences in economics growth they explained with the differences in human capital (Lucas, 1988), public infrastructure (Barro, 1990), incentives to innovate (Romer, 1990) and other types of endowments.

New institutional economics questioned the assumptions of neoclassical economics. Particularly, North (1990) argued that the main factor of economic development both in the long and short-run is institutions. Thus, institutions put limits on choice sets of individuals and serve as natural constraints for their decisions.

North (1981) defines institutions as “the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic”. Economic institutions may influence the structure of economic incentives in a society, which in turn may force individuals into specific ways of resource allocation and property rights protection.

North also states that institutions may be viewed as formal rules or informal constraints. The examples of the latter are “code of conduct, norms of behavior, and conventions...

which come from socially transmitted information and are a part of the heritage that we call culture” (North, 1990). Same formal rules in societies that inherited different cultures, may produce different economic outcomes.

North says that “formal rules include political (and judicial) rules, economic rules, and contracts. The hierarchy of such rules, from constitution, to statute and common laws, to specific bylaw, and finally to individual contracts defines constraints, from general rules to particular specifications. Political rules broadly define the hierarchical structure of the polity, its basic decision structure, and the explicit characteristics of agenda control. Economic rules define property rights as the bundle of rights over the use and the income to be derived from property and the ability to alienate an asset or a resource. Contracts contain the provisions, specific to a particular agreement in exchange”.

Together with the definition of institutions as “the rules of the game” other authors suggest their ideas, including “set of conventions and rules of action prevailing in the economy” (Kratke, 1999), “settled habits if thought common to the generality of men” (Veblen, 1899), “regularities of people’s actions” (Neale, 1994), “collective action in control, liberation and expansion of individual action” (Commons, 1950), “standardized social habits” (Mitchell, 1950), “codes of conduct” (Young, 1994), “patterns of behavior, negative norms and constraints” (Coriat and Dosi, 1998) and others.

Parto (2003) accounts three groups of descriptions of institutions: “form-based”, “behavior-based” and “context-based”. “Form-based” definitions mainly describe institutions as formal rules or establishments made by people and regulating their lives, such as language, government, the church, laws etc. As he argues, these formal institutions evolve as institutionalized behavior. The next group, “behavior-based definitions” treat institutions as “the constraints that human beings impose on themselves” (North, 1990) in order to shape their behavior at different levels: individual, organizational or societal. Finally, “context-based” descriptions institutions are viewed as a product of human interactions, emerging from the society.

Scott (2001) states three aspects of institutions, based on the context of economic activity involved: regulative, normative, and cultural-cognitive. The regulative side comprises setting the rules, monitoring and sanctions. From this prospective a state serves as a “rule-maker, referee and enforcer”. The normative side of institutions establishes constraints on the behavior of society, motivate one social action and suppress another. This

normative aspect exists mostly among kinship groups, social classes, voluntary associations, religious belief systems etc. All of them share the common feature that their participants share similar views or beliefs. The cultural-cognitive aspects of institutions provide a common social reality and similar meaning for social groups. Those are conceptions and frames shared by people and, by their means, people can understand each other and behave meaningfully in accordance to others expectations.

There are many subfields within the broad field of New Institutional Economics. In the next part we will briefly summarize the main braches of this field.

The theory of the state developed by North claims that the state is responsible for the process of setting property rights, rules of games and for the formation of other institutions. According to North, state plays a role of monopolist which maximize its income through the process of contract enforcement, property rights settlement and transaction costs reduction. The state issues laws that establish cooperative rules of the game, help to reduce transaction costs and maximize output. Further, the state in some cases has an advantage of economies of scale which help to reduce transaction costs for individuals. Lastly, the state is able to specify property rights and promote investor incentives.

The theory of institutional change studies the ways how institutions emerge and change. This theory explains the institutional changes with three different reasons. First, institutions change due to the evolution of social conventions. Second, institutions change in response to strategic conflict. Third, institutions change as a result of competition and selection.

The theory of property rights was developed by Demsetz (1967), Furubotn and Pejovic (1974) and Alchian and Demsetz (1972). The concept of property rights extends beyond the legal ownership of assets. Demsetz (1967) defines property rights as “an instrument of society [and] they help a man form ... expectations which he can reasonably hold in his dealings others. These expectations find expressions in the law, customs, and mores of a society”.

Property rights include three different types: rights to use an asset, right to earn a return from an asset, and right go transfer an asset to another party. These three types may be attributed to one or more people at the same time, thus, partitioned. For example, in some countries the state may own a land exclusively, but farmers are empowered by other rights

to use a land. Regulations may restrict, or attenuate, property rights. In this case the efficiency of property rights falls.

Property rights serve mainly to promote higher return on assets. Strong property rights may reduce transaction costs, which in turn leads to economic growth through higher efficiency and maintains profit. North in his book claims that “evolution of a body of property rights which promoted institutional arrangement, leading a fee-simple absolute ownership in land...and a host of institutional arrangements to reduce market imperfections in product and capital markets” (North, 1973). Small changes in property rights may significantly impact economic performance through economic incentives.

Transaction cost theory started with the work of R. Coase (1937). In order to answer the question why the firm exists he states that “the main reason why it is profitable to establish a firm would seem to be that there is a cost of using the price mechanism” (Coase, 1937). Transaction may be defined as a transfer of goods or services between individuals, as an exchange between different parties. Transactions may occur within a firm, on the market, or between government and individuals. Transaction costs are related to the costs of exchanging ownership rights to assets and of exclusive rights enforcement. Transaction costs may be divided into costs of contract arrangement, monitoring and enforcing costs, costs of search a business partners, suppliers and others.

The size of transaction costs depends on uncertainty, the frequency of transactions, and the degree of assets specificity. Uncertainty increases costs of negotiation, communication and coordination, enforcement and monitoring costs. Frequent transactions are associated with lower transaction costs, while one-time, unique, transactions may invoke much higher costs. Partially this effect works due to the fact that frequent transaction between same parties generates trust, establishes interdependence and reduces the possibility of opportunistic behavior. Assets specificity affects transaction costs in a way that transactions with unique and specific assets have higher risk of opportunistic behavior. As a result, negotiating, monitoring, enforcement costs increase.

1.2. Institutions and the Economic Growth

One of the most influential works in the field of economic institutions and growth is “The Colonial Origins of Comparative Development: An Empirical Investigation” by

Acemoglu, Johnson and Robinson (2001). In the paper the authors argue that the level of current economic development in former colonies depends on the type of economic institutions established by colonizers back in time.

To provide direction of causality (institutions affect growth, but not the other way round), they proposed that the type of institutions initially was dependent on the climate conditions which in turn affected settlers' mortality. When Europeans came to some land, and if the climate conditions were friendly, they established "European-like" institutions, which currently provide better economic development of these areas. On contrast, if the climate was such that many settlers died due to poor weather or mortal deceases, Europeans established in the area extractive institutions, which now translate into poor property rights protection and weak economic development. The ultimate result of this paper states that better institutions affect better economic development.

The paper of La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998) analyses the difference between continental (French) civil law and British common law impact on the corporate shareholders and creditors protection. This paper finds that the legislative institutions may influence the financial activity. Countries with French-civil law have weakest, while countries with British-common-law have strongest investor protection. Also countries with German- and Scandinavian-civil law are located in the middle.

The topic of exogenously established institutions is also studied in the paper "The persistent effects of Peru's mining Mita" by Melissa Dell (2010). Mita was a forced mining labor system in Peru and Bolivia developed by Spanish colonizers in 1573-1812. Mining was a major colonial activity at that time and indigenous population was obliged to send 1/7 of adult males to support mining. The author explains this in a way that the local elites were looking for people whom they wanted to send in mines, which reduced trust in society and destroyed institutions. Particularly, up until nowadays the mita-districts have lower share of large landowners due to the fact that colonizers restricted the formation of large farms. During the late 19th and 20th centuries massive confiscation of peasant lands occurred, resulting in rebellions and banditry. In turn, non-mita districts had more secured property rights since 17th century and have better public goods provision nowadays. The author explains this effect in a way that the large landowners may influence public spending decisions through political connections contributing the whole society and facilitating economic growth.

Nathan Nunn explores the effects of slave trade on current development of African countries. He finds that those areas where slaves were exported extensively, nowadays have poor economic development. The paper provides an evidence that before slave trades occurred those areas were most economically developed. Then the slave trades destroyed ties between villages, discouraged formation of large communities and caused self-concentration of ethnic groups. Another consequence of slave trades is weakening of states. This in turn undermined economic development, the effect which remains until now.

Many papers on institutions do not try to distinguish different institutions and their importance for the economic growth. Acemoglu and Johnson (2005) made an effort to overcome this problem. They study two types of institutions: “property rights institutions” and “contracting institutions”. The first type serves to protect agents against expropriation by the government or powerful elites, the second enforces private contracts between agents. The findings of this paper state that property rights institutions matter for the economic growth, investment and financial development, while contracting institutions influence only the way how financial intermediation is organized in the country.

Institutional view on economic growth has some weaknesses which we briefly discuss here.

First, there is no consensus on what exactly institutional variables should be to empirically test the theories. The problem of measuring institutions arises particularly from a broad definition of institutions, which brings many incomparable measures. Most of the empirical works base their analysis on different types of “proxies” for institutions which are close to the authors’ ideas. Another problem with the institutions measurement is attributed to the process of their formation. Many variables are constructed from qualitative surveys and quantitative data and, in fact, are aggregates. Moreover, the interest in institutional measures has emerged recently and the timespan of available data is quite short.

