The effect of trade on the economy of Azerbaijan

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ABSTRACT

The current thesis is aimed to evaluate the effect of trade on the economy of Azerbaijan, thus, to determine whether the country gained or lost from opening up to international trade. A detailed analysis of structure of exports, share of sectors in GDP, major economic indicators and extensions to the case studies proves the fact that Azerbaijan is a resource rich country with a high level of concentration of the economy in the mining sector. Opening up to trade has both positive and negative influence on the economy and a set of valuable policy recommendations derived in the conclusions are aimed to be useful in management of resource windfalls.

Key words: exports, "resource curse", international trade, petroleum prices.

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INTRODUCTION

Azerbaijan as a post soviet country has faced many difficulties during the last two decades for the reason that it had to manage a number of negative effects due to its postsoviet heritage and for the first time in its history has had to build an economy as an independent country. A distinctive feature of the Azerbaijani economy is a high degree of involvement in international trade processes. The examination of the structure of the country's exports shows that natural resources (oil and petroleum products) compose over 90 per cent of exports. From the one hand, it seems logical that the presence of natural resources and successful management of exports may lead to a better economic performance; however, high reliance of the economy on resource trade may result in the absence of diversification of the economy, high volatility and dependence on external forces that determine commodity prices.

The research question of the current paper is aimed an investigating whether the opening up to trade has a positive effects on the economy; moreover, if there are any negative consequence of resource trade for the economy of the country. Through taking the case study of Azerbaijan the current work investigates whether the oil windfalls are a blessing or a curse, and what is policies should be implemented in order to prevent negative outcomes in the future.

In spite of the fact that this topic is considered to be very important for policy-makers and the high level of attention to natural resources of the country exists even on the level of global economy, the issue of high reliance of the economy of Azerbaijan on resource trade has been poorly studied in the academic literature by now. In order to see the change in economic performance of the country I analyze the trend of major economic indicators; these include GDP, GDP per capita and current account balance. The investigation of trade policies of the country and oil prices will show whether there is any positive correlation between economic performance of the country and the world energy prices.

However, taking into the account that the prices of the biggest share of Azerbaijani exports, mining sector (oil, gas, petroleum), are determined by world economic forces and are dependent on political issues it would be logical to consider whether there are negative outcomes of high dependence on trade in this case.

From the point of view of increasing globalization processes, energy economy depends largely on the smooth functioning of financial markets and the effectiveness of the commodity-money mechanism. Thus, the presence of natural resources does not always imply success for the economy of the country, for the reason that there exists plenty of other factors which play significant role in case of resource rich economies.

Countries, such as Azerbaijan, which are on the transition stage of development, are very dependent on the external developments, thus, large volumes of FDI (which are attracted by the presence of natural resources) into the economy of Azerbaijan make its economy very vulnerable to the policy of such players as transnational companies, international organizations and economic policies of developed countries.

The stronger the economic is tie with external economic activity all over the world, the more vulnerable is the Azerbaijan's economy. Thus, the current thesis examines whether the resource trade makes the economy of Azerbaijan vulnerable, or opening up to trade has only positive influence on its economy.

In order to build strong arguments and provide sufficient information for my research, relevant literatures have been investigated. Various pieces of research provide the analysis of the question of resource curse, "Dutch disease" and examples of successes and failures of different economies. The recent important papers which are analyzed in the thesis include papers by Frederick van Ploeg and Samuel Poelhekke 92009), Ploeg (2010), Stephane Pallage and Michel Robe (2003).

Moreover, for the reason that the paper will have its focus on the policy recommendations, working papers on optimal policies for resource rich developing economies and guidelines on the transparency of resource revenues were very important for the purpose of this research. The papers of such scholars as Ploeg F, Venables AJ (2011a), Collier Paul, Spence M, van der Ploeg F, Venables AJ(2010) have been used in this regard.

The paper is structured in the following way:

Chapter 1 concentrates on the literature review and the examination of already existing theories that consider transition countries facing natural resource windfall. The aim of this chapter is to construct theoretical base for the thesis and highlight the assumptions on possible harm of resource trade and the presence of high economic volatility in resource rich economies.

