

Kazakhstan: the Best Oil and Gas Magnate in the CIS?

Yelena Kalyuzhnova*, The Centre for Euro-Asian Studies, University of Reading, UK

Stanislav Zhukov, IMEMO, Moscow, Russia

JEL classifications: O43, Q33, Q43, Q48

Abstract

Over the last ten years mineral wealth has played a significant role in the economic development of resource-rich Commonwealth of Independent States (CIS) countries. Kazakhstan has benefited greatly from its hydrocarbons sector. These trends follow almost a decade of increasing oil prices, with the result that Kazakhstan has been emerging as an important energy producer in Euro-Asia. This paper analyzes the institutional setting and development of the Kazakhstani oil and gas sector and its ability to sustain long-term economic growth. The paper assesses the importance of hydrocarbons in the development of the Kazakhstani economy. The theoretical framework provides the basis for the empirical analysis based on an autoregressive distributed lag (ARDL) model combined with stochastic volatility to allow for movements in oil prices and revenues. The paper's main results depict the stable short-term economic growth in Kazakhstan and evaluate the potential for long-term economic growth.

Acknowledgements

In writing this paper we were greatly assisted by comments and helpful suggestions from Kerry Patterson and Richard Pomfret. Any errors are our own.

Paper to be presented at the American Economic Association annual conference in New Philadelphia on 4 January 2014 in an Association for Comparative Economic Studies panel titled *Kazakhstan's Economic Strategy: Halfway to 2030*.

* Corresponding author y.kalyuzhnova@henley.ac.uk

I. Introduction: Natural Resource and Economic Growth – the Story to Date

In order to investigate the question posed in the title of this paper this section will create a framework of the analysis through the recent economic literature. We will attempt to formulate the main criteria for the evaluation of governmental economic policies as well as the country's economic outcomes to date. We believe that this is the right approach to find out whether Kazakhstan has benefited from its natural endowment or repeated the story of some resource rich-countries that are suffering from low economic growth and misuse of resources.

The role of resource abundance in economic growth is an ongoing debate in the economic literature (e.g., Gelb, 1988; Karl, 1997a b; Wood, 1999; Auty, 2001, Mohaddes, et al., 2013). The economic history to date demonstrates mixed evidence about the relationship of resource abundance with economic growth.

A. Natural Resources Bad for Economic Growth

Recent history is full of cases where the role of the raw materials sector has been blamed for the underdevelopment or low growth rates of some economies (Bravo-Ortega and Gregorio, 2005). The worst example of such performance is in Nigeria (Bevan et al., 1999; Sala-i-Martin and Subramanian, 2003), where the increase in oil revenue did not make a positive impact on income per capita and an average Nigerian did not benefit from the country's mineral endowment. However, the experience of Nigeria is not an exception. During the last several decades other resource-rich countries, including Qatar, Venezuela, Iraq, and Kuwait among others, had similar experiences of negative growth.

The last two decades have witnessed an increase in research on economic growth and the abundance of natural resources (Sachs and Warner, 1995, revised 1997; Lane and Tornell, 1996; Asea and Lahiri, 1999; Gylfason et al., 1999; Rodriguez and Sachs, 1999; Sachs and

Warner, 1999, 2001; Rosser, 2006). Although even in the 1950s it was noticed that there is a correlation between slow growth and the decrease of the relative prices of exports of the natural resources industries. The Singer–Prebisch hypothesis on the declining terms of trade (Prebisch, 1959), states that the prices of export-orientated commodities over time decrease relative to the prices of imported manufacturing goods. This leads to a situation in a country where the available revenue will be less and less able to buy the manufacturing production, hence preventing investment into the economy. The 1970s and 1980s were characterized as an era of adoption of import-substitution policies as a pathway to increase the competitiveness of manufacturing, although this strategy was often inefficient and caused further problems in the manufacturing sector, which is essential for long-term economic growth.

Concerns were also raised regarding “Dutch disease,” caused by an appreciation of the real exchange rate, which is driven by a boom in natural resources. The negative consequence of this is the shrinking of manufacturing exports and production (Gylfason et al., 1999; Sachs and Warner, 2001). The validity of the Dutch disease hypothesis was tested by examining the relationship between real oil prices and real exchange rates in a sample of 14 oil-exporting countries. We used autoregressive distributed lag (ARDL) bounds tests of co-integration to support the existence of a stable relationship between real exchange rates and real oil prices in all countries, suggesting strong support for the Dutch disease hypothesis (Jahan-Parvar and Mohammadi, 2011).

The transmission mechanisms directly influence economic growth, but natural resources only made an indirect impact via them. Gylfason (2001) defined Dutch disease, rent-seeking, government mismanagement, and low levels of human capital as transmission mechanisms. There are attempts empirically to identify the potential channels of transmission for the “resource curse” (also known as the paradox of plenty) by regressing institutional quality,

human capital, etc. on natural resource dependence only and calculating the indirect effects of resource dependence on growth from the coefficients of these intermediate variables on growth (Lay and Mahmoud, 2004; Papyrakis and Gerlagh, 2004). However, this approach suffers from potentially omitted variable bias and other econometric problems (van der Ploeg, 2011).

The price volatility of raw materials is also blamed for the increasing difficulties in fiscal management of export revenues and, ultimately, limitations for growth. Further arguments were developed that foreign companies investing into the raw materials sector of the resource-rich countries only benefit themselves and their countries, leaving behind the host countries (Singer, 1950; Humphreys et al., 2007).

B. Natural Resources Beneficial to Economic Growth

In the past there were several reports of development where natural resources seem to have been the driver of economic growth (Wright, 1990; Sarraf and Jiwanji, 2001). As Gylfason demonstrated from 65 resource-rich developing countries, only Botswana, Indonesia, Malaysia, and Thailand managed to achieve long-term investment exceeding 25% of gross domestic product (GDP), and an average GDP growth above 4% (Gylfason, 2001). The success of the three resource-rich Asian countries could be explained by the economic policies of their governments, namely by economic diversification and industrialization (van der Ploeg, 2011).

Another good example of economic diversification policy can be found in the United Arab Emirates (UAE) (Fasano, 2002), where oil and gas wealth has been used to improve standards of living (free health care and education), modernize infrastructure, and create jobs. The government is aware of the depletion of its natural resources, and therefore the creation of its petrochemicals and fertilizers industries became a priority for the UAE. In contrast

Dubai, however, took the route for diversification into tourism, finance, light manufacturing, and telecommunications.

In practice, very often the impression that is created from the analysis of the individual case studies is that the only truly successful countries among the resource-rich economies are the developed countries. However, even in these cases there is a certain share of criticism (Kemp and Smith, 2002), such as in Norway, the UK, Canada, Sweden, or Finland (Innis, 1956; Andersen, 1993; Kemp and Stephen, 2005; Al Kasim et al., 2006; Larsen, 2006; Blomstrom and Kokko, 2007). The obvious explanation of such success is based on a low level of corruption and well developed institutions (Acemoglu et al., 2005), which help to form adequately efficient governmental policies toward the oil and gas sectors and make coherent managerial decisions regarding economic development overall. The industrialization in these countries was based on the initial export of raw materials, which later created linkages to other sectors of the economy, where manufacturing is included.

There is a very rich literature on the question of the resource curse (Frankel, 2010). Isham et al. (2005) provide a distinction between point and diffused resources; the former are supposed to be worse. Therefore Kazakhstan, as an oil producer, is in greater danger of a resource curse – which, jumping ahead, makes actual success more striking. Brunnschweiler and Bulte (2008) combine this angle with the institutional emphasis provided in Mehlum et al. (2006). The question “Is the resource curse unavoidable?” is very important for countries such as Kazakhstan, which is at the beginning of its path of developing the hydrocarbons sector. At present there are qualitative as well as quantitative studies that are challenging the empirics of the resource curse. One of the findings is that the association of natural resources with low economic growth and development depends on the measurement of resource richness. For example, in their work Sachs and Warner (1995, 2000, 2001) found a robust negative relationship between economic growth and natural resources, using cross-section

regressions. They backed up this relationship with measures of resource abundance, such as the share of mining production in GDP, land per capita, and the share of natural resource exports in GDP. Finally, they found that an increment in one standard deviation in the participation of natural resources exports in the GDP would imply a lower rate of growth in the order of 1% each year. However, others (Maloney, 2002; Stijns, 2005; Lederman and Maloney, 2007) used different measures – net resource export per worker or reserves per capita – and received a positive effect on economic growth “regardless of econometric technique and particularly in a panel context allowing better control for unobserved fixed effects, dynamics, and endogeneity, several plausible indicators of the incidence of natural resource exports seem to have a positive rather than a negative effect on subsequent economic growth. *Put bluntly, there is no resource curse*” (Lederman and Maloney, 2007: 3). Continuing the thought further, Mohaddes and Pesaran (2013) argued that the volatility in oil revenues and the government’s inappropriate economic and political responses to these volatilities are the curse and not resource abundance in itself.