Second, the common problem for most empirical works on institutions is the problem of reverse causality. It is not clear, whether better institutions cause faster economic development, or prosperous countries may allow themselves better institutions. Although, we analyzed some works (e.g. Acemoglu et al (2001), Nunn (2008), Dell (2010)) where the authors successfully deal with the reverse causality problem, the question is still open.

For example, Farr, Lord and Wolfenbarger (1998) using Granger causality test find that Business Environmental Risk Intelligence (BERI) index contains no information to predict future economic growth. On the other hand, economic growth is able to predict better institutional quality and the results are valid for all individual elements of BERI index.

Third, many works on institutions and economic growth address the problem of endogeneity with the help of instrumental variables. Acemoglu et al (2001), La Porta et al (1998), Nunn (2008) did the first steps in this direction and established the commonly accepted framework. But in the growing literature the very same instruments are used for different institutional indicators without any distinction between the types of institutions they are supposed to affect.

Fourth, many studies use panel data on countries with time-invariant institutional characteristics, which causes a problem when estimating fixed-effects models, because in this case all time-invariant characteristics are eliminated. A possible solution to this problem may be using institutional changes characteristics.

Last, most of the literature on institutions and economic growth uses level of GDP as an outcome variable, while it is possible that institutions affect GDP growth rates rather than current level of GDP. This critique comes from Sachs (2003), who states that since GDP is a dynamic variable, we must correctly specify the model to reveal the relations between institutions and economic growth.

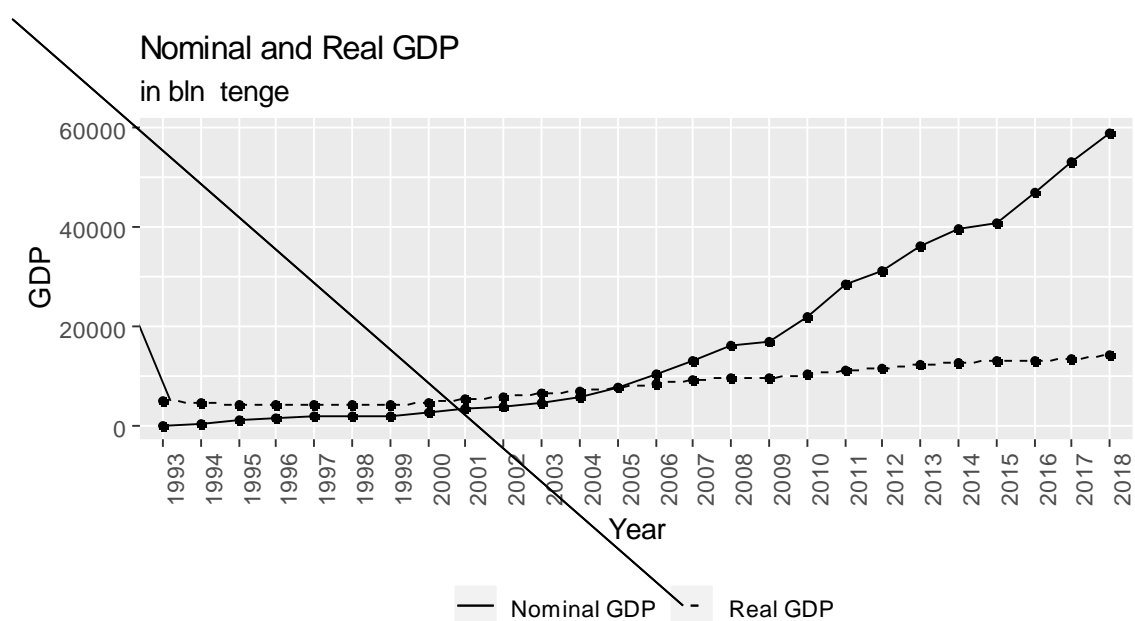
To conclude, the institutional economics is a developing field of economic science having already different branches and theories. The contribution of scholars from this field is that they incorporated institutions in the framework of economic growth analysis, which is definitely reasonable step. Many papers on institutions support the idea that institutions matter for the economic growth. Moreover, studies proved the direction of causality, that actually institutions influence economic development, but not the other way round. Although, some studies have successful results, there is also critique of institutional methodology, mostly based on the fact that it is hard to measure institutions and to interpret meaningfully those numbers. The data on institutional measures is also very limited in terms of time scope.

2. Practical part

2.1. Analysis of Kazakhstan economy

In this section, we provide a brief overview of Kazakhstan economic development to set the stage for further analysis of the relationship between political institutions and economic development. For this analysis we use two main sources of data: World Development Indicators of Worldbank and databases of the Statistics committee of Ministry of National Economy of the Republic of Kazakhstan. Most of the data is available for the period 1993-2018 and we explore the whole period, unless the data is unavailable.

We start the analysis with the most general measure of economic activity – gross domestic product. Figure 2.1 shows the dynamics of nominal and real GDP for the period 1993-2018.



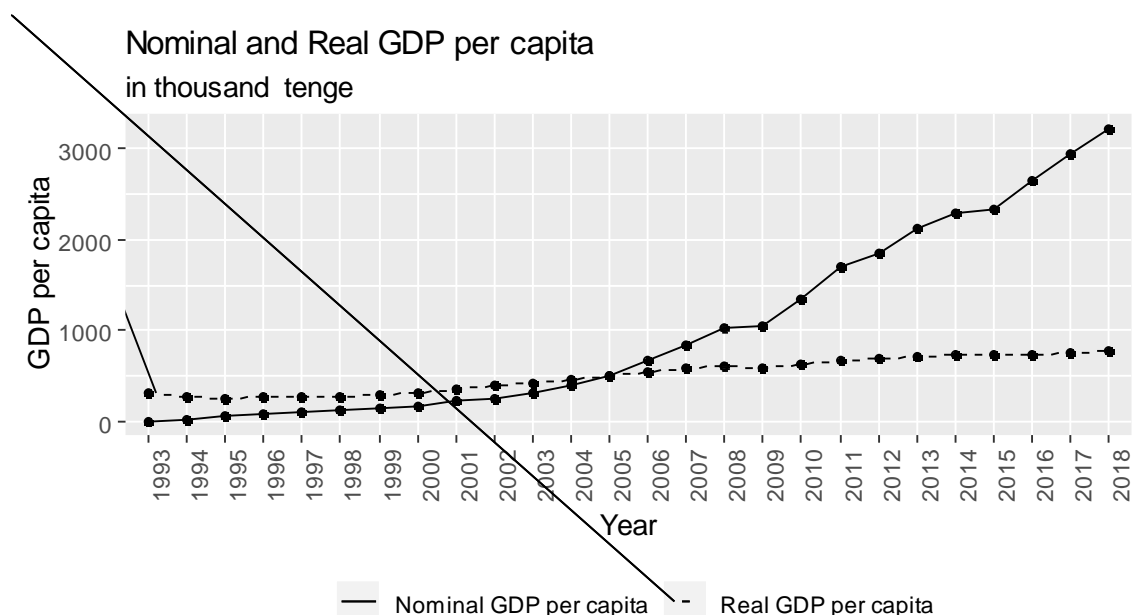
Source: Worldbank (2019)

Figure 2.1. Nominal and real GDP in Kazakhstan, 1993-2018

Real GDP is calculated with 2005 as a base year. We can observe that the production started from almost zero point in 1993, one year after the independence, and then even stagnated in real terms until 1998. At the same time nominal GDP demonstrated steady growth, which is an evidence of high inflation. Real output reaches its minimum in 1998

and then the dynamics reverses. For the next 20 years Kazakhstan almost tripled its production. Such high growth rate may be explained either by low starting position or by successful economic reforms. For the period 1998-2018 nominal GDP increased by 34 times.

We turn our attention to the measure of relative welfare of the nation: GDP per capita. On figure 2.2 nominal and real GDP per capita are displayed. Due to high level of population outflow in the first half of 1990th the real GDP per capita stays almost stable until 1998, in contrast with its absolute value. Then it takes off and increases 2.8 times by 2018. Nominal GDP per capita increases by 28 times for the same period. Based on this measure we can state that since independence Kazakhstan improved the relative welfare of its citizens in terms of production. It means that for the analysed period each person on average can consume more by around 2.8 times.