Chapter 2 analyzes the economy of Azerbaijan via a detailed examination of economic indicators and the structure of current account balance. Furthermore, it contains a case study on some recent projects in Azerbaijan. For the reason that the aim of this thesis is to investigate not only positive effects of trade on the economy of the country, but also its negative influence ,one of the subsections of the second chapter includes some calculations, in order to reflect the possible harm in a reliable manner.

Chapter 3 continues with the study of successful examples of resource rich countries (Norway), which have been able to manage negative consequences of the oil windfalls In

addition, a detailed analysis of different tendencies in the economies of Azerbaijan and Norway are presented in the last chapter;. Moreover, I provide the evidence of successful policies implemented in Norway in order to draw a parallel with the situation in Azerbaijan.

Finally, the conclusions of the research are stated; and there is a discussion of the outcomes of the research and policy recommendations.

CHAPTER 1. THEORETICAL REVIEW OF RESOURCE CURSE AND ECONOMIC VOLATILITY

There are various policy papers and extensive scholarly investigations into the problem of natural resources, and while some of them use econometrics papers in order to prove the effect of the presence of natural resources on the formation of an economy, others are mostly theoretical reviews of the problem. In order to understand if the problem of the "resource curse" is present in the case of Azerbaijan and its possible effect on the economy, the first chapter will concentrate on observing the existing literature explaining the main concepts of the "resource curse", its importance and implications.

1.1 "Resource curse"; volatility and growth;

In order to make it clear it is necessary to introduce the definition of the expression natural resource, thus, "industrial materials and capacities (as oil and gas) supplied by nature" can be called as natural resources. A country endowed with natural resources sometimes can be considered as the one, which experiences "resource curse". It is necessary to clarify the definition of the expression and explain the importance of this phenomena, thus, the paradoxical situation called the "resource curse" is a situation when the country is richly endowed by the non-renewable resources (in the current paper the primary interest is oil and energy sector) and despite the fact of energy abundance the economy of country experiences stagnant growth due to the fact that the whole economy is concentrated in a single industry, and there is not any economy diversification.

Because of the absence of economic diversification the economy of the country is very dependent on the dependent on the price of commodities, consequently, the whole economy and gross domestic product becomes volatile. Various research papers prove the negative correlation between the presence of "resource curse" and economic growth. Various scholars investigate whether the presence of natural resource is a blessing or a curse, and the paper by Frederik van der Ploeg (2010) tries to answer this question. The paper explains why resource windfalls can be considered as a problem for an economy. Thus, the author stresses that when the traded sector is the only source of revenues, then all the efforts are concentrated in the resource trade and absorbs all benefits from and benefits from learning by doing and other positive externalities,, then the rest non-resource export sectors are severely hit by loosing competitiveness, moreover, what makes these sectors become unable to recover and be competitive in the future period when resources run out.

The researcher explains that according to various empirical evidences it has been proved that countries with bigger share of resources in the exports do have lower indicators of growth and this evidence supports the fact that poorer countries experience it more often due to the low quality of institutions, presence of corruption and absence of the rule of law. However, the author argues that the presence of resources is not always a curse, because in case of appropriate management of resource revenues it is possible to "enjoy the fruits of natural resource wealth".

However; the empirical evidences demonstrate that most of resource endowed countries fail to invest their resource revenues into the reproducible assets such as human and physical capital (both private and public), infrastructure; foreign assets (those ones which yield the flow of income), however, World Bank data shows that in most cases resource rich countries do not reinvest their resource wealth, consequently, leading to negative genuine saving rates. The research includes an analysis of resource rich countries and considers possible options for developing countries, which are necessary for the avoidance of the future fails generated by mismanagement of the resource windfall; these options will be overviewed

in the conclusions of the current paper, where the possible policy recommendations will be discussed.

The paper of Frederick van Ploeg and Samuel Poelhekke (2009) explains that countries which have resource specialization experience lower growth and higher volatility than those economies, which are less dependent on the natural resources.