Further studies also confirmed these results, bringing the good news for the resource-rich countries, namely that their natural resources can have a positive effect on countries’ economic growth, depending on the optimal use of them as well as the specification of the model (Cavalcanti et al., 2011; Kurtz and Brooks, 2011). So, after such development, the legitimate question will be how to make the natural resources work for the country, and how to achieve a positive economic effect.

In September 2013, an International Monetary Fund (IMF) conference on “Harnessing Natural Resource Wealth for Inclusive Growth and Economic Development” highlighted that the key challenges faced by all countries in ensuring that resource wealth contributes in a sustained and inclusive fashion to growth and higher living standards for all are macro-fiscal issues, and ways to promote economic diversification (Singh, 2013). The role for strong

institutional settings with powerful enforcement mechanisms is an essential element of strong long-term economic growth. In their work Mehlum et al. (2006) discovered that natural resources impact economic growth negatively in the case of weak institutions.

The role of fiscal policy in the economic management of resource-rich countries, where the government typically plays a dominant role in the economy through its control of natural resources and associated income, is crucial. Decisions regarding taxation expenditures, importantly including public investment, the appropriate fiscal deficit, savings mechanisms such as the role of sovereign wealth funds, and the governance framework, will have enormous consequences – not just for today but also for future generations – with the potential to ensure successful development or alternatively to destabilize the economy.

Gylfason et al. (1999) suggest that the natural resources sector creates and needs less human capital than other productive sectors, so diversification is an absolutely key area, and the fact that the resource is exhaustible is pushing the governments to think ahead. As Annop Singh, Director of the Asia and Pacific Department, IMF highlighted: “for inclusive growth in addition to wise use of the resources it is imperative that backward and forward linkages are developed between the natural resource sector and the wider economy. Achieving this objective involves financial sector deepening, building infrastructure, enhancing human capital, and promoting the agricultural sector” (Singh, 2013).

This paper analyzes the institutional setting and development of the Kazakhstani oil and gas sector and its ability to sustain long-term economic growth. In Section 2 we examine and evaluate economic development prior to the 2008 economic crisis and beyond, attempting to understand the evolution of the oil economy. Section 3 discusses the institutional players, emphasizing the interaction between natural resources and institutional players, and their affects on economic growth. In Section 4, the economic growth of Kazakhstan in the long run is modelled. Section 5 concludes the paper.

II. Economic Development Prior to the 2008 Economic Crisis and Beyond

In this section we consider the experience of the Kazakhstani economy since the country's independence. We provide an overview of the economic setting to give a regional context for our analysis of whether or not Kazakhstan has succeeded in its hydrocarbons development. We pay special attention to the role of hydrocarbons in the economy as well as the political economy challenges that the Kazakhstani government has faced.

All resource-rich countries of the CIS (including Kazakhstan) represent examples of natural resource-based economies. Commonly a resource-based economy is defined as one where natural resources account for “more than 10% of GDP and 40% of exports” (Ahrend, 2006). As Table 1 shows, all the resource-rich CIS economies clearly conform to the above-stated definition. However, we should remark that these data are based on a “narrow” definition of the hydrocarbons sector: they understate the reality of the role of this sector in their national economies. In this table we attempted to divide the period of 2002–2012 into two subperiods (before and after the 2008 economic crisis). What is clearly evident from this division, is that after 2008 the trend of relying on hydrocarbons and their contribution to GDP and total export increased even more, clearly confirming a higher level of natural-resource dependency of economic growth.

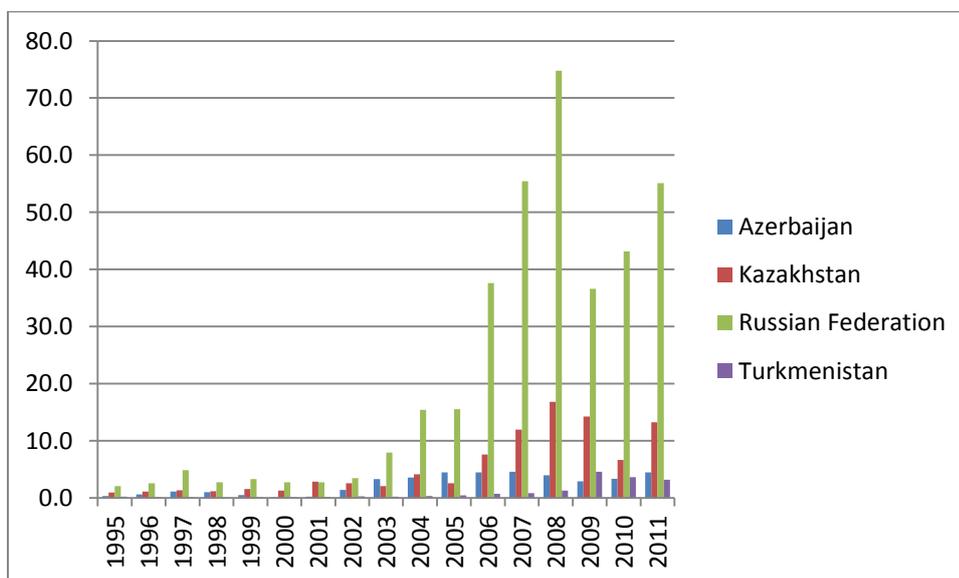
TABLE 1. AVERAGE SHARES OF THE CONTRIBUTION OF THE OIL AND GAS SECTOR IN THE CASPIAN ECONOMIES TO GDP AND EXPORTS, 2002–2007 AND 2008–2012.

Country	Share of oil and gas sector in GDP,		Share of oil and gas sector in total exports,	
	2002–2007	2008–2012	2002–2007	2008–2012
Azerbaijan	42–50	48–50	83–90	94–95
Kazakhstan	15–18	22–26	50–65	50–57
Russia	17–23	20–25	45–50	50–53
Turkmenistan	35–55	44–48	55–76	89–93

Source: columns 1 & 2: Azerbaijan Asian Development Bank, Key Indicators of Developing Asian and Pacific Countries (2007); Kazakhstan National Bank of Kazakhstan, Russia Statistical Office, Turkmenistan Government of Turkmenistan and author's calculations. Columns 3 & 4: Azerbaijan and Kazakhstan IMF Country Report No. 05/260, IMF Country Report No. 05/244 and author's calculations. Turkmenistan: state statistics and author's calculations. IMF (2013) Russian Federation. Country Report No. 13/310; October; IMF (2013) Republic of Kazakhstan. Country Report No. 13/290. October; IMF (2013) Republic of Azerbaijan.

A number of academic papers have analysed economic development in the Caspian Sea Region, and Russia since its independence (Pomfret, 1995, 2003, 2006; Kaser, 1997, 2003; Kalyuzhnova, 1998, 2002, 2008; Hanson, 2002, 2005, 2008, 2009; Aslund, 2007; Rutland, 2008). All of these highlight that these economies rely heavily on mineral wealth, and have a high degree of dependency on it. The last 20 years have brought significant changes to their economic development. The hydrocarbons sector in particular gave these economies a new shape. Russia, Kazakhstan, and Azerbaijan became strategically important to world energy markets. The latter two attracted the largest share of foreign direct investment (FDI) in the region (Figure 1).

FIGURE 1. CASPIAN SEA REGION AND RUSSIA: FDI, 1995–2011, US\$ bn



Source: World Bank: World Development Indicators, 2013.

As we can see from Figure 1, Kazakhstan has attracted the largest amount of FDI in the Caspian Region. That is because of the government’s attempt to adopt a policy of continuous improvement of the laws on investment and taxes. As a result, at the present time, considering the “Doing Business in Kazakhstan” index, the country ranks 49th in the world

in terms of favorable conditions for that (whereas Russia is in 112th position; Azerbaijan in 67th position). (see Table 2) In terms of investor protection, Kazakhstan is among the top ten.