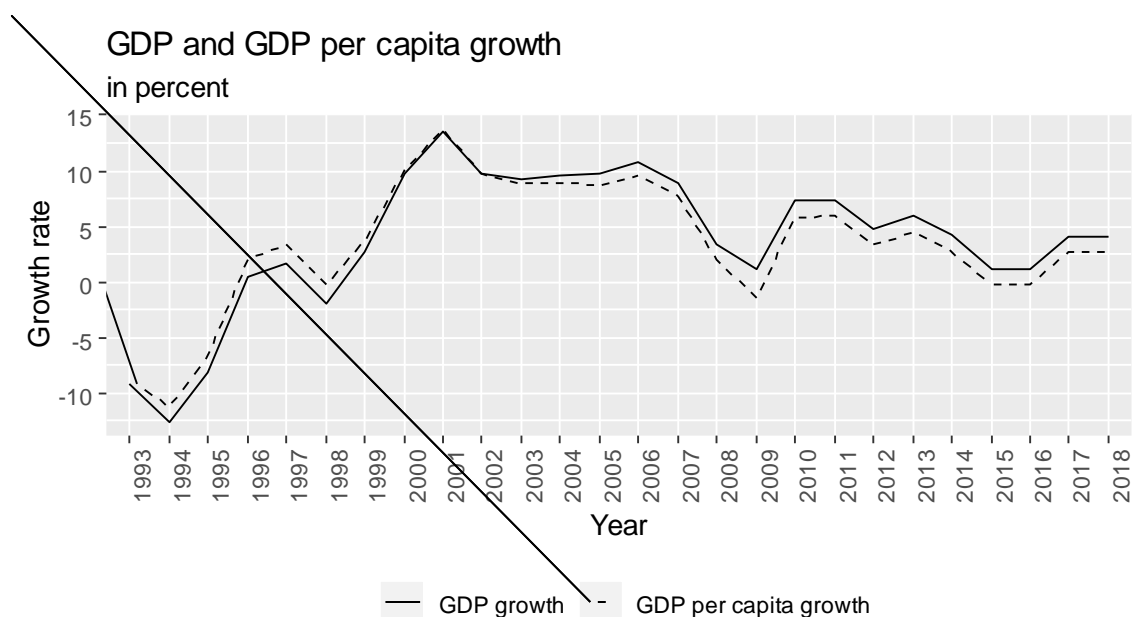
Source: Worldbank (2019)

Figure 2.2. Nominal and real GDP per capita in Kazakhstan, 1993-2018

We move to the growth rates of real GDP and real GDP per capita. Growth rates can supplement an analysis of production dynamics showing explicitly how the output developed over the time.

Solid line on Figure 2.3 shows real GDP growth rate. We see that the growth rate reaches its minimum, -12.6%, in 1994 and then moves to positive numbers. The peak in production growth rate, 13.5%, is reached in 2001 and then steadily declines but stays

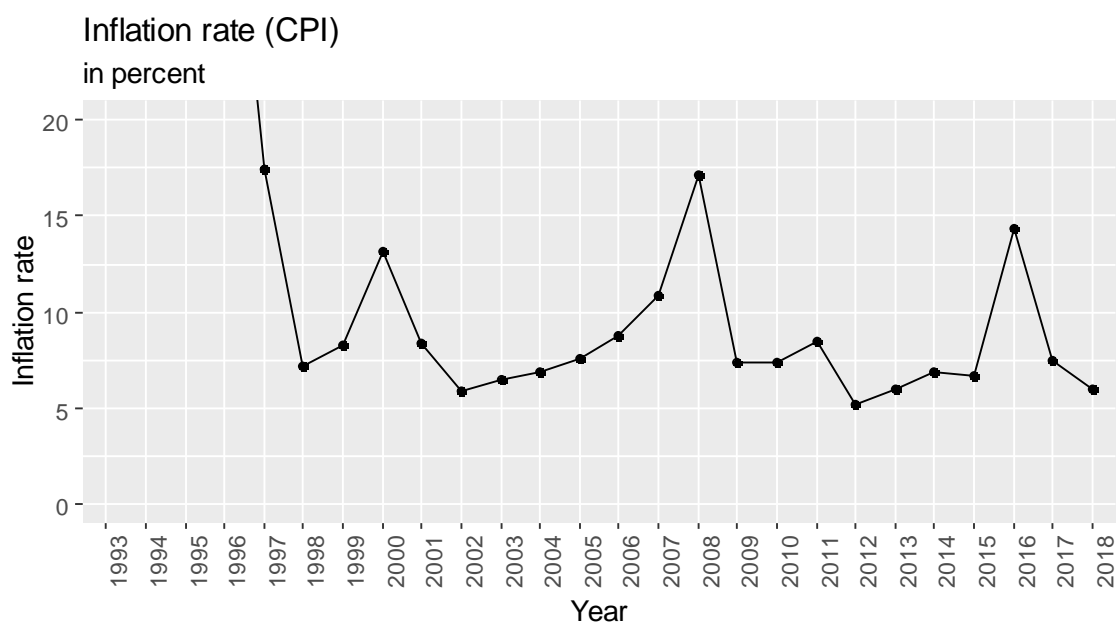
positive. Even financial crisis of 2008 had no negative effect on the output growth, which slightly declined to 3.3% in 2008 and to 1.2% in 2009.



Source: Worldbank (2019)

Figure 2.3. Real GDP and real GDP per capita growth rates in Kazakhstan, 1993-2018

The growth rate of GDP per capita in general shows the same dynamics and, thus, we do not describe it in details.



Source: Years 1993-2017: Worldbank (2019), Year 2018: Statistics committee of Kazakhstan (2019)

Figure 2.4. Inflation rate in Kazakhstan, 1995-2018

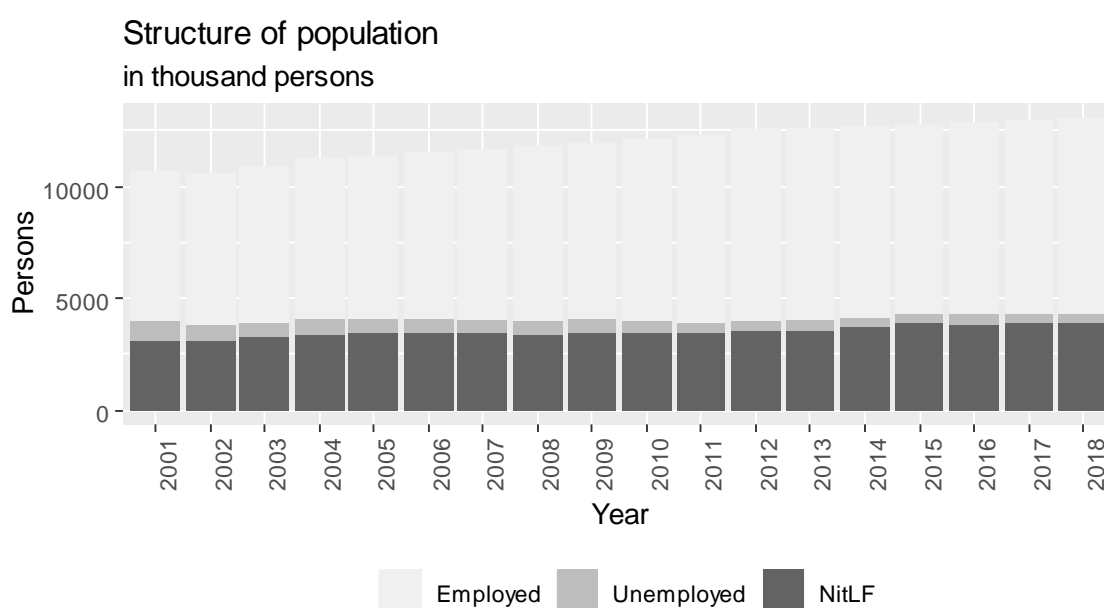
Inflation is the other indicator of economic development and social welfare. On figure 2.4 we plot the graph of inflation rate based on CPI for the period 1996-2018. We truncated the y-axis due to the fact that inflation for 1994 amounted to 1877.37% and in 1995 to 176.16% (see Appendix 1 for details).

Overall inflation in Kazakhstan may be characterized as moderate with the lower bound of 5.2% reached in 2012. Price level grows faster in 2008 (17.14%) and 2016 (14.36%). These two peaks are connected with devaluation of tenge relative to US dollar and Euro caused by oil prices decline.

The moderate level of inflation explains growing discrepancy between nominal and real GDP in levels and per capita.

Together with GDP and inflation the third main macroeconomic indicator is an unemployment rate. The data for the employment is provided by Statistics committee of Kazakhstan only for the period 2001-2018.

Figure 2.5 and appendix 2 describe the structure of population in Kazakhstan in terms of labor market. First, we see the increase in the population from around 10 mln to 13 mln people. The number of employed persons also increases from 6.7 mln to 8.7 mln. At the same time the ratio of employed to the whole population stays nearly the same: around 63-66%.



Source: Statistics committee of Kazakhstan (2019)

Figure 2.5. Structure of population in Kazakhstan, 2001-2018

Ratio of people not in labor force over the analysed period is almost constant and amounts to 28-30%.

The number of unemployed people steadily decreases from 780.30 thousand persons in 2001 to 443.64 thousand persons in 2018. Together with the increase in the number of employed persons it causes the decline in the unemployment rate.

Figure 2.6 shows the dynamics of unemployment rate over the period 2001-2018. This indicator demonstrated constant decline from 10.4% in 2001 to 4.9% in 2018. This can explain to some extent the expansion of output during the same period. Since the unemployment at its lowest point, this extensive factor of GDP growth may not work in the future and Kazakhstan should explore some intensive factors, including increase in productivity, in quality of human capital, technological level and others.