The pioneers of researchers on "resource curse" Valirie Ramey and Garey Ramey (1995) used Heston-Summers data in order to present the negative correlation between volatility and growth rates, taking into the account that the researchers were controlling initial income, human and physical capital, population growth. One reason why natural resources may lead to lower growth is that they tend to make the economy very risky. High risk is then associated with low growth, as first documented by Ramey and Ramey (1995).

Ploeg and Poelhekke (2009) indicate that the countries which are dependent on natural resources, thus, with a share of resource exports in GDP higher than 19% have standard deviation of output growth about 7.37 points; while those countries which have less than 5 % share of resources in exports perform much better, about 2.83 % standard deviation. According to the authors' estimations, the economy which has a ratio of natural resources exports to GDP of 40 percent is expected to experience 1%-point growth per annum less than the example of economy without natural resources reliance.

The paper of Ploeg and Poelhekke (2009) can be considered as an extension of the work of Ramey and Ramey (1995) for the reason that the research demonstrates the negative role of the resources in macroeconomic volatility. The authors argue that not only the presence of high reliance on the natural resources leads to hampered growth; however, the poorly constructed financial system can play a negative role. More sophisticated, sound and developed financial system results in more successful development.

However, the paper by Stephane Pallage and Michel Robe (2003) argues it is difficult for developing countries to escape volatility; moreover, the welfare cost of removing volatility may exceed the welfare gains from possible additional percentage point of growth. As T. Gylfason; T. Herbertsson; G.Zoega (1999) state the revenues coming from the exports of natural resources have the tendency to be highly volatile for the reason that their supply is usually accompanied with low price elasticity; moreover, the "resource curse" can be the reason of high real exchange rate volatility what consequently leads to lower rate of investments and as a result, further contraction of the traded sector.

The paper by Miklos Koren and Silvana Tenreyro (2007) explains why poor countries fail to reach stability and usually are more volatile that the rich ones. The authors suggest 3 major reasons for this:

- Poor countries have a tendency to specialize in fewer sectors and more volatile ones
- These countries are usually more severely and more frequently hit by aggregate shocks
- The macroeconomic fluctuations of these countries are usually highly correlated with the shocks of the sectors in which they specialize.

The higher the level of development is the higher tendency of shifting the structure of production to less volatile sectors; the same happens with the specialization of the country-on the later stages of development degree of the specialization increases.

Another research which provides detailed analysis on the challenge of managing a windfall and management of natural resource wealth is the one conducted by Frederick van der Ploeg & Anthony J. Venables (2011). As it was mentioned before, the major aim of a resource rich country should be transformation of sub-oil natural assets into the assets which will support the sustainable growth into the future or in the other words the best usage of natural wealth; however, many countries fail to implement this transformation properly and Ploeg & Venables (2011) try to explain the reasons of this failure.

The researchers introduce the permanent income hypothesis which assumes that the significant part of the resource revenues should be saved, due to the uncertainty about the future, however the paper argues on some modification necessary in this hypothesis, taking into the account the fact that developing countries are capital scarce. Authors of the paper find out that for the reason that most of resource rich countries are capital scarce and the transformation of subsoil assets into the surface one is difficult for these countries, consequently, the process of transformation is usually characterized with volatility, high degree of uncertainty and depend on many factors. For the reason that policymakers of these countries face difficult choices it is not surprising that in most cases countries do fail to accomplish the transformation and do not use the initial natural resources in the best possible way. The important policy conclusions used in the paper will be analyzed in more details in the last section of this work.

1.2 Empirical evidence and testing

Having concentrated on the 1.1 sub-section of the first chapter the current paper was concentrated mainly on the literature which provides theoretical modeling, it would be logical that 1.2 sub-section demonstrates empirical testing by providing some outstanding examples of success and failure in the management of natural resources. The paper by Frederick van der Ploeg & Anthony J Venables (2011) provides description of the growth decomposition of Nigeria's performance (as the most devastating example) and a successful example of management of resources: United Arab Emirates. The example of Nigeria proves that even though the presence of natural resources assumes high revenues; this does not always imply that resource revenues will push the economy towards the progress.

As the paper by Bevan (1999) states:

This conjunction of a powerful political impetus to public investment and a lack of civil service skill is what make Nigeria's economic history in this period so spectacular: almost the entire windfall was invested, and yet ... there was nothing to show for it.