TABLE 2. DOING BUSINESS RANKING BY THE WORLD BANK, EXTRACT FOR EASTERN EUROPE AND CENTRAL ASIA

Economy	Ease of Doing Business Rank	Filtered Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Georgia	9	1	2	1	1	1	1	4	4	4	8	13
Macedonia, FYR	23	2	1	5	10	13	6	4	2	7	15	8
Latvia	25	3	13	8	8	9	1	13	7	1	4	2
Lithuania	27	4	22	4	5	4	15	13	8	3	3	3
Armenia	32	5	4	3	10	3	10	6	14	14	19	9
Cyprus	36	6	8	7	9	19	15	9	3	2	21	1
Kazakhstan	49	7	7	15	7	8	19	1	1	22	7	6
Montenegro	51	8	12	18	4	21	1	9	12	5	23	4
Belarus	58	9	3	2	20	2	21	16	17	18	2	7
Bulgaria	66	10	11	9	13	14	10	11	13	10	18	17
Azerbaijan	67	11	6	19	21	5	15	6	10	20	5	18
Kyrgyz Republic	70	12	5	6	22	6	4	2	23	21	13	23
Turkey	71	13	16	11	3	11	19	13	11	8	9	22
Romania	72	14	15	10	19	15	4	11	18	6	16	20
Moldova	83	15	20	17	16	7	10	16	15	16	6	16
Croatia	84	16	18	12	2	20	10	23	5	13	14	19
Albania	85	17	14	24	14	22	6	3	20	9	17	10
Serbia	86	18	9	21	6	10	10	16	19	11	20	21
Kosovo	98	19	23	13	12	16	6	19	6	15	24	15
Russian Federation	112	20	21	20	24	12	21	21	9	19	1	5
Bosnia and Herzegovina	126	21	24	16	15	18	18	19	16	12	22	14
Ukraine	137	22	10	23	17	24	6	21	22	17	10	24
Tajikistan	141	23	17	22	23	17	24	6	24	23	11	12
Uzbekistan	154	24	19	14	18	23	23	23	21	24	12	11

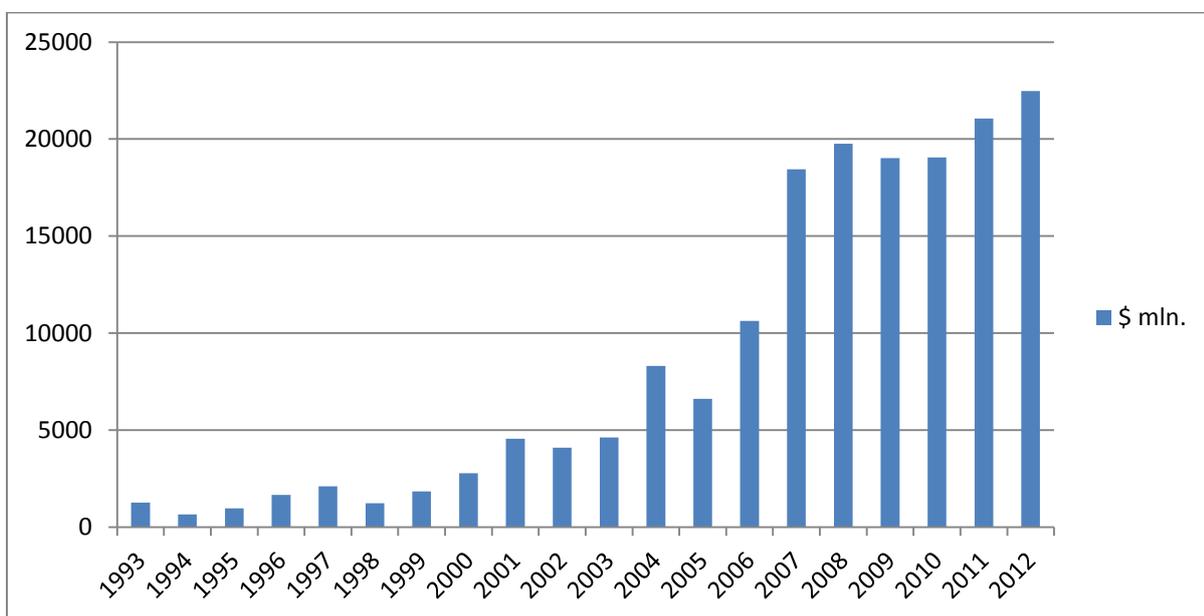
Source: World Bank Database, 2013.

Overall, since 1993, US\$ 171.2 bn of FDI has been raised in Kazakhstan with an FDI growth rate of 27% on average for the last 20 years (c.f. the FDI growth rate in the UAE 26%; Brazil 15%; Turkey 14%). In 2012, \$US 22.5 bn of FDI was recorded. The geographical composition of the FDI in Kazakhstan is represented by 120 countries, among them the main contributors are the Netherlands (\$US 7.4 bn, or 33% in 2012); China (\$US 2 bn, or 9.1% in 2012); Switzerland (\$US 1.9 bn, or 8.7% in 2012); the USA (\$US 1.3 bn, or 5.9% in 2012); and France (\$US 1.04 bn, or 5% in 2012).

This impressive picture is mainly due to investment into Kazakhstan's natural resources, although the composition of the FDI in other resource-rich Caspian economies will be similar (Kalyuzhnova, 2008). Sadly, an such unbalanced composition of FDI, did not provide any encouragement to the producers of the final manufacturing production to develop new

finished products. So, overall, during 1993–2012, 34.76% (US\$ 59.5 bn) of FDI was invested in geological surveys and exploration; and 30.22% (US\$ 51.8 bn) in the production of raw materials, with the largest share in hydrocarbons. Only 10.2% (US\$ 17.5 bn) were invested in final manufacturing production. Foreign investors had even less interest in trade 6.28% (US\$ 10.8 bn); finance 5.76% (US\$ 9.7 bn); and transportation and warehousing 1.09% (US\$ 1.9 bn).

FIGURE 2. TOTAL FDI INFLOW TO KAZAKHSTAN, 1993–2012, US\$ m



Source: National Bank of the Republic of Kazakhstan.

In order to change the situation and make sure that non-natural resource sectors of the economy are attracting sufficient amounts of FDI the Accelerated Industrial and Innovative Development Programme for 2010–2014 (AAIIDP) was adopted by the Kazakhstani government. The government reported the first results in 2013. According to Assett Issekeshv, the Minister of Industry and New Technologies, during the implementation of AAIIDP the share of FDI into crude oil declined by 18%, at the same time the share of FDI into manufacturing production, which includes such sectors as machine building, chemicals, petrochemical industries, and food processing, increased by 8%. Moreover, for the first time

FDI was attracted into high-tech industries such as pharmaceuticals, computer manufacturing, electronic, and optical products. Overall, at the present time, the government at all levels are working together with foreign investors from 80 countries on more than 400 initiatives; 81 projects (with a value of US\$ 8.8 bn) of these initiatives have already been completed.

The 1990s were very difficult years for economic development. However, from 1999 onwards, following a currency devaluation, an increase in proven oil reserves, and an upturn in oil prices, Kazakhstan experienced spectacular economic growth starting in 2000. Up to 2007 economic growth was very strong, but it has slowed somewhat as a result of stress in the financial sector and the impact of this on the construction industry. The year 2007 marked the eighth consecutive year of real GDP growth in excess of 7%. Sharp increases in oil prices in the early 2000s and subsequently the growth in non-oil revenues allowed for a further substantial expansion in budgetary expenditures and in parallel to this a sizable increase in the overall fiscal surplus (Kalyuzhnova, 2008).

From 1999 to 2008, the Kazakhstani financial system grew rapidly in the context of overall macroeconomic stability. Since 1999, macroeconomic stabilization such as real GDP growth, low rate of inflation, and positive overall fiscal balance (ratio to GDP) of the central government has taken place in the CIS countries. Following the recovery of oil prices in 2000, Kazakhstan benefited from this improvement in real GDP growth, exports, and investments (Kalyuzhnova and Nygaard, 2009).

An expanding hydrocarbon economy, higher wages, and easy access to bank credit catalyzed the growth process. There is an opinion that “Kazakhstan showed classic symptoms of the Dutch disease – an appreciating real exchange rate, a shrinking share of the manufacturing sector in the economy, and expanding non-tradable sectors like construction and services”, (Asian Development Bank, 2012: 1). However, Egert and Leonard (2008), through

econometric evidence from the monetary model of the exchange rate and a variety of real exchange rate models, showed that the rise in the price of oil and in oil revenues might be linked to an appreciation of the US dollar exchange rate of the oil and non-oil sectors. So far the good news for the Kazakhstani government is that non-oil manufacturing has been spared the negative effects of oil price increases, but of course the policy-makers should be vigilant; if oil prices remain high in the future, the nominal and real exchange rates will continue to appreciate by putting pressure on non-oil industries.