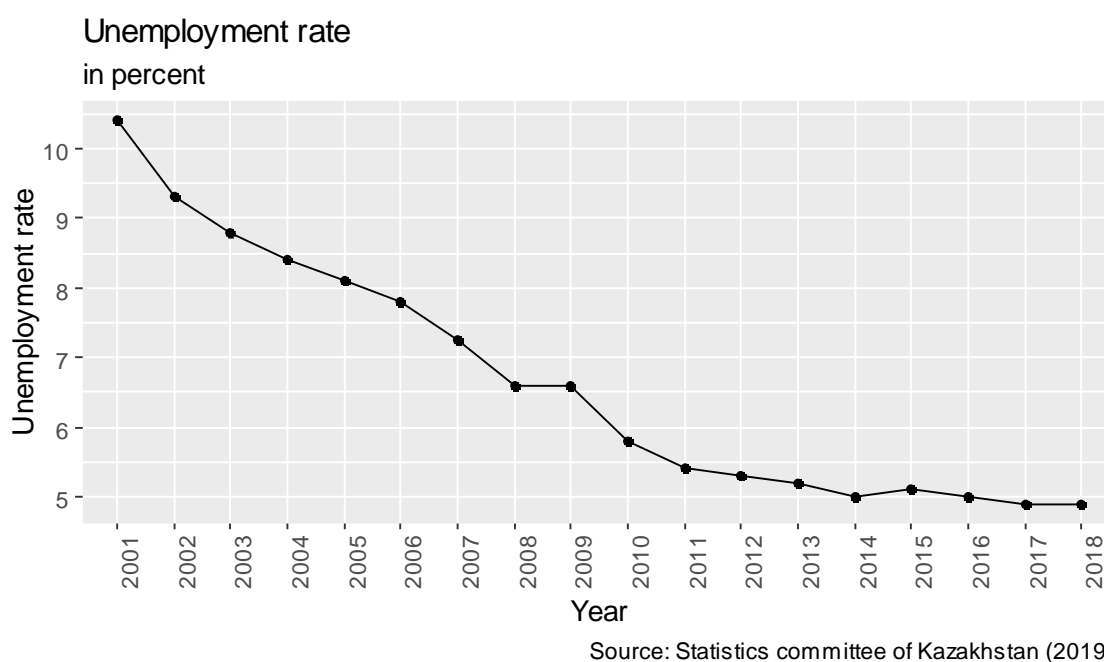
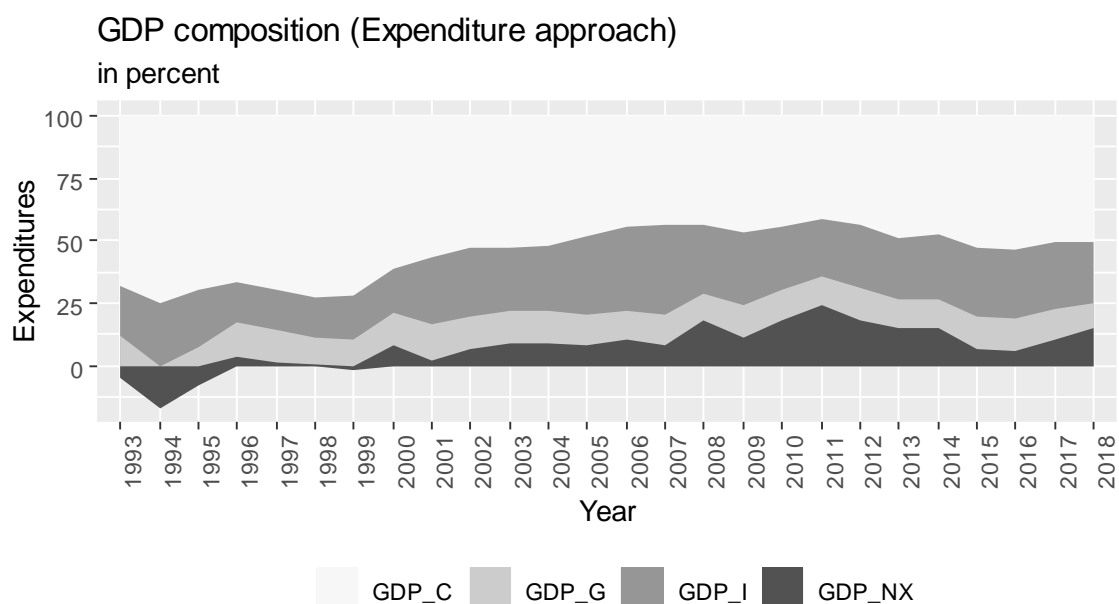


Figure 2.6. Unemployment rate in Kazakhstan, 2001-2018

To get a better picture of Kazakhstan economy, we further analyse the composition of GDP from the perspective of expenditure and production approaches. Figure 2.7 shows the dynamics and structure of GDP by expenditure approach.

Household consumption constitutes the biggest share of GDP. It reaches almost 75% in 1994 and declines to 50% in 2018.

The second biggest element of GDP is investment of firms. This part contributes from 16 to 35% averaging at around 25%. The share of consumption reduces mostly because of investment expansion.



Source: Statistics committee of Kazakhstan (2019)

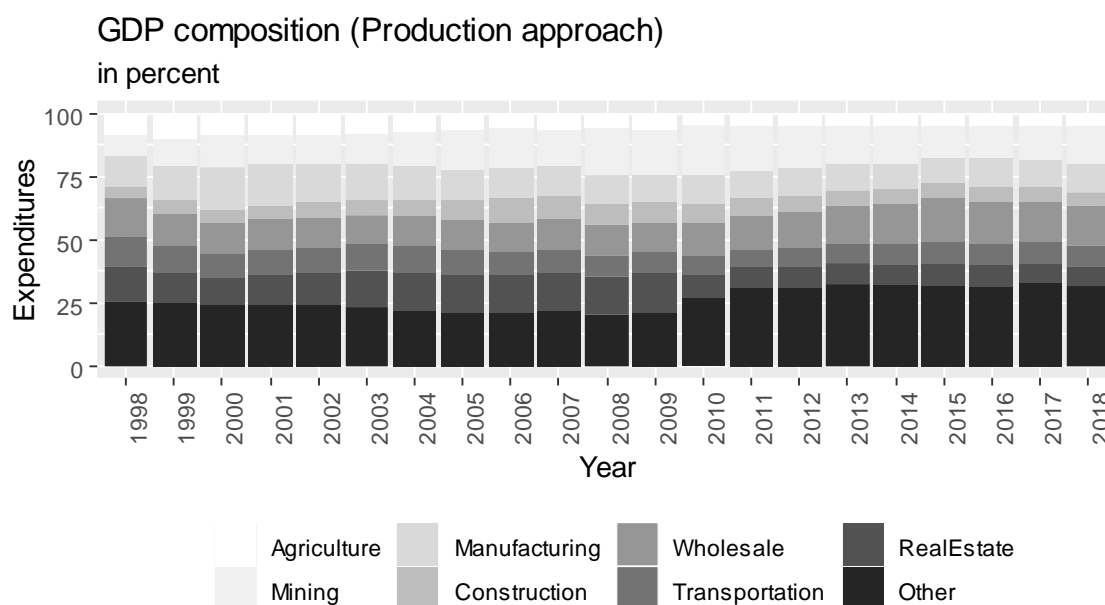
Figure 2.7. Structure of GDP by expenditure approach in Kazakhstan, 1993-2018

The share of government expenditures is almost stable and amounts in the last 10 years to 11-12%.

Net export starts from the negative area in 1993 but then becomes positive very fast and reaches its peak in 2011, approaching almost 25% of GDP. Such sharp increase in net exports was due to the national currency devaluation, which suppressed the flow of imports facilitating increase in exports.

Another projection of GDP can be done through the production approach. On figure 2.8 we can observe the shares of some industries and their contribution to Kazakhstan GDP.

It is worth noting that mining and natural resources extraction constitutes 15% of GDP in 2018. Over the period this share changes from 7.9% (in 1998) to 19.5% (in 2010). The share of agriculture steadily declines from 8.6% to 4.2%. Manufacturing and wholesale both remain nearly constant around 12 and 15% respectively. Real estate and transport shares both decline from around 12-13% to 7-8%. The share of other industries increases remains almost the same: 26-32%.



Source: Statistics committee of Kazakhstan (2019)

Figure 2.8. Structure of GDP by production approach in Kazakhstan, 1993-2018

Overall we may conclude that the Kazakhstan economy demonstrates significant improvements over the analysed period 1993-2018. Main economic indicators, including real GDP, inflation rate, unemployment rate show positive tendencies (the first increases, the last two decrease). It is possible, that some part of this success may be attributed to the development of institutions in Kazakhstan since its independence in 1991. In the next section we provide an overview of Kazakh institutions and some indicators, measuring quality of these institutions.

2.2. Analysis of institutions in Kazakhstan

The World Governance Indicators (WGI) are calculated by Daniel Kaufman and Aart Kraay as a result of their research project aimed to develop cross-country indicators of governance. They use many disparate sources of data, including surveys and expert assessments, to produce six aggregated indicators of governance: (1) Voice and Accountability; (2) Political Stability and Absence of Violence / Terrorism; (3) Government Effectiveness; (4) Regulatory Quality; (5) Rule of Law; (6) Control of Corruption. The description of these indicators is given by the authors in their paper (Kaufmann et al., 2010).

For all indicators we use the aggregate measures provided by the authors. Every measure is assumed to be normally distributed with zero mean and unit variance. Thus, as the

authors claim, all six indicators range approximately from -2.5 to 2.5. The raw data on WGI for Kazakhstan are given in Appendix 5.

Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests. The indicator demonstrates steady improvement over the first half of analysed period, but then it remains almost on the same level. These dynamics may be explained by thorough examination of steps undertaken by the authorities.