The case of Nigeria shows that even though the country experienced the increase of oil revenues from US\$33 per barrel in 1965 to US\$325 per barrel in 2000, however, the income per capita has stagnated at US\$1100 in PPP starting from 1960; moreover, despite the fact of the presence oil revenues, Nigeria is among the 15 poorest countries in the world.

Table 1 : Comparative indicators

	Nigeria	Oil producing countries	Developing countries	All countries
Per capita GDP, PPP, 1998	955	3579	2076	3029
Growth rate of per capita GDP, 1960-98	1.336	1.105	1.520	1.739
Standard deviation of growth of per capita GDP	0.1465	0.111	0.078	0.0703
Coefficient of variation	0.110	0.101	0.051	0.040

Table 1: Comparative Indicators

Source: Xavier Sala-i-Martin & Arvind Subramanian (2003)

From the growth prospective the research by shows that from 1960 Nigeria performed worse than the average country; moreover, the economy was highly volatile and more unstable than other countries. As the research states, between 1970 and 2000 the biggest part of the population that has to survive on less than US\$1 per day shot up from 26 to almost 70 percent.

Aside from Frederick van der Ploeg & Anthony J Venables (2011) who do not make unambiguous conclusions on the solely negative impact of natural resources it would be useful to consider the brightest examples of successful management of resource for example United Arab Emirates and Latin America.

CHAPTER 2. THE EFFECT OF TRADE ON THE ECONOMY OF AZERBAIJAN

The current chapter will provide a detailed analysis of the trade pattern of Azerbaijan, and it will explain how the openness to world trade has changed the economic performance of Azerbaijan and influenced its development. This academic research is determined to investigate the effect of trade, thus, it is very important from an economic point of view to demonstrate not only the positive externalities of opening up to trade, but also the possible negative influence as well.

2.1. Overall trade structure of the Republic of Azerbaijan

Starting from the collapse of the USSR Azerbaijan Republic is considered as a transition economy, focused on oil exports. The government of Azerbaijan considered trade as the only way to start an economic boom, and consequently the further policies for development were strongly correlated with trade development.

After the collapse of the USSR, as with all post-soviet countries, Azerbaijan's economy was devastated by a crashed banking system, hyperinflation, decreased productivity, increased unemployment level, absence of trade, corruption and many other factors of destroyed "empire". (The Collapse of the USSR: A Discussion Document). Azerbaijan was left without any economic stability and a new government had to build everything from the very beginning.

From the middle of 90^s the government managed to open up to international trade and business. In 1994 the so called "Contract of the century" was signed with American partners and in particular with BP, leading to the projected investment equal \$13 bn. The signature of this contract became the beginning of "new era" in the economy of the Republic (for the statistical evidence see Figure 2) Most of economic scholars consider this moment as the breaking point of the economy of the country, thus, starting from 1994 the specialization of the country was determined. Starting from 1995, the state government could manage with high level of inflation and with the purpose of extensive opening to the world trade implemented the policies for trade development, thus, taxes on exports have been cancelled and import quotas have been abolished as well. Absence of special permissions or specific registration requirements for foreign investment made it easier to attract of FDI.

In 1997 Azerbaijan gained observer status in the WTO organization. Obtaining a membership of WTO will give Azerbaijan an opportunity to stick to international quality standards in the goods exported (mainly energy recourses), to open its services sector to foreign competition and to attract more FDI.

For the reason that Azerbaijan has access to the Caspian Sea, whose oil and gas reserves are considered as one of the major condensed gas and oil deposits, engagement to international trade can be considered as the best way for economical development of the country

In order to have a better understanding in the specialization of the country and provide strong background to the statement that the country is resource oriented it will be useful to have a look at Figure 1 which demonstrates the composition of exports by products.

The aforementioned figure clearly illustrates the concentration of exports of Azerbaijan on natural resources, almost 95 % of exported goods are mineral products; these are mineral fuels, minerals oils and their product.





Source: The State Statistical Committee of the Republic of Azerbaijan

Research question considers the effect of international trade the thesis would find approval of positive influence of trade on the economy of Azerbaijan in the form of renovated economic performance of the country.