From July 2007, Kazakhstan's banking sector was affected by a serious financial crisis: the banks had borrowed heavily on the international capital markets and the speculative "bubble" in the residential property market burst. Falling oil prices and the deepening economic crisis also had a significant impact on the wider Kazakhstani economy. The 2007–2009 crisis was the first stress test for the newly established (only since 2000) National Fund of the Republic of Kazakhstan (NFRK). By 2008, the NFRK had become one of the world's largest sovereign wealth funds, alongside those of the oil-producing countries of the Middle East and Russia. As Kalyuzhnova (2011) stated, NFRK has worked for Kazakhstan overall, transfers to the fund did help mitigate the pressure on Kazakhstan's economy during the upswing, and left it better prepared for the 2007–2009 shock.

Overall, the Kazakhstani economy rebounded sharply in 2010 with 7.0% overall growth, and 10.2% growth in the non-oil sectors on account of strong anti-crisis measures, improved global conditions, revival in external demand for oil and minerals, and bank restructuring (even though credit to the private sector remained weak). The stimulus measures have helped lessen the impact of the crisis on income and employment. The growth continued in 2011 by 7.5%, underpinned by strong performance of the agriculture and services sectors, and continued public investment spending. The main drivers of this growth were extractive industries and net export, with private consumption and trade also contributing, but

investment has remained weak. Although in 2012 Kazakhstan's economic growth slowed to 5% because of the general instability of the global economy and unfavorable market conditions, the government continued to make efforts and by 2013 growth had again increased by 6%.

The global slowdown has affected exports across the region. A temporary decline in oil output has accounted for the slowing of GDP growth in Kazakhstan. Ultimately this has led to the developmental challenges that Kazakhstan needs to resolve in order to sustain the economic growth, namely diversification of the economy and reducing the reliance on oil, as well as avoiding the middle-income trap in the long term.

III. Institutional Players

As stated in the previous two sections a strong institutional setting is a necessary condition for the success of a national economy. Bad institutions negatively affect a country's growth. Cross-country evidence demonstrated a significant negative impact of natural resources on income per capita after controlling for institutional quality, trade openness and geography. In cases where the countries have bad institutions and low degrees of trade openness, the negative implications are quite drastic (Arezki and van der Ploeg, 2010). So the strategy of trade openness and improving institutional quality could turn natural resources into the country's blessing. Cross-country evidence suggests that resource dependence weakens institutions (Bulte et al., 2005), this is why diversification is essential as a precaution against further negative consequences.

It is a well known fact that resource revenues might trigger rent-seeking (Murphy et al., 1993; Acemoglu, 1995). There is a simple correlation – a higher number of rent-seekers lowers the returns to both rent-seeking and entrepreneurship with a possibility of larger marginal effects on production. Political factors clearly play a critical role in all aspects of

state policy and, of course, the type of political system has a significant impact on the distribution and spending of hydrocarbon revenues and ultimately on economic sustainability (Lal, 1995; Auty, 2003; Eifert et al., 2003). Understanding Kazakhstan's position in this respect might provide insights into the policy options available to the government. Hydrocarbon resources in Kazakhstan offer significant opportunities but also complicate economic policy-making and the redistribution of economic wealth across ethnic and social groups. Oil and gas revenues, which are unpredictable and based on exhaustible resources, can create significant problems of economic management.

Kazakhstan has adopted the formal procedures of democracy, such as elections of the president and parliament. However, in reality President Nazarbayev is an autocratic ruler who has concentrated political power in his office: "In the mid-1990s privatization shifted from being based on a voucher scheme to asset sales as a result of which by the end of 1996 many of the most valuable state enterprises had been sold. Rent-seeking was endemic, involving the entire political elite including especially the presidential family" (Kalyuzhnova, 2008: 35).

The mid-1990s is characterized as an era of oil and gas development where the elite found the principal source of wealth generation, although initially it was hindered by the low level of oil prices and Russian control over export routes. The question of demarcation of the Caspian Sea and uncertainty over its legal status was another instrument that Russia used in order to limit Kazakhstan's role as competitor in the export of hydrocarbon resources. The hydrocarbon wealth has provided a significant opportunity for Kazakhstan to create sustained growth. However, it remains unclear whether the country can deal with the rent-seeking and corruption, and responsibly invest its oil windfalls as political reform remains elusive (Kalyuzhnova, 2008). Overall, the authoritarian Kazakhstani government is relatively benign and has delivered more in terms of economic prosperity than other Central

Asian countries and, possibly, Russia. It is a reformist autocracy and oil revenue has resulted in economic growth that limits popular discontent.

Let us now analyze the evolving role and interests of the state in the hydrocarbons industry, in terms of national political and economic goals and development objectives. It is clear that throughout the years of independence the Kazakhstani government has assumed some degree of accountability and vision, and has pursued the over-arching goal of maximization of the benefits for the whole nation from hydrocarbon wealth. The route through which the government operates is the Ministry of Oil and Gas, which effectively manages the country's hydrocarbons industry. It is, of course, debatable, what is "long-term" and who and how "true benefit to the entire nation" are defined – and this needs to be seen in the light of governmental statements, manifestos, and programs on the development of hydrocarbon resources (Kalyuzhnova, 2008). Through the analysis of these documents we could conclude that Kazakhstani energy policy is based on sound economics and environmental practices (it is another question about the implementation) as well as best legal practices and technologies (at least, this is what is always stated). This is how the government is positioning itself in its relations with investors (foreign and domestic).

In the 1990s, Kazakhstan started from scratch and the government built up its financial resources and experience, so later on in 2009 they had gained confidence to press their strategic interests vis-à-vis the industry. At the same time companies have become less aggressively concerned to start new projects. In the Kazakhstani oil and gas industry we observe the formation of large projects, which attract multiple partners. In the past, there have been cases of tension surrounding changes in tax regimes or local content regulations – as well as a number of cases where foreign firms have been accused of tax avoidance.

Although, overall, experts consider Kazakhstan's tax laws among the most comprehensive in the CIS, in January 2009 Kazakhstan adopted a new Tax Code that lowered corporate-

income and value-added taxes, replaced royalty payments with a mineral-extraction tax, and introduced excess-profits and rent taxes on the export of crude oil and natural gas. “Due to the new Tax Code, new contracts cannot include any provisions on stability of contracts (stabilisation clauses). In addition, the Code only expressly preserves tax stability in PSAs and contracts approved by the RK President, meaning that other contracts made prior to the Code may not be stabilised for tax purposes” (Suleimenov and Osipov, 2010: 5).

On 8 December 2004, amendments to the Petroleum Law and Subsurface Law became effective, and, finally, the Production Sharing Agreement Law (applicable to the Caspian and Aral Seas). These changes have had a substantial impact on the petroleum industry, they reflect the government’s policies with respect to increased participation of the National Oil Company (in production); greater attention to the use and development of local content and “high technologies”, a change in government (tax) take; and increased regulation and oversight. Several major acts of legislation impact oil and gas foreign investment in Kazakhstan: the Decree of the President of the Republic “On Subsoil and Subsoil Use,” in force from 1996, and the Decree of the President of the Republic “On Petroleum,” in force from 1995. One of the main principles of the Law on Subsoil Use is the creation of favorable conditions for foreign investment. In addition to these laws, the tax and custom regimes have also played an important role in investment in the oil and gas sectors: (1) the 2003 Law on Investments; (2) the 2003 Customs Code and the Customs Code of the Customs Union, which came into force in July 2010; (3) the Tax Code; (4) the Law on Currency Regulation and Currency control; and (5) the Law on Government Procurement. These laws provide for non-expropriation, currency convertibility, guarantees of legal stability, transparent government procurement, and incentives for priority sectors.

One of the main criticisms is inconsistent implementation of these laws and regulations at all levels of the government and this, combined with a tendency for courts to automatically

accept government positions as correct, can create a significant obstacle to business in Kazakhstan.