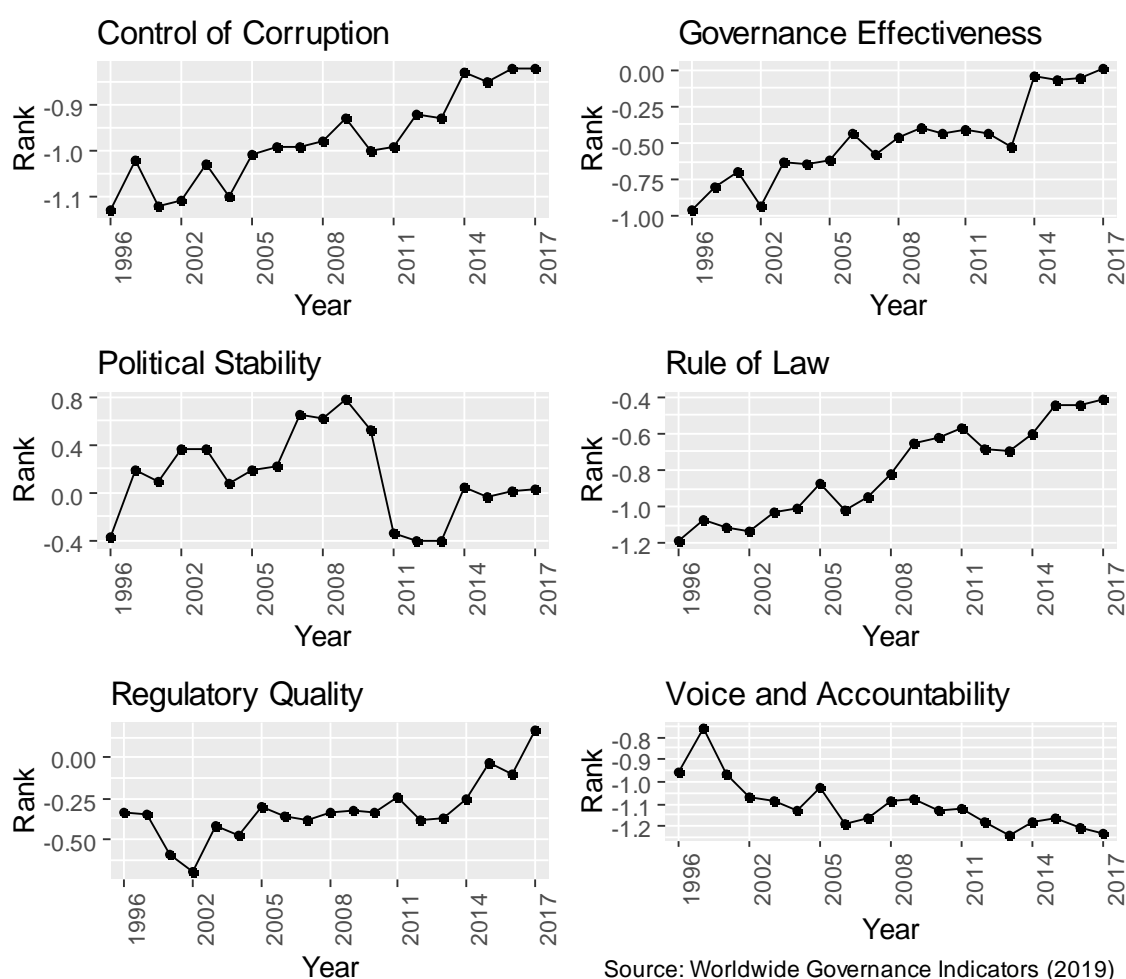


Figure 2.9. Worldwide Governance Indicators for Kazakhstan, 1996-2017

Kazakhstan is a participant of the Istanbul Anti-Corruption Action Plan, which is a sub-regional peer review programme launched in 2003 in the framework of Anti-Corruption Network for Eastern Europe and Central Asia launched by OECD Working Group on Bribery (OECD, 2017a). This programme aims to support anti-corruption reforms

through the promotion of United Nations Convention against Corruption (UNCAC) and other international standards and best practice.

According to the Kazakhstan country report on Istanbul Anti-corruption plan implementation, the country showed positive achievements in the field. In particular, the new Law on Countering Corruption and the Law on Civil Service helped to prevent conflict of interests. It also introduced positions of ethic-officers in all public authorities, and developed anti-corruption screening of draft legal acts.

Kazakhstan accepted the new Law on Public Procurement, which on the one hand increased transparency and introduced electronic procedures, but on the other hand, it left a high volume of non-competitive procurement and unregulated sphere of procurement in national holding companies and other similar entities.

Government Effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Governance effectiveness indicator shows a sound development for the analysed period. In 1996 Kazakhstan has 0.96 units and by 2017 the country goes above 0 level. Kazakhstan steadily implements an Open Government agenda, which aims to provide more opportunities for citizens to participate in decision-making.

Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. We observe fast improvement of this indicator from -0.37 to 0.78 units in 1996-2009 and then abrupt fall to -0.34 percentile in 2011 and further to -0.41 in 2012.

That year Kazakhstan faced strikes and protests by workers of oil companies, who were concerned with the high inequality in local and foreign worker salary (Satpayev & Umbetalieva, 2015). Initially the protests took a peaceful form and the protesters wanted to agree with oil companies on the increase of their payroll. On December 16, 2011 (Kazakhstan's Independence Day) violence broke out leading to 16 people killed and more than 100 injured (Kourmanova, 2012). The protesters burned the city hall, the headquarters of the oil company OMG and some other property. The 20-day state of emergency was imposed by the president, soldiers were transferred to the region, Internet and phone communications were cut by authorities (Lillis, 2011).

For the next 7 years this indicator shows weak improvement, reaching 0.02 in 2017.

Kazakhstan considerably improved the Rule of law indicator, moving from -1.19 to -0.41 units. Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

The progress was possible, in particular, due to the institutional reforms taken since Kazakhstan independence in 1991. The separation of powers, establishment of different branches of judicial procedures and better regulation policies helped the country to establish the rule of law to some extent.

At the same time, the independence of judiciary is questionable, raising awareness of foreign investors who are afraid of expropriation and other political risks. Furthermore, courts are thought to take the side of the government and state-related entities (OECD, 2014). One of the significant steps was done with the introduction of e-government. This helped to move many administrative procedures online. Together with that one-stop shops for handling administrative procedures by citizens and businesses were established.

Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. This indicator increases from -0.33 units in 1996 to 0.17 units in 2017. This proves that the quality of government policies became better. For instance, the business regulatory environment was simplified in order to diversify the economy away from natural resources. Many registration procedures were simplified, the licenses were reduced by 40% (OECD, 2016)

Voice and Accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. This indicator stagnates from -0.96 units in 1998 to -1.23 units in 2017. During the analysed period, the authorities tightened the pressure on the press and free speech. Even the European Parliament raised this issue, saying “Members of the European Parliament are deeply concerned about the climate for the media and free speech in Kazakhstan, where strong pressure on independent media outlets includes some being closed down, and news agency directors and journalists being detained, placed under criminal investigation and sentenced to prison” (European Parliament, 2016).

Overall we can see slight improvement of institutional quality over the analysed period. Some steps were made towards corruption control, increase in government effectiveness and rule of law strengthening. As we know from theoretical framework, better institutional quality may lead to the better economic outcomes. On the other hand, Kazakhstan shows negative dynamics in media freedom and political stability. These two institutions may negatively affect the economic development of the country. To assess, what is the impact of institutions on the economic development of Kazakhstan, in the next paragraph we propose and estimate a model which relates the analysed WGI indicators and main economic outcome, real GDP.

2.3. The institutional quality and economic development in Kazakhstan

In this paragraph we employ a regression analysis to investigate the effect of institutional quality on the economic development in Kazakhstan.

Following the tradition in the literature on the institutional economics (see Acemoglu et al (2001), Nunn (2008), Dell (2010) and other authors) as the main variable of interest we use the natural logarithm of real GDP.

As the explanatory variables we use six indicators described in the previous paragraph.

We also follow suggestions of Kalyuzhnova and Patterson (2016), who use volume of oil exports and weighted GDP of main Kazakhstan trade partners as additional controls for our regression.

We start the analysis with the simple and naïve linear model:

$$\log(GDP_t) = \beta_0 + \beta_1 \times WGI_t + \varepsilon_t \quad (1)$$

where $\log(GDP_t)$ is a natural logarithm of real GDP of Kazakhstan in year t ;

WGI_t is one of Worldwide Governance Indicators of Kazakhstan in year t ;

ε_t – is an error term;

β_1 is the coefficient of interest.

Following the suggestion of the existing literature that the institutional quality positively affects the economic development of a country, we expect β_1 to be positive and statistically significant.

We estimate the proposed model using data on variables for the period 2002-2017, because for this period we have a full set of observations.

We use OLS to estimate the model in (1). The results of estimation are displayed in table 2.1.