By careful analysis of various economic indicators it will be possible to observe the tendency of the economy, and see whether there was a progress in an economic point of view, or the reverse results were achieved.

First, the discussion of economic indicators assumes analysis of GDP, which actually can present the tendency of economy in numbers. Figure 2 presents data on GDP at constant 2005 prices in U.S dollars starting from 1992 till 2012. Can be observed the positive tendency of the economy by showing how in 1998 the level of GPD of the country was \$5.9 bln and by 2008 it was already around \$28.3 bln. Thus, it grew 4 times, which can be considered as a very successful transformation.(taking into the account that it is measured at constant prices).

The insignificant drop from 2008 can be explained by the world economic downturn, and starting from 2010 the indicators point to an increasing tendency.



Figure 2: GDP (base year 2005)

Source: IMF World Economic Outlook (2013)

Second, it would be considered practical to point out GDP per capita as well for the reason that it will definitely move in the same direction as GDP does. Figure 3 presents the time series of GDP per capita starting from 1993 as the previous figure. If in the year 2000 this indicator is around \$2490 by 2010 it was already about \$8912, thus, the growth rate is even higher than in the previous case.



Source: IMF World Economic Outlook, April 2013

The observation of current account balance provides the information that Azerbaijan currently runs positive balance (Figure 4) meaning the level of exports is higher than the level of imports; however this does not mean that the country is highly productive and does not need high level of imports, the positive balance is kept only by higher level of exports.





Source: IMF World Economic Outlook, April 2013

It would be reasonable to have a look on the trend of oil prices, in order to see whether there is some correlation between oil prices tendency and economic performance. Figure 5 provides data on oil prices starting from 1995 and detailed analysis proves that the tendency of current account balance is absolutely the same as the changes in the prices of oil, thus, if in 2008 there significant drop in the prices of oil (from \$90 per barrel to \$43) the same movement is observable in the current account balance. Thus, high price of oil positively affects the current account balance; however, any drop of oil prices is immediately reflected in the current account.





Source: World Bank Database

The various investigations of the export structures and the aforementioned Figure 1 proves the fact that trade revenues do have a positive effect and increasing tendency, but the biggest part of these revenues come from the oil sector ((IMF 2011). Figure 6 presents the structure of Azerbaijan trade balance shows that in 2010 the volume of total exports were

about \$26bln, while the level of the oil sector was about \$25 bln, thus, as it can be observable from this graph the biggest share of the exports is in the oil sector.

	2007	2008	2009	2010	2011	2012
				Est.	Proj.	Proj.
Exports, f.o.b.	21,269	30,586	21,097	26,476	31,696	30,832
Oil and oil products	20,190	29,143	19,970	25,108	29,858	28,680
Other	1,079	1,443	1,127	1,368	1,837	2,152
Imports, f.o.b.	-6,045	-7,575	-6,514	-6,746	-11,275	-10,442
Oil sector	-1,292	-1,064	-700	-838	-1,977	-1,344
Others	-4,753	-6,511	-5,814	-5,908	-9,298	-9,098
Trade balance	15,224	23,012	14,583	19,730	20,420	20,390
Services, net	-2,131	-2,343	-1,608	-1,733	-4,089	-5,484
Credit	1,248	1,547	1,750	2,065	2,092	2,251
Debit	-3,379	-3,889	-3,358	-3,798	-6,180	-7,735
Oil sector	-1,851	-1,970	-1,205	-1,240	-3,909	-5,419
Income	-5,079	-5,266	-3,519	-3,467	-3,746	-3,568
Investment income, net	-5,024	-5,200	-3,476	-3,418	-3,700	-3,506
Of which : profit of oil consortium	-4,815	-5,040	-2,884	-3,199	-3,719	-3,612
Compensation of employees, net	-55	-66	-43	-49	-46	-62
Transfers, net	1,005	1,050	722	509	938	969
Of which : Private	911	999	686	480	873	903
Current account balance	9,019	16,454	10,178	15,040	13,523	12,306
Non-oil currenct account balance	-3,214	-4,616	-5,002	-4,791	-6,731	-5,999
Capital account, net	-3	11	5	14	10	10