Since the 2000s, the Kazakhstani government has been trying to solve a problem of attracting domestic investors by creating favorable conditions for them. So, adopted in 2003, the Law on Investments established a single investment regime for domestic and foreign investors and providers. It guarantees the stability of existing contracts, with the qualification that new contracts will be subject to amendments in domestic legislation, certain provisions of international treaties, and domestic laws dealing with “national and ecological security, health, and ethics.” This law contains incentives and preferences for government-determined priority sectors, providing customs duty exemptions and in-kind grants. The weakness of this law is that it excludes all the norms regarding foreign investors. The law’s narrow definition of investment disputes, its lack of clear provisions for access to international arbitration, and certain aspects of investment contract stability guarantees are also points of concern of foreign investors.

Another development, which makes foreign investors nervous, is the fact that contract cancellation and unilateral refusal can be made without intervention of the court, and moreover without giving any reasons; the Competent Body need only declare that there is an essential breach of Kazakhstani economic interests.

Despite the fact that the situation is not preferable for foreign investors there is a basis for such developments. Over the last 20 years Kazakhstan has been formed as a state, the economy has been shaped and developed, and the nation including all groups has become more interested in the terms and conditions of the oil and gas contracts concluded in the beginning of 1990s. The verdict was that a number of them had unfavorable terms with regard to Kazakhstan. Why did this happen? This could be explained by a number of reasons, starting from the economic crisis of the early 1990s, inexperience of the Kazakhstani

negotiators, as well as the high risk associated with early investments into fields with uncertain reserve bases (Suleimenov and Osipov, 2010).

In the early 1990s, the Kazakhstani government was not ready for taking financial and commercial risks in oil and gas projects. However, when the economic recovery took place after 2000, local ownership added incremental value and the Kazakhstani government assessed that deals signed with foreign investors at the beginning of independence as no longer reflecting the “real interests” of the country. One particular example presented here is case of the Kashagan project, where “the country found itself in a situation of losing potential income from technical complications, delays, overrun costs and procrastinations by the operator of the project Italian ENI. In response, Kazakhstan demanded renegotiation of the Kashagan agreement and a reconsideration of a stake and role of the national operator Kazmunaigaz” (Kalyuzhnova and Nygaard, 2008: 1836).

In February 2002, J SC NC Kazmunaigaz (KMG), the Kazakhstani NOC, was formed by merging Kazakhoil CJSC and Oil & GasTransport CJSC, with a large spectrum of diverse operations. It is a 100% state-owned vertically integrated company. This is the government’s Production Sharing Agreement (PSA) authority. One of the elements of KMG’s strategy is to maximize the economic benefits of the company: there is no doubt that the company is commercially orientated, although its degree of politicization is high (Kalyuzhnova and Nygaard, 2008). In order to become a truly independent and commercial company, KMG needs to overcome its closeness to the government. A crucial longer term question that remains to be answered is whether KMG will be an operational company or act as a stakeholder (or a combination of the two). In the future, would KMG be able to lead the oil and gas industry of Kazakhstan?

At the present time Kazakhstan is facing a challenge that will predetermine the success of long-term economic growth: namely the creation of an institutional framework, which is

required by economic maturity and the growth of markets. It is expected that such a framework will allow transactions to take place in an orderly manner. All players will know that the decisions they take and the contracts they make will be protected by law, and enforced. For all the participants in the Kazakhstani market it is important to have an institutional framework that is rational, and provides some guarantee of economic stability and certainty. This could be achieved only by good governance and sound economic policy-making.

IV. Long-term Economic Growth and Oil and Gas Wealth

In this section, first we discuss our testable hypotheses using the arguments developed in the literature. Next we summarize our empirical model and discuss the results.

A. Key Hypotheses to be Tested

One of the key arguments regarding economic growth in resource-rich countries relates to the economic institutions that emerge when political institutions allocate power to groups with interests in broad-based property rights enforcement, when they create effective constraints on power-holders, and when there are relatively few rents to be captured by power-holders (Acemoglu et al., 2005). In the previous two sections we illustrated the assumptions, the workings, and the implications of this framework using a number of factual cases from Kazakhstani economic development since independence, and came to the conclusion that the Kazakhstani government succeeded in using its hydrocarbon wealth to enhance the economic development of the country. The question now is how sustainable this economic growth will be in the long run. Thus we argue that if the Kazakhstani government continues its sustainable macroeconomic policy (which would include diversification of the economy) together with increasing the production and export of hydrocarbons, then economic growth in the country will be sustained in the long term.

Hypothesis 1 (H1). *Economic growth of 2–3% is sustainable in Kazakhstan in the long run if the government conducts a relevant economic policy and succeeds in increasing oil output and export.*

Hypothesis 2 (H2). *The international oil price will play a significant role in the sustainability of Kazakhstani economic growth in the long run.*

B. Model and Data

Modeling of Kazakhstan's long-term economic growth is a challenging task.

First of all, for the last two decades the Kazakhstani economy has been through two distinct periods. In the first half of the 1990s, the country's GDP dramatically contracted (by 1995 it had decreased by 39% to the level of 1990). In 1996, the production decline stopped and GDP remained flat until 1999. Since 2000, Kazakhstan's GDP has been growing consistently, except during 2008–2009 (the year of the crisis), with an average annual increase of 7–8%. Rapid growth of oil production and exports constituted a base for this impressive economic dynamism.

Secondly, using the growth accounting modeling of oil exporters' (including the Kazakhstani case) economic growth is quite difficult, since it is affected by the volatility of oil and gas revenues, which ultimately cause fluctuations in GDP dynamics. In the Solow–Swan growth accounting framework fluctuations in oil and gas revenues will be absorbed by the total factor productivity. The latter would just mechanically follow the oil price and/or oil export volume dynamics.

Thirdly, quantification of stock variables for the Kazakhstani economy, which has emerged from a period of central planning and transition, is rather challenging. Values of physical and human capital inherited from the past have crucially and chaotically depreciated. However, new market values for various forms of capital stock remain unsettled.

Based on these arguments we concluded that a standard potential output approach based on various specifications of the Solow–Swan growth model is not relevant in the case of Kazakhstan. Therefore we relate our empirical model to work by Esfahani, et al. (2012), which states that in the situation of sustainable oil output and export in the long term an oil exporter could enter the long-run output equation in a Cobb–Douglas production function with a coefficient equal to the share of capital (Esfahani et al., 2009, 2012).

Esfahani et al. (2012) and Cashin et al. (2012) proposed to estimate the economic growth of oil exporters using physical oil exports, the world oil price, and GDP of the country’s major trading partners. For the Kazakhstani case, this approach cannot be implemented due to the fact that in the 1990–2000 period a large part of oil exports was channeled via the offshore zones (e.g., Virgin Islands, Bahamas), therefore it is impossible to receive the time-series trend that would realistically reflect oil export structure in Kazakhstan. It is even more important to stress that the world oil price is interlinked with the GDP of the major trading partners of oil exporters. Bringing the GDP of the oil importers to the right side of the equation creates a multicollinearity problem. For this reason we decided to use the simplifying approach of Esfahani et al. (2012). This approach is applicable to the case of an oil-exporting country with a comparatively small internal market and substantial structural barriers for diversification outside the mineral sector (e.g., land-locked country, remoteness from world markets, burden of institutional and historical heritage, etc.), and converges to a framework

$$y = a * export + b * p, \tag{1}$$

where: y – GDP in real terms;
 $export$ – physical volume of oil export in real terms;
 p – world price of oil in real terms.

We use this framework for establishing a potential output growth rate for Kazakhstan. Equation (1) is assessed with the autoregressive distributed lags model (ARDL). ARDL is a

dynamic model in which the independent variables influence the dependent variable with a time lag, while the dependent variable is correlated with its own lags.

At the first step, the ARDL examines the existence of a long-run relationship among all variables. If co-integration exists, an error-correction model is assessed for evaluation of the short-run adjustment of the variables included. In comparison with other co-integration techniques ARDL has some advantages. First, it is applicable irrespective of the order of integration of the underlying time-series. Second, ARDL is more robust to small sample sizes (Ghatak and Siddiki, 2001). Given the short time span of most economic indicators, other econometric techniques such as vector autoregression models would produce inefficient estimates for Kazakhstan. Third, bounds test for co-integration within the ARDL framework proposed by Pesaran and Shin (1999) and Pesaran et al. (2001) made the model applicable for solving a wide range of applied tasks.