Table 2.1. Institutional quality and economic growth (no controls added)

<i>Dependent variable:</i>						
log real GDP						
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	2.698*** (0.345)					
Government efficiency		0.905*** (0.143)				
Political stability			-0.332* (0.177)			
Rule of law				1.065*** (0.123)		
Regulation quality					1.091*** (0.236)	
Voice and accountability						-3.196*** (0.849)
Constant	11.760*** (0.332)	9.558*** (0.069)	9.235*** (0.069)	9.975*** (0.096)	9.510*** (0.084)	5.525*** (0.973)
Observations	16	16	16	16	16	16
R ²	0.813	0.742	0.201	0.843	0.603	0.503
Adjusted R ²	0.800	0.724	0.144	0.832	0.575	0.467
Residual Std. Error (df = 14)	0.122	0.143	0.252	0.112	0.178	0.199
F Statistic (df = 1; 14)	60.995***	40.265***	3.532*	75.438***	21.295***	14.162***

From the regression results we see that four indicators: control of corruption, government efficiency, rule of law and regulation quality satisfy our initial suggestion that the

institutional quality positively affects the economic development. Each coefficient is significant at 1% level. These four covariates also produce largest values of R^2 and adjusted R^2 . The overall significance of the model, measured by F statistic is also significant at 1% level.

The coefficients of two indicators: political stability and voice and accountability are negative. Although, the significance of the coefficient on voice and accountability is high (more than 1%), we suggest two possibilities. Either omitted variable bias is so high that the sign of coefficient is reversed, or this explanatory variable is not related to the economic growth at all.

On the next step we add separately two control variables, which were discussed initially.

We proceed with the model:

$$\log(GDP_t) = \beta_0 + \beta_1 \times WGI_t + \beta_2 \times OilEx_t + \varepsilon_t \quad (2)$$

where $\log(GDP_t)$ is a natural logarithm of real GDP of Kazakhstan in year t ;

WGI_t is one of Worldwide Governance Indicators of Kazakhstan in year t ;

$OilEx_t$ is a natural logarithm of oil exports of Kazakhstan in year t ;

ε_t – is an error term;

β_1 is the coefficient of interest.

We calculate the volume of oil exports following Kalyuzhnova and Patterson (2016):

$$OilEx_t = \log\left(\frac{E_t}{Def_t} \times P_t \times X_t\right) \quad (3)$$

where E_t is an average nominal exchange rate of Kazakh tenge (KZT) to USD in year t ;

P_t is an oil price in USD per 1 barrel in year t ;

Def_t is a GDP deflator in year t ;

X_t is Kazakhstan average oil exports in barrels per day in year t .

The data on oil price and oil imports are obtained from FRED Economic database. In the main regression we use prices of Brent oil, while separately we run a robustness check using WTI oil prices.

The data on the average exchange rate KZT/USD are collected from investing.com database.

GDP deflator is calculated based on the macroeconomic data from Worldbank as the ratio of nominal GDP to real GDP.

We estimate (2) using OLS and obtain the results, which are displayed in table 2.2.

Table 2.2. Institutional quality and economic growth (Controlling for oil exports))

<i>Dependent variable:</i>						
log real GDP						
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	2.655***					
	(0.284)					
Government efficiency		0.893***				
		(0.124)				
Political stability			-0.303			
			(0.179)			
Rule of law				1.037***		
				(0.110)		
Regulation quality					1.085***	
					(0.215)	
Voice and accountability						-3.075***
						(0.838)
Oil exports	0.344**	0.360**	0.322	0.264*	0.392*	0.304
	(0.123)	(0.154)	(0.314)	(0.124)	(0.199)	(0.242)
Constant	3.917	1.395	1.920	3.962	0.620	-1.222
	(2.825)	(3.488)	(7.116)	(2.814)	(4.521)	(5.452)
Observations	16	16	16	16	16	16
R ²	0.883	0.819	0.261	0.884	0.694	0.557
Adjusted R ²	0.865	0.791	0.148	0.866	0.647	0.489
Residual Std. Error (df = 13)	0.100	0.125	0.252	0.100	0.162	0.195
F Statistic (df = 2; 13)	49.160***	29.316***	2.302	49.625***	14.763***	8.165***

The regression results are very similar to that of the previous model. All coefficients slightly reduced, but for the same four indicators we obtain positive and significant

results. The negative coefficient on political stability indicator is no more significant now, while the negative coefficient on voice and accountability stays negative and significant. However, the models with the political stability and voice and accountability indicators have low level of R^2 and adjusted R^2 , while F statistics suggests that the overall significance of the model with political stability is poor.

We also see that oil export positively correlated with real GDP only in specifications 1-2 and 4-5, which are related to significant WG indicators, listed above.

To proceed with the control variables, we estimate the model:

$$\log(GDP_t) = \beta_0 + \beta_1 \times WGI_t + \beta_2 \times PartGDP_t + \varepsilon_t \quad (4)$$

where $\log(GDP_t)$ is a natural logarithm of real GDP of Kazakhstan in year t ;

WGI_t is one of Worldwide Governance Indicators of Kazakhstan in year t ;

$PartGDP_t$ is a natural logarithm of weighted average GDP of main Kazakhstan trade partners in year t ;

ε_t – is an error term;

β_1 is the coefficient of interest.

The logic behind this control variable is based on a gravity model of international trade, which relates the volume of international trade between two countries and volumes of their GDP. This model suggests that the trade volume linearly depends on real GDP of two trading partners (Krugman and Obstfeld, 2012).

We use the suggestions of Kalyuzhnova and Patterson (2016), who claim that Kazakhstan has three main trade partners constituting around 80% of trade flows: Russia, China and the EU. Within these 80% Russia has 40%, China also 40% and the EU has 20% of trade flows (of Kalyuzhnova and Patterson, 2016).

Thus, we calculate $PartGDP_t$ as

$$PartGDP_t = \log \left(\frac{E_t}{Def_t} (0.4 \times GDP_t^{RUS} + 0.4 \times GDP_t^{CH} + 0.2 \times GDP_t^{EU}) \right) \quad (5)$$

where E_t is an average nominal exchange rate of Kazakh tenge (KZT) to USD in year t ;

Def_t is a GDP deflator in year t ;

GDP_t^{RUS} , GDP_t^{CH} , GDP_t^{EU} are real GDP of Russia, China and the EU respectively measured in USD in year t .

The data on oil price and oil imports are obtained from FRED Economic database. In the main regression we use prices of Brent oil, while separately we run a robustness check using WTI oil prices.

The regression results of model (4) are presented in table 2.3.

Table 2.3. Institutional quality and economic growth (Controlling for GDP of trade partners))

<i>Dependent variable:</i>						
log real GDP						
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	2.601*** (0.579)					
Government efficiency		0.744*** (0.206)				
Political stability			-0.081 (0.163)			
Rule of law				1.029*** (0.200)		
Regulation quality					0.743** (0.294)	
Voice and accountability						-1.929* (0.937)
GDP of trade partners	-0.045 (0.213)	-0.231 (0.215)	-0.735*** (0.241)	-0.044 (0.189)	-0.411* (0.230)	-0.513** (0.229)
Constant	13.616 (8.746)	19.481* (9.234)	40.920*** (10.409)	11.855 (8.041)	27.136** (9.851)	29.104** (10.543)
Observations	16	16	16	16	16	16
R ²	0.814	0.763	0.534	0.844	0.682	0.642
Adjusted R ²	0.785	0.727	0.462	0.820	0.633	0.587
Residual Std. Error (df = 13)	0.126	0.143	0.200	0.116	0.165	0.175
F Statistic (df = 2; 13)	28.440***	20.933***	7.442***	35.199***	13.923***	11.639***

The results are almost similar to two previous models. We see positive and significant effect of institutions measured by indicators “control of corruption”, “government efficiency”, “rule of law” and “regulation quality”. We may take it as a confirmation that independent of the control variable, these four measures have strong and positive correlation with the outcome variable, which means that particular institutions positively affect economic development of Kazakhstan.

Controlling for GDP if the main trade partners holds the coefficient on “political stability” indicator insignificant, and at the same time reduces significance of the coefficient on “voice and accountability”.

As a final step of our regression analysis we use both control variables to estimate the following model:

$$\log(GDP_t) = \beta_0 + \beta_1 \times WGI_t + \beta_2 \times OilEx_t + \beta_3 \times PartGDP_t + \varepsilon_t \quad (6)$$

The regression results are presented in table 2.4.

When controlling for both oil exports and GDP of trade partners, the coefficients on “political stability” and “voice and accountability” become insignificant together. On the other hand, other indicators remain their positive and significant coefficients. Moreover, both control variables have significant coefficients.

We also used price of WTI oil to estimate models (2) and (6) as robustness checks. The regression results are presented in appendices 6 and 7. They show similar results to that analyzed previously.

The results of the regression analysis show that in Kazakhstan economic growth is attributed to the four types of institutions:

- control of corruption;
- government efficiency;
- rule of law;
- regulation quality.

Two types do not have a significant effect on the economic development: political stability and voice and accountability.