Figure 6: Share of oil exports in total export

Source: (IMF 2011)

Additionally to the aforementioned indicators it would be useful to observe the dynamics of FDI into Azerbaijan for the reason that for a transition economy, such as Azerbaijan the inflow of FDI plays substantial role, because of the reason, that attraction more FDI will bring the inflow of financial resources, technology and will ease the access to international markets and process of integrating it into the regional and global economy. According to the state legislation (rights to use land and natural resources such as oil, gas and 100% ownership), different kinds of foreign investment are permitted, such as joint ventures. The high volume of FDI is one of the reasons of the recent economic development of Azerbaijan.

From 1995-2002 the highest ratio of FDI to GDP was observed in Azerbaijan. It ranged from 20 to 25 per cent and this is one of the highest levels of FDIs among economies in transition. The main reason for this is abundant natural recourses and successfully implemented policies in attracting oil and gas investors Moreover, the reason why actually it could be interesting to observe the level of FDI can be demonstrated in Figure 7, which presents the overall level of FDI and the level of FDI which goes to the oil sector, thus, we can see the concentration of investments in mining sector.







2.2. Case study on economic specialization

The importance of exports of natural resources can be stressed by presenting some recent cases in mining exploitation. One of the recent FDI projects in Azerbaijan is the Shah Deniz project of British Petrolium in Azerbaijan which holds of 25% of shares while the other PSA partners include SOCAR, Statoil, LUKoil, Total S.A, Statoil Hydro.

The Shah Deniz field covers approximately 860 square kilometers and its reserves are estimated to be between 1.5 and 3 bn barrels. (Shah Deniz, Azerbaijan 2010)

Shah Deniz reserves were discovered in the year of 1999; however the pipeline started the operation at the end of 2006. Development of Shah Deniz was implemented in 2 stages: from 2006 till 2008 it was providing gas through pipeline from the Azerbaijan part of the Caspian Sea to Turkey. Second stage of development has been approved recently and it is planned to become one the biggest project of Azerbaijan during last decade.

This project plays a significant role in the economic growth of Azerbaijan. It has attracted high volume of FDI and only on the first stage the financing was provided by Lukoil which invested a \$180m borrowed from the European Bank for Reconstruction and Development in 2005 with the obligation to repay the loan over 12 years. (Shah Deniz, Azerbaijan 2010)

Each of these 2 stages brought Azerbaijan significant benefits. On the first stage it was valuable financial support of the country's economy. During 2006-2007, Azerbaijan's GDP was growing at the rate of 38 % approximately and introducing this project played a significant role in this performance. Even during Great Recession in mid-2008, daily Shah Deniz production stood at about 700m standard cubic feet of gas and about 40,000 barrels of gas, thus providing stable income for the government.

For the second stage of development the decision to start Front End Engineering and Design (FEED) on the estimated \$25 billion Shah Deniz Stage 2 project it has been recently approved. The plan for the Shah Deniz Stage 2 project is aimed to open up to the "Southern Gas Corridor". BP is planning to bring gas from the Caspian Sea to markets in Turkey and Europe, thus, the major benefit for the Republic of Azerbaijan from this project will first of all be the widening target markets and opening up to the international trade not only with the closest neighbors; but also more distant markets like European one. Export routes across

Turkey to Europe will launch opportunity for Azerbaijan to diversify in its foreign partners and consequently new trade partners.

Introducing more than 26 wells, two new platform and increasing gas trade through up to 4000km of new pipelines to Europe will become one of the largest oil and gas developments in the world. With the purpose to attract more FDI from Europe, three options are being considered to carry gas into Europe: the Trans Adriatic Pipeline (TAP) with a pipeline to Italy; Nabucco West taking gas from Turkish-European border through Eastern Europe to the West and the South East Europe Pipeline (SEEP) taking gas through Hungary, Bulgaria and Romania. (BP.com 2011)

Consequently, we can conclude that if on the first stage of development the main benefit of the project was financial support from foreign investors, on the second stage of development Azerbaijan started to widen the field of trade and diversification of trade partners.