To test the model we use annual time-series of real Kazakhstani GDP, physical volume of crude oil export, and Brent oil price, all in real terms. Historical data for the period 1990–2012 was gathered from a variety of sources. GDP and exchange rates are taken from the official national accounts data. The volume of physical oil exports is incorporated from the BP World Energy Statistical Review. The price of dated Brent oil is taken from the Energy Information Administration database and Bloomberg. All the data are expressed in logarithmic real terms. GDP and oil price are based in 2005. For GDP we use an official deflator. Brent is deflated by using the US CPI index.

For the long-term forecasts a simple set of assumptions and calculations is applied. We analyzed two scenarios of oil export from Kazakhstan. In 2011, the International Energy Agency (IEA) analyzed in detail perspectives of oil and natural gas exports from the Central Asian countries, including Kazakhstan. The IEA is very optimistic about Kazakhstani export potential and considers that the country could export about 123 m tons of oil by 2020 and

about 178 m tons by 2030 (IEA, 2011). Given the actual situation regarding all large oil deposits in Kazakhstan, especially recurrent delays with running the Kashagan giant deposit as well as problems with expanding export infrastructure, such optimism is excessive. Thus we consider another, more realistic, export scenario: Kazakhstan's oil exports will reach 85 m tons by 2020 and 115 m ton by 2030 (for details see Reznikova and Zhukov, 2012).

For the price of Brent oil we use two scenarios. In the reference case, the price of a barrel of Brent reaches US\$ 111 by 2020 and US\$ 112 by 2030. In the high oil price scenario the values are US\$ 112 and US\$ 141, respectively. These ranges are very close to the OPEC long-term oil price assumptions, which we consider reasonable as they properly reflect the future constellation of fundamentals at the physical oil market (OPEC, 2013).

C. Empirical Results

We fit the following ARDL model with Kazakstan's historical annual data for the period 1992–2012:

$$y_t = \alpha + \sum_{i=1}^{k_1} (\beta_i * y_{t-i}) + \sum_{i=0}^{k_2} (\gamma_i * export_{t-i}) + \sum_{i=0}^{k_3} (\pi_i * p_{t-i}) + \varepsilon_t \quad (2)$$

where: y_t – logarithm of GDP in billion dollars of 2005;

$export_t$ – logarithm of oil physical volume export;

p_t – real oil price in dollars of 2005;

k_1, k_2, k_3 – number of lagged variables.

At the first step the model establishes long-term co-integration relations between levels of GDP, physical volume of exports, and the Brent oil price in the form (Table 3):

$$\ln y = 0.44 * \ln(export) + 0.31 * \ln(p) \quad (3)$$

The logarithmic form in Equation (3) is easing a problem of stationary time-series. As stated above, the ARDL works efficiently with variables with different orders of integration.

According to Schwarz Bayesian Criterion (SBC) and Akaike Information Criterion (AIC) the optimal lag structure was set at one.

Coefficients of both physical oil exports and oil price are significant. F-statistics and W-statistics lie above the upper bound tests.

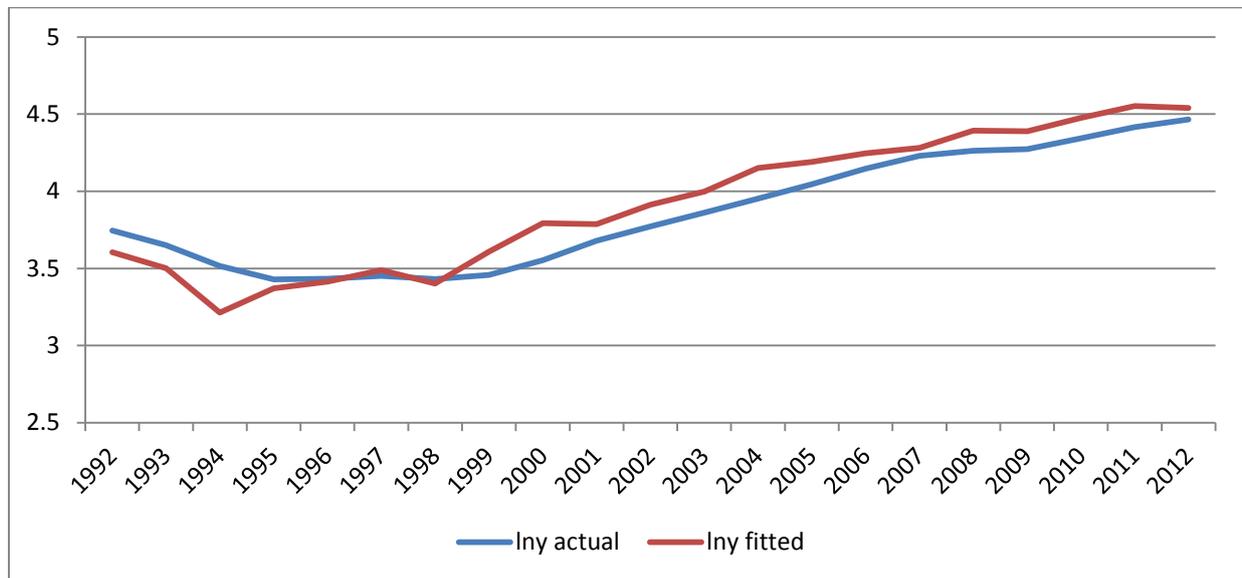
TABLE 3. ESTIMATED LONG-RUN COEFFICIENTS FOR THE ARDL MODEL (1,1,1)

Variable	Coefficient	Standard error	T-ratio (probability)
<i>Export</i>	0.43430	0.019272	22.53461 (0.000)
<i>P</i>	0.30877	0.033955	9.0933(0.000)
ARDL lower and upper bounds tests*			
<i>F-statistics</i>	95% upper bound		90% lower bound
59.6017	3.2204		4.5609
<i>W-statistics</i>			
178.8051	9.6612		13.6827

* the ARDL model is relevant if the statistics lie above the upper bound.

The actual and fitted values of historical GDP are almost coincident with each other (Figure 3), confirming the validity of the ARDL choice for modeling Kazakhstani economic growth.

FIGURE 3. ACTUAL AND FITTED VALUES OF KAZAKHSTAN’S GDP 1992–2012 (LOGARITHMS OF ABSOLUTE VALUES).



At the second step, the ARDL models a short-run adjustment of the variables to the log-run co-integration relationship. We get the following estimation (Table 4):

$$\Delta \ln y_t = 0.1 * \Delta \ln(\text{export})_t + 0.09 * \Delta \ln(p)_t - 0.44 * ECM_{t-1}$$

Coefficients of all three regressors pass the probability test. The ECM coefficient is highly significant.

TABLE 4. ESTIMATED ERROR CORRECTION DYNAMICS FOR THE ARDL MODEL (1,1,1)

Variable	Coefficient	Standard error	T-ratio (probability)
Dexport	0.10312	0.021037	4.9020 (0.000)
Dp	0.088973	0.020575	4.3242(0.000)
ECM _{t-1}	-0.44195	0.035653	-12.3960(0.000)

At the final stage, based on various assumptions of future oil exports from Kazakhstan and the Brent oil price discussed above and using the expression:

$$\ln y = 0.43 * \ln(\text{projected export}) + 0.31 * \ln(\text{projected } p) - ECM_{t-1}$$

We arrive at Kazakhstan’s GDP growth rates for the period 2013–2030 (Table 5). To bring the data to present realities in the table we rebased the Brent oil price from 2005–2012.

TABLE 5. KAZAKHSTAN’S GDP GROWTH RATES PROJECTIONS UNTIL 2030

Brent oil price US\$ 2012 per barrel					
	Reference scenario	High oil price scenario		Reference scenario	High oil price scenario
2020	113	116	2020	113	116
2030	113	143	2030	113	143
Volume of oil export, m tons					
	Authors			International Energy Agency, 2011	
2020	85		2020	123	
2030	115		2030	178	
Annual GDP growth rates, %					
2013–2020	2.0	1.9	2013–2020	3.6	3.6
2021–2030	1.3	2.0	2021–2030	1.9	2.6

The modeling shows that only in a very optimistic scenario of rapid oil export increase and the setting of high world oil prices, growth rates of Kazakhstan’s GDP would reach 3.6% in 2013–2020 and 2.6% in 2021–2030. In a more realistic scenario, providing for a comparatively slow development of the Kashagan field potential, Kazakhstan’s GDP is expected to increase by 2.0% in 2013–2020 and 1.3–2.0% in 2021–2030. Relying on the oil sector, Kazakhstan can maintain at least 2% annual economic growth in the long run (**H1**). As our estimations have proved, the world oil price crucially contributes to the sustainability of Kazakhstani economic growth (**H2**). Thus these results support our two testable hypotheses.