Table 2.4. Institutional quality and economic growth (both controls)

	<i>Dependent variable:</i>					
	log real GDP					
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	1.618***					
	(0.428)					
Government efficiency		0.466***				
		(0.132)				
Political stability			0.126			
			(0.098)			
Rule of law				0.637***		
				(0.179)		
Regulation quality					0.454**	
					(0.179)	
Voice and accountability						-0.764
						(0.658)
GDP of trade partners	-0.473**	-0.603***	-1.118***	-0.461**	-0.739***	-0.871***
	(0.165)	(0.145)	(0.152)	(0.178)	(0.148)	(0.168)
Oil exports	0.544***	0.606***	0.856***	0.490***	0.674***	0.704***
	(0.121)	(0.118)	(0.157)	(0.135)	(0.131)	(0.159)
Constant	18.821***	21.666***	38.024***	18.442**	25.934***	29.923***
	(5.680)	(5.401)	(5.823)	(6.051)	(5.724)	(6.779)
Observations	16	16	16	16	16	16
R ²	0.931	0.926	0.866	0.926	0.901	0.863
Adjusted R ²	0.913	0.907	0.833	0.907	0.876	0.829
Residual Std. Error (df = 12)	0.080	0.083	0.111	0.083	0.096	0.113
F Statistic (df = 3; 12)	53.620***	49.787***	25.951***	49.929***	36.387***	25.272***

Moreover, since all indicators are standardized and have similar measures, we can compare the relative effect of the institutions. The most important for the economic growth is the control of corruption. Next goes rule of law and almost equal impact have government efficiency and regulation quality. In this case we may state that the control of corruption is a crucial for Kazakhstan economic development, which is supported by the view of OECD reports (see OECD (2016) and OECD (2017a)).

The fact that we report positive and significant correlation between political institutions and economic growth in Kazakhstan goes in line with the existing literature, including North (1990), Acemoglu et al (2001), Nunn (2008), Dell (2010) and others. Despite the fact that most of these papers use cross-section of countries to prove the effect of institutions on the economic growth, we believe that using the data on only one country is also possible. In this case we analyze the time-varying relationship between institutional development and economic outcomes which is also valid dimension of institutional analysis.

Although, we do not explicitly deal with the problem of reverse causality, we use the already proven results of scholars to support our view that exactly the institutions affect economic development and not in reverse.

Overall, we may conclude that it is really important for Kazakhstan government to provide the better quality of institutions which may stimulate subsequent economic growth.

Conclusion

It is widely accepted now that institutions matter for economic development of the countries. The whole field of institutional economics works in the direction of empirical investigation of these links, which may help to formulate also some policy recommendations to governments. Cross-sectional studies show that countries with better institutions have larger economic outcomes, compared to those with poorer institutions. Even for the particular country, if two different areas had in the past different treatment, their economic wellbeing may differ. Thus, we must be aware of institutions when analyzing determinants of the economic growth.

The field of institutional economics is very broad and deals with many different problems, including transaction costs, property rights, theory of a state and others. They all related to the institutions in general, but have different aspects to analyze. The biggest problem of those studies which are aimed to reveal a causal relationship between institutions and economic growth is the endogeneity problem. It is not obvious, what is the direction of causality: whether the quality of institutions forms economic development, or economic prosperity allows for better institutions. That is why, in the field of empirical institutional economics authors are using such settings where it is possible to find exogenous variation in institutions, such as African colonization or Peruvian mita system. When institutions are brought exogenously and almost randomly, it is possible to argue that they have causal impact on the economic outcomes later.

Although, some attempts were made, the question which particular institutions matter for the economic growth is not well-developed yet, particularly, due to the lack of data regarding institutions. It is hard to obtain quantitative indicators of institutions for a long period of time and for a wide cross-section of countries.

In this thesis, we applied the institutional economics methodology to the economy in Kazakhstan. This country underwent a transition from planned economy to market economy in the last 30 years. The transition influences institutions, which in return influence the economic wellbeing of the country. We aimed to analyze, whether this statement is true, and if so, which particular institutions matter more for economic growth.

Our analysis shows that in the period 1993-2017 main economic indicators of Kazakhstan economy showed good dynamics. Real output increased threefold during this period,

while inflation and unemployment both came to reasonable levels of 6 and 5 percent respectively. The structure of the output slowly changes from mineral resources extraction to manufacturing and other industries with high value added. But still Kazakhstan economy extensively depends on oil and gas exports.

The first question of our thesis is “How institutions change recently in Kazakhstan?” The analysis of institutional development in Kazakhstan showed some improvement in the field of government effectiveness and rule of law. Although the control of corruption also shows positive dynamics, the absolute value of this indicator is still low, meaning that the progress in the field is not yet successful. Some indicators, including political stability and voice and accountability are even declined over the analyzed period. Following the conclusions of OECD reports we find that Kazakhstan implemented successful reforms which helped to improve the quality of institutions but there is still a room for further development. In particular, the corruption is still a big obstacle for the economic growth.

The second question we posed in the introduction is “Do institutions matter for economic growth in Kazakhstan?”. The results of regression analysis revealed that institutions do matter for the economic development of Kazakhstan. The selected institutional indicators show positive and significant correlation with the level of output for different model specifications, different set of control variables and different measures of control variables.

The third research question is “Which particular institutions matter for economic growth in Kazakhstan?”. Regression analysis shows that the most important institution for economic growth in Kazakhstan is the control of corruption. The relative effect of this institution compared to others is two times bigger. Combining this with the previous observation about relatively low value of this indicator, we may conclude, that there is a big potential for the improvement in this field which may trigger fast economic growth.

Other institutional indicators which showed positive and significant relation with the level of output are (in order of decreasing significance): rule of law, government efficiency and regulation quality.

Surprisingly, political stability and voice and accountability do not have any impact on the economic development of Kazakhstan. Partially we may address this feature to the autocratic power in the country, which may overcome any kind of protests in the efficient way and, thus, will not allow political instability influence the economic processes.

We based our conclusions on the assumption that the causal link between institutions and economic growth is well-established by previous works in the field and we do not need to design any kind of instrumental variables or other pseudo-experimental setting. This is one potential place of the extension of our work.

Also we admit, that the set of institutional indicators may be extended with other variables. We used the variables which have the longest time-span, compared to other databases, such as World Bank's "Doing Business" (available from 2004) or "Enterprise Surveys" (available only for 2009 and 2013). To establish credible conclusions, we need to use in the regression as much observations as we can. As a potential extension for our thesis it is possible to compare regression results for WGI and Doing Business indicators and derive some interesting conclusions in case of discrepancies. This is out of the scope of our thesis.

Overall, the goal of the thesis is fulfilled, we demonstrated that institutions have significant positive impact on the economic wellbeing in Kazakhstan. In particular, this country may leverage a lot just by strengthening the control of the corruption level, which still causes the biggest problems.

List of tables

Table 2.1. Institutional quality and economic growth (no controls added)	28
Table 2.2. Institutional quality and economic growth (Controlling for oil exports))	30
Table 2.3. Institutional quality and economic growth (Controlling for GDP of trade partners))	32
Table 2.4. Institutional quality and economic growth (both controls).....	34

List of charts

Figure 2.1. Nominal and real GDP in Kazakhstan, 1993-2018	17
Figure 2.2. Nominal and real GDP per capita in Kazakhstan, 1993-2018.....	18
Figure 2.3. Real GDP and real GDP per capita growth rates in Kazakhstan, 1993-2018	19
Figure 2.4. Inflation rate in Kazakhstan, 1995-2018	19
Figure 2.5. Structure of population in Kazakhstan, 2001-2018.....	20
Figure 2.6. Unemployment rate in Kazakhstan, 2001-2018	21
Figure 2.7. Structure of GDP by expenditure approach in Kazakhstan, 1993-2018	22
Figure 2.8. Structure of GDP by production approach in Kazakhstan, 1993-2018	23
Figure 2.9. Worldwide Governance Indicators for Kazakhstan, 1996-2017	24

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Annexes

Annex 1. Main economic indicators of Kazakhstan

Year	Nominal GDP, bln tenge	Real GDP, bln tenge	Nominal GDP per capita, thousand tenge	Real GDP per capita, thousand tenge	Real GDP growth, %	Real GDP per capita growth, %	Inflation rate, %
1993	29.42	5 109.25	1.80	312.87	-9.20	-8.60	N/A
1994	423.47	4 465.49	26.31	277.44	-12.60	-11.32	1877.37
1995	1 014.19	4 099.32	64.13	259.19	-8.20	-6.58	176.16
1996	1 415.75	4 119.81	90.88	264.47	0.50	2.03	39.18
1997	1 672.14	4 189.85	109.05	273.24	1.70	3.32	17.41
1998	1 733.26	4 110.24	115.00	272.72	-1.90	-0.19	7.15
1999	2 016.46	4 221.22	135.07	282.76	2.70	3.68	8.3
2000	2 599.90	4 634.90	174.68	311.41	9.80	10.13	13.18
2001	3 250.59	5 260.61	218.77	354.05	13.50	13.69	8.35
2002	3 776.28	5 776.15	254.14	388.73	9.80	9.80	5.84
2003	4 611.98	6 313.33	309.34	423.46	9.30	8.93	6.44
2004	5 870.13	6 919.41	391.00	460.90	9.60	8.84	6.88
2005	7 590.59	7 590.59	501.13	501.13	9.70	8.73	7.58
2006	10 213.73	8 402.79	667.21	548.91	10.70	9.54	8.72
2007	12 849.79	9 150.64	829.87	590.97	8.90	7.66	10.85
2008	16 052.92	9 452.61	1 024.18	603.08	3.30	2.05	17.14
2009	17 007.65	9 566.04	1 056.85	594.43	1.20	-1.43	7.32
2010	21 815.52	10 264.36	1 336.58	628.87	7.30	5.79	7.4
2011	28 243.05	11 023.92	1 705.79	665.81	7.40	5.87	8.45
2012	31 015.19	11 553.07	1 847.01	688.01	4.80	3.33	5.2
2013	35 999.03	12 246.25	2 113.17	718.86	6.00	4.49	5.94
2014	39 675.83	12 760.60	2 294.95	738.11	4.20	2.68	6.85
2015	40 884.13	12 913.72	2 330.54	736.13	1.20	-0.27	6.68
2016	46 971.15	13 055.77	2 639.71	733.72	1.10	-0.33	14.36
2017	53 101.28	13 591.06	2 943.89	753.48	4.10	2.69	7.44
2018	58 785.74	14 148.29	3 216.47	774.12	4.10	2.74	6