V. Conclusions

Over the last ten years mineral wealth has played a significant role in the economic development of resource-rich CIS countries, such as Kazakhstan. In this light the aim of the paper was to investigate whether, in reality, Kazakhstan would benefit from its hydrocarbons sector and become the best oil and gas magnate in the region.

In this paper we attempted to analyze the institutional setting and development of the Kazakhstani oil and gas sector and its ability to sustain long-term economic growth. We assessed the importance of hydrocarbons in the development of the Kazakhstani economy.

Our theoretical framework provided the basis for the empirical analysis based on an ARDL model combined with stochastic volatility, which allowed for movements in oil prices and revenues. Based on our empirical findings we concluded that Kazakhstan's economic performance over the past decade can be credited with significant achievements, including, among many others, rapid growth in per capita real GDP, substantial growth of the output and exports of the mining sector, significant achievements in transportation infrastructure, improvements in social indicators, and maintaining price and exchange-rate stability.

Our estimations have suggested that the country's development and economic growth (1.5–3%) over the medium to long term, will still be based on the hydrocarbons sector. Although for sustainability it will be important to continue to increase the competitiveness and diversification of the economy. Unfortunately, no significant progress has yet been made in this direction.

Growth, expectations, etc. have been “corrected” by the technical availability, costs, transport routes, and issues of governmental policies, among other things. Any governmental policies with regard to the oil and gas sectors are aiming to succeed in increasing the overall prosperity of the country. For the sustainability of economic growth, the combination of two policies is required: namely macroeconomic and energy policies. The continuation of a sustainable macroeconomic policy with a low rate of inflation combined with further diversification of the economy will help to ensure a stable energy policy, which would lead to the further increase in hydrocarbon production, which is ultimately at the core of the economic prosperity of Kazakhstan.

References

- Acemoglu, D. (1995). "Reward Structures and the Allocation of Talent." *European Economic Review*, 39(1): 17–33.
- Acemoglu, D., S. Johnson, and J. A. Robinson (2005). "Institutions as the Fundamental Cause of Long-Run Growth". In *Handbook of Economic Growth*, ed. P. Aghion and S. Durlauf, Chapter 6, pp. 385–471. North Holland: Elsevier.
- Ahrend, R. (2006). "How to Sustain Growth in a Resource Based Economy? The Main Concepts and their Application to the Russian Case", OECD Economics Department Working Paper No. 478, Paris.
- Al-Kasim, F., R. Skinner, and R. Arnott (2006). *Managing Petroleum Resources: the "Norwegian Model" in a Broad Perspective*. Oxford Institute for Energy Studies.
- Andersen, S. S. (1993). *The Struggle over North Sea Oil and Gas: Government Strategies in Denmark, Britain and Norway*. Oslo: Scandinavian University Press.
- Arezki, R., and F. van der Ploeg (2010). "Do Natural Resources Depress Income Per Capita?" *Review of Development Economics*, 15(3): 504–21.
- Asea, P., and A. Lahiri (1999). "The Precious Bane." *Journal of Economic Dynamic and Control*, 23(5/6): 823–49.
- Asian Development Bank (2012). "Country Partnership Strategy: Kazakhstan 2012–2016." www.adb.org/documents/kazakhstan-country-partnership-strategy-2012-2016 [Accessed 9 Dec 2013].
- Aslund, A. (2007). *Russia's Capitalist Revolution*. Washington, DC: Petersen Institute.
- Auty, R. M. (2001). "The Political Economy of Resource-driven Growth." *European Economic Review*, 46(4/6): 839–46.

- Auty, R. M. (2003). "Natural Resources and 'Gradual' Reform in Uzbekistan and Turkmenistan." *Natural Resources Forum*, 27(4): 255–66.
- Bevan, D., P. Collier, and J. W. Gunning (1999). *The Political Economy of Poverty, Equity and Growth: Nigerian and Indonesia*. Oxford: Oxford University Press.
- Blomstrom, M., and A. Kokko (2007). "From Natural Resources to High-Tech Production: The Evolution of Industrial Competitiveness in Sweden and Finland." In *Natural Resources: Neither Curse nor Destiny*, ed. D. Lederman, and W. F. Maloney, pp. 71–99. Stanford, CA: Stanford University Press.
- Bravo-Ortega, C., and J. de Gregorio (2005). "The Relative Richness of the Poor? Natural Resources, Human Capital and Economic Growth." World Bank Working Paper, 3484.
- Brunnschweiler, C, and E. Bulte (2008). "The Resource Curse Revisited and Revised: A Tale of Paradoxes and Red Herrings." *Journal of Environmental Economics and Management*, 55(1): 248–64.
- Bulte, E., R. Damania, and R. Deacon (2005). "Resource Intensity, Institutions and Development." *World Development*, 33(7): 1029–44.
- Cashin, P., K. Mohaddes, and M. Raissi (2012). "The Global Impact of the Systemic Economies and MENA Business Cycles." IMF Working Paper WP/12/555. Washington.
- Cavalcanti, T. V. de V., K. Mohaddes, and M. Raissi (2011). "Growth, Development and Natural Resources: New Evidence Using a Heterogeneous Panel Analysis." *Quarterly Review of Economics and Finance*, 51(4): 305–18.
- Egert, B., and C. S. Leonard (2008). "Dutch Disease Scare in Kazakhstan: is it Real?" *Open Economies Review*, 19(2): 147–65.

- Eifert, B., A. Gelb and N. B. Tallroth (2003) “Managing Oil Wealth”, *Finance and Development*, 40(1).
- Esfahani, H. S., Mohaddes, K., and Pesaran, M. H. (2009). “Oil Exports and the Iranian Economy.” CESifo Working Paper No. 2843, November 2009.
- Esfahani, H. S., Mohaddes, K., and Pesaran, M. H. (2012). “An Empirical Growth Model for Major Oil Exporters.” CESifo Working Paper No. 3780, March 2012.
- Fasano, U. (2002). “Review of the Experience with Oil Stabilisation and Savings Funds in Selected Countries”. IMF Working Paper WP/00/112.
- Frankel, J. (2010). “The Natural Resource Curse: A Survey.” National Bureau of Economic Research Working Paper No. 15836, March 2010.
- Gelb, A. (1988) (ed). *Oil Windfalls: Blessing or Curse?* Oxford: Oxford University Press.
- Ghatak, S., and J. U. Siddiki (2001). “The Use of the ARDL Approach in Estimating Virtual Exchange Rates in India.” *Journal of Applied Statistics*, 28(5): 573–83.
- Gylfason, T. (2001). “Natural Resources, Education, and Economic Development.” *European Economic Review*, 45(4/6): 847–59.
- Gylfason, T., T. H. Tryggvi, and G. Zoega (1999). “A Mixed Blessing: Natural Resources and Economic Growth.” *Macroeconomic Dynamics*, 3(2): 204–25.
- Hanson, P. (2002). “Barriers to long-run growth in Russia.” *Economy and Society*, 31(1): 62–84.
- Hanson, P. (2008). “The August 2008 Conflict: Economic Consequences for Russia.” Chatham House Briefing Note, September 2008.
- Hanson, P. (2009). “Russia to 2020.” Finmeccanica Occasional Paper, November 2009.

- Hanson, P., and E. Teague (2005). "Big Business and the State in Russia." *Europe-Asia Studies*, 57(5): 657–80.
- Humphreys, M., J. Sachs, and J. E. Stiglitz (2007). *Escaping the Resource Curse*. New York: Columbia University Press.
- Innis, H. (1956). *Essays in Canadian Economic History*. Toronto: University of Toronto.
- International Energy Agency (2011). "World Energy Outlook 2011". Paris: IEA.
- Isham, J., M. Woolcock, L. Pritchett, and G. Busby (2003). "The Varieties of Resource Experience: Natural Resource Export Structures and the Political Economy of Economic Growth." *World Bank Economic Review*, 19(2): 141–74.
- Jahan-Parvar, M. R., and H. Mohammadi (2011). "Oil Prices and Real Exchange Rates in Oil-Exporting Countries: A Bounds Testing Approach." *Journal of Developing Areas*, 45(1): 309–18.
- Kalyuzhnova, Y. (1998). *The Kazakhstani Economy: Independence and Transition*. Basingstoke: Palgrave Press.
- Kalyuzhnova, Y. (2002). "Economies and Energy." In *Energy in the Caspian Region: Present and Future*, ed. Y. Kalyuzhnova, A. M. Jaffe, D. Lynch, and R. Sickles, Chapter 3. Basingstoke: Palgrave.
- Kalyuzhnova, Y. (2008). *Economics of the Caspian Oil and Gas Wealth: Companies, Governments, Policies*. Basingstoke: Palgrave Press.
- Kalyuzhnova, Y. (2011). "The National Fund of the Republic of Kazakhstan (NFRK): From Accumulation to Stress-test to Global Future." *Energy Policy*, 39(10): 6650–7.

- Kalyuzhnova, Y., and C. A. Nygaard (2008). "State governance evolution in resource rich transition economies: an application to Russia and Kazakhstan". *Energy Policy* 36, 1829–1842.
- Kalyuzhnova, Y., and C. A. Nygaard (2009). "Resource Nationalism and Credit Growth in FSU Countries." *Energy Policy*, 37(11): 4700–10.
- Kaser, M. (1997). *The Economies of Kazakhstan and Uzbekistan*. London: The Royal Institute of International Affairs.
- Kaser, M. (2003). "The Economic and Social Impact of Systemic Transition in Central Asia and Azerbaijan." *Perspectives on Global Development and Technology*, 2(3): 459–73.
- Karl, T. L. (1997a). "The Perils of the Petro-state: Reflections on the Paradox of Plenty." *Journal of International Affairs*, 53(1): 31–48.
- Karl, T. L. (1997b). *The Paradox of Plenty: Oil Booms and Petro-states*. Berkeley: University of California Press.
- Kemp, A. G., and F. A. Smith (2002). "North Sea Oil and the Aberdeen Economy in Retrospect". In *Concentration and Dependency. The Role of Maritime Activities in North Sea Communities, 1299–1999*, ed. David J. Starkey and Morten Hahn-Pedersen, pp. 281–305. Fiskeri - og Sofartsmuseets Studierisere.
- Kemp, A. G., and L. Stephen (2005). "Petroleum Policy and Prospects in the UK Continental Shelf (UKCS)." In *Petroleum Industry Regulation within Stable States*, ed. S Glomsrod, and P. Osmundsen, pp. 131–56. Aldershot: Ashgate Publishing.
- Kurtz, M. J., and S. M. Brooks (2011). "Conditioning the 'Resource Curse': Globalization, Human Capital, and Growth in Oil-rich Nations." *Comparative Political Studies*, 44(6): 747–70.

- Lal, D. (1995). "Why Growth Rates Differ: the Political Economy of Social Capability in 21 Developing Countries." In *Social Capability and Long-term Economic Growth*, ed. Bon Ho Koo, and Dwight H. Perkins. New York: St. Martin's Press.
- Lane and Torrell (1996) "Power, Growth and the Voracity Effect," *Journal of Economic Growth*, May: 217-245.
- Larsen, E. R. (2006). "Escaping the Resource Curse and the Dutch Disease? When and Why Norway Caught Up and Forged Ahead of its Neighbours." *American Journal of Economics and Sociology*, 65(3): 605–40.
- Lay, J., and T. O. Mahmoud (2004). "Bananas, Oil, and Development: Examining the Resource Curse and its Transmission Channels by Resource Type." Working Paper No. 1218. Kiel Institute for World Economics.
- Lederman, D., and W. F. Maloney (2007). *Natural Resources: Neither Curse nor Destiny*. Stanford, CA: Stanford University Press.
- Maloney, W. (2002). "Missed Opportunities: Innovations and Resource-based Growth in Latin America." *Economia*, 3(1): 111–67.
- Mehlum, H., K. Moene, and R. Torvik. (2006). "Institutions and the Resource Curse." *Economic Journal*, 116(508): 1–20.
- Mohaddes, K., and M. H. Pesaran (2013). "One Hundred Years of Oil Income and the Iranian Economy: a Curse or a Blessing?" Cambridge Working Papers in Economics 1302, University of Cambridge: Faculty of Economics.
- Murphy, K., A. Schleifer, and R. Vishny (1993). "Why is Rent-seeking so Costly to Growth?" *American Economic Review, Papers and Proceedings*, 83(2): 409–14.
- OPEC (2013) *The World Oil Market Outlook*. Vienna.

- Papyrakis, E., and R. Gerlagh (2004). "The Resource Curse Hypothesis and its Transmission Channels." *Journal of Comparative Economics*, 32(1): 181–93.
- Pesaran, M. H., and Y. Shin (1999). "An Autoregressive Distributed Lag Modelling Approach to Cointegration Analysis." In *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*, ed. S. Storm, Chapter 11. Cambridge: Cambridge University Press.
- Pesaran, M. H., Y. Shin, and R. Smith (2001). "Bounds Testing Approaches to the Analysis of Level Relationships." *Journal of Applied Econometrics*, 16(3): 289–326.
- Pomfret, R. (1995). *The Economies of Central Asia*. Princeton, NJ: Princeton University Press.
- Pomfret, R. (2003). "Economic Performance in Central Asia Since 1991: Macro and Micro Evidence." *Comparative Economic Studies*, 43(4): 442–65.
- Pomfret, R. (2006). *The Central Asian Economies Since Independence*. Princeton, NJ: Princeton University Press.
- Prebisch, R. (1959). "The Economic Development of Latin America and its Principal Problems." Reprinted in *Economic Bulletin for Latin America*, 7(1): 1–22, 1962.
- Reznikova, O and S. Zhukov (2012). "Central Asia and Azerbaijan – New Energy Exporting Region". In: Zhukov S.V.(Ed.), *Asian Energy Scenarios 2030*. Magistr, Moscow,(in Russian).
- Rodriguez, F., and J. D. Sachs (1999). "Why do Resource-abundant Economies Grow More Slowly?" *Journal of Economic Growth*, 4(3): 277–303.
- Rosser, A. (2006). "The Political Economy of the Resource Curse: a Literature Survey." IDS Working Paper 268. Brighton, UK: Institute of Development Studies.
www.ids.ac.uk/publication/the-political-economy-of-the-resource-curse-a-literature-survey [Accessed 9 Dec 2013].

- Rutland, P. (2008). "Putin's Economic Record: is the Oil Boom Sustainable?" *Europe-Asia Studies*, 60(6): 1051–72.
- Sachs, J. D., and A. M. Warner (1995, revised 1997). "Natural Resource Abundance and Economic Growth." In *Leading Issues in Economic Development*, ed. G. Meier and J. Rauch. Oxford: Oxford University Press.
- Sachs, J. D., and A. M. Warner (1999). "The Big Push, Natural Resource Booms and Growth." *Journal of Development Economics*, 59(1): 43–76.
- Sachs, J. D., and A. M. Warner (2001). "The Curse of National Resources." *European Economic Review*, 45(4/6): 827–38.
- Sala-i-Martin, X., and A. Subramanian (2003). "Addressing the Natural Resource Curse: an Illustration from Nigeria." NBER Working Paper No. 9804. Cambridge, MA: National Bureau of Economic Research.
- Sarraf, M., and M. Jiwanji (2001). "Beating the Resource Curse: the Case of Botswana." Washington DC: Environment Department, World Bank.
- Singer, H. (1950). "The Distribution of Trade Between Investing and Borrowing Countries." *American Economic Review*, 40(2): 473–85.
- Singh, A. (2013). "Keynote Speech. Conference on Harnessing Natural Resource Wealth for Inclusive Growth and Economic Development." International Monetary Fund, Dili, September 18, 2013.
- Stijns, J.-P. C. (2005). "Natural Resource Abundance and Economic Growth Revisited." *Resources Policy*, 30(2): 107–30.
- Suleimenov, M. K., and Y. B. Osipov (2010). "Review of the Legislative Base for Investments in Oil and Gas Sector of the Republic of Kazakhstan – Executive Summary (English)." Project document. IIED/British Embassy Kazakhstan.

Van der Ploeg, F (2011). “Natural Resources: Curse or Blessing?” *Journal of Economic Literature*, 49(6): 366–420.

Wood, A. (1999). “Natural Resources, Human Resources and Export Composition: a Cross-country Perspective.” In *Development Policies in Natural Resource Economies*, ed. J. Mayer, B. Chamber, and A. Farooq. Cheltenham, UK: Edward Elgar.

Wright, G. (1990) “The Origins of American Industrial Success, 1879–1940.” *American Economic Review*, 80(4): 651–68.