Annex 2. Structure of population in Kazakhstan

Year	Employed, thousand persons	Unemployed, thousand persons	Not in the labor force, thousand persons	Unemployment rate, %
2001	6 698.80	780.30	3 175.80	10.4
2002	6 708.90	690.70	3 155.30	9.3
2003	6 985.20	672.10	3 278.60	8.8
2004	7 181.80	658.80	3 383.40	8.4
2005	7 261.00	640.70	3 476.90	8.1
2006	7 403.50	625.40	3 493.90	7.8
2007	7 631.11	597.18	3 463.17	7.26
2008	7 857.20	557.80	3 416.20	6.6
2009	7 903.40	554.50	3 500.30	6.6
2010	8 114.20	496.50	3 487.70	5.8
2011	8 301.60	473.00	3 477.30	5.4
2012	8 507.10	474.80	3 538.70	5.3
2013	8 570.65	470.70	3 569.36	5.2
2014	8 510.10	451.90	3 715.90	5
2015	8 433.30	454.20	3 867.40	5.1
2016	8 553.40	445.50	3 855.00	5
2017	8 585.20	442.30	3 927.30	4.9
2018	8 694.99	443.64	3 907.30	4.9

Annex 3. Structure of GDP by expenditure approach in Kazakhstan

percent

Year	Consumption	Investment	Government expenditures	Net exports
1993	68.2	20	16.6	-4.8
1994	74.7	28.7	13.6	-17
1995	69.6	23.2	15.1	-7.9
1996	66.3	16.1	13.9	3.7
1997	69.9	15.6	13	1.5
1998	72.8	15.8	11.3	0.1
1999	71.7	17.7	12.3	-1.7
2000	61.1	18.1	12.9	7.9
2001	56.9	26.9	14.4	1.8
2002	52.8	27.3	13.4	6.5
2003	52.8	25.6	13	8.6
2004	52	26.3	13.1	8.6
2005	48.6	31	12.5	7.9
2006	44.5	33.9	11.4	10.2
2007	43.9	35.5	12.2	8.4
2008	43.4	27.5	11.2	17.9
2009	46.5	29.4	12.7	11.4
2010	44.6	25.3	11.7	18.4
2011	41.4	23	11.3	24.3
2012	44	25.2	12.5	18.3
2013	48.9	24.6	11.2	15.3
2014	47.4	25.8	11.8	15
2015	52.6	27.9	12.7	6.8
2016	53.4	27.9	12.8	5.9
2017	50.8	26.6	11.9	10.7
2018	50.3	24.7	9.8	15.2

Annex 4. Structure of GDP by production approach in Kazakhstan

percent

Year	Agriculture	Mining	Manufacturing	Construction	Wholesale	Transportation	Real estate	Other
1998	8.6	7.9	12	4.9	15.2	12.3	13.1	26
1999	9.9	10.4	14.1	4.7	13.6	10.5	12	24.8
2000	8.2	13	16.5	5.2	12.4	10	10.8	23.9
2001	8.7	11.4	16.4	5.5	12.1	9.7	12.1	24.1
2002	8	12.1	14.5	6.3	12.2	10.1	12.5	24.3
2003	7.8	12.1	14.2	6	11.6	10.8	14.4	23.1
2004	7.1	13.6	13.3	6.1	12.5	10.1	15.3	22
2005	6.4	15.8	12	7.8	11.8	9.8	15.1	21.3
2006	5.5	16.1	11.7	9.8	11.4	9.3	14.8	21.4
2007	5.7	15.1	11.5	9.4	12.4	9	14.8	22.1
2008	5.3	18.7	11.8	8.1	12.3	8.5	14.9	20.4
2009	6.2	17.9	10.9	7.9	12.1	8.3	15.9	20.8
2010	4.5	19.5	11.3	7.7	13	8	8.6	27.4
2011	4.9	17.7	11	6.4	13.6	6.8	8.5	31.1
2012	4.2	17.1	11	6.2	14.9	7.3	8.6	30.7
2013	4.5	15.2	10.7	6	15.1	7.5	8.4	32.6
2014	4.4	15.2	10.2	5.9	16	7.9	8.3	32.1
2015	4.8	12.7	10.1	6	17	8.6	9	31.8
2016	4.6	12.9	11.3	5.9	16.8	8.3	8.7	31.5
2017	4.3	13.6	11.2	5.5	15.9	8.4	8.2	32.9
2018	4.2	15.2	11.6	5.4	15.9	8.3	7.6	31.8

Annex 5. World Governance Indicators for Kazakhstan

Year	CC	GE	PV	RL	RQ	VA
1996	-1.13	-0.96	-0.37	-1.19	-0.33	-0.96
1998	-1.02	-0.8	0.19	-1.07	-0.35	-0.76
2000	-1.12	-0.69	0.09	-1.11	-0.59	-0.97
2002	-1.11	-0.93	0.36	-1.14	-0.7	-1.07
2003	-1.03	-0.63	0.36	-1.03	-0.42	-1.09
2004	-1.1	-0.65	0.07	-1.01	-0.48	-1.13
2005	-1.01	-0.62	0.19	-0.87	-0.3	-1.03
2006	-0.99	-0.43	0.21	-1.02	-0.36	-1.19
2007	-0.99	-0.58	0.65	-0.95	-0.38	-1.16
2008	-0.98	-0.46	0.62	-0.82	-0.34	-1.09
2009	-0.93	-0.39	0.78	-0.65	-0.32	-1.08
2010	-1	-0.44	0.52	-0.62	-0.33	-1.13
2011	-0.99	-0.41	-0.34	-0.57	-0.24	-1.12
2012	-0.92	-0.44	-0.41	-0.68	-0.38	-1.18
2013	-0.93	-0.53	-0.4	-0.69	-0.37	-1.24
2014	-0.83	-0.04	0.04	-0.6	-0.25	-1.18
2015	-0.85	-0.07	-0.04	-0.44	-0.03	-1.16
2016	-0.82	-0.06	0.01	-0.44	-0.1	-1.21
2017	-0.82	0.01	0.02	-0.41	0.17	-1.23

Note: CC – Control of Corruption; GE – Government Effectiveness; PV – Political Stability and Absence of Violence / Terrorism; RL – Rule of Law; RQ – Regulatory Quality; VA – Voice and Accountability.

Annex 6. Regression results controlling for oil exports (price of WTI)

<i>Dependent variable:</i>						
log real GDP						
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	2.791***					
	(0.325)					
Government efficiency		0.928***				
		(0.141)				
Political stability			-0.340*			
			(0.183)			
Rule of law				1.088***		
				(0.117)		
Regulation quality					1.124***	
					(0.240)	
Voice and accountability						-3.236***
						(0.874)
Oil exports (with WTI price)	0.284*	0.240	0.140	0.233	0.237	0.154
	(0.158)	(0.196)	(0.361)	(0.147)	(0.248)	(0.282)
Constant	5.409	4.138	6.070	4.722	4.148	1.981
	(3.543)	(4.428)	(8.164)	(3.327)	(5.614)	(6.552)
Observations	16	16	16	16	16	16
R ²	0.851	0.769	0.211	0.869	0.629	0.514
Adjusted R ²	0.828	0.733	0.089	0.848	0.572	0.439
Residual Std. Error (df = 13)	0.113	0.141	0.260	0.106	0.178	0.204
F Statistic (df = 2; 13)	36.992***	21.599***	1.734	42.994***	11.037***	6.877***

Annex 7. Regression results controlling for oil exports and GDP of trade partners (price of WTI)

<i>Dependent variable:</i>						
log real GDP						
	(1)	(2)	(3)	(4)	(5)	(6)
Control of corruption	1.602*** (0.513)					
Government efficiency		0.436** (0.164)				
Political stability			0.042 (0.104)			
Rule of law				0.661*** (0.191)		
Regulation quality					0.413* (0.207)	
Voice and accountability						-0.830 (0.685)
GDP of trade partners	-0.612** (0.226)	-0.778*** (0.206)	-1.255*** (0.187)	-0.566** (0.218)	-0.938*** (0.195)	-1.049*** (0.202)
Oil exports (with WTI price)	0.651*** (0.187)	0.732*** (0.190)	1.000*** (0.214)	0.592*** (0.185)	0.833*** (0.195)	0.876*** (0.214)
Constant	22.377*** (6.904)	26.379*** (6.665)	40.704*** (6.461)	20.696*** (6.732)	30.921*** (6.518)	33.650*** (7.180)
Observations	16	16	16	16	16	16
R ²	0.907	0.894	0.834	0.916	0.874	0.850
Adjusted R ²	0.884	0.868	0.793	0.895	0.842	0.813
Residual Std. Error (df = 12)	0.093	0.099	0.124	0.088	0.108	0.118
F Statistic (df = 3; 12)	39.132***	33.825***	20.128***	43.657***	27.687***	22.717***