However, this project cannot be considered as only having benefits from it, for the reason that as all countries with abundant natural resources Azerbaijan is not an exclusion from the "Dutch disease" or "resource curse". Attracting foreign investments only in one sector makes the economy leave the rest without necessary attention. Such projects are beneficial for country's growth; however only in the short run, while the achievement of stability in the long run may remain challenging.

2.3 Possible harm from opening up to trade

In the previous sub-sections of the current thesis there was covered the trade structure of the country and positive consequences of international trade. However, the one can be asked whether natural resource oriented trade leads solely to positive outcomes.

First and foremost it would be useful to examine sectoral GDP, thus, the input of each and every sector will be observable. The higher is the volume of input of one sector to the final amount of GDP; the lower is the level of economic diversification for the reason that when the economy is not diversified this means that economy is concentrated on one sector. The higher is level of concentration of economy on the sector, consequently, the higher is level of volatility and economic stability can be hardly achieved because of asymmetric shocks coming from outside of economy. However, a country that produces a wide variety of goods will experience a slower decrease in overall production, if in the outside markets the demand for its goods decreases.





In order to see the composition of GDP according to the sectoral input the current paper will provide statistical data on two different periods, thus, it will make observable the

Source: UNSD National Accounts 1990-2011

tendency of economic specialization. On Figure 9 it is possible to observe the structure of GDP inputs in 1990 and it would be interesting to compare it with the share of sectors in GDP 20 year later, in order to see whether there can be observed any significant changes.



Figure 9: Share in GDP 2011

Source: UNSD National Accounts 1990-2011

On the Figure 9 it can be observable that if in 1990 the share of mining sector in GDP was comparatively insignificant in two decades the country's economy becomes less diversified. The Figure 9 supports this idea of increasing concentration of economy and proves that Azerbaijan is highly concentrated on mining sector, and this sector contributes more than 50% into the share of GDP.

The numerical evidence on the above mentioned facts can be observed in Table 2, thus, if the share of mining sector in GDP in 1991 as only about 25 %, the more country opened up to international trade, the higher was demand on natural resources coming from outside and, consequently the more expand the mining sector.

Share of sector in GDP	1991	2001	2011
Agriculture, hunting, forestry, fishing	33.0	16.0	5.8
Mining, Manufacturing, Utilities	24.9	40.5	57.2
Manufacturing	17.7	6.7	4.7
Construction	6.5	6.3	8.9
Wholesale, retail trade, restaurants and hotels	4.1	8.4	8.3
Transport, storage and communication	6.6	10.9	7.0
Other Activities	25.0	17.8	12.8

Source: UNSD National Accounts 1990-2011

From the one side it seems profitable that economy experiences growth, however, the high level of concentration on the mining sector makes economy vulnerable and absence of any cushion form outside shocks exacerbates the situation.

The discussion of economic volatility and specialization should include the research on country's concentration on the specific sector and in order to measure this concentration it would be useful to introduce the conception of Herfindahl–Hirschman Index; the index which demonstrates concentration ratio and by this makes possible to determine the diversification of the economy. The index is measured from "0" to "1" moving from very wide variety of production to a very concentrated and specialized production; thus, if a HHI index is below than 0.01 it implies a high level of diversification, while a HHI index above 0.25 indicates high level of concentration of economy. In order to calculate HHI for Azerbaijan it is necessary to use data on the share of mining sector in GDP over the total level of GDP, thus the formula will look like:

N N
HHI =
$$\sum (GDP_i / GDP)^2 = \sum S_i^2$$

i=1 i=1



Figure 10: HHI level

Source: Author's calculations

Figure 10 demonstrates author's calculations on the measurement of the index in case of Azerbaijan, thus, it becomes observable that if in 90th the level of concentration is not high and economy seems to look diversified, in a decade the picture totally changes and starting from 2000⁻²001 the level of concentration prevails the abovementioned 0.25 break-even point of the index and economy seems to look very concentrated, and a big spike in concentration from 2004 is explained by increasing number of various projects (Azeri-Chirag Guneshli (2004-2010), Shah Deniz (2006)). The major macroeconomic indicators of the country show

the same tendency, thus, there is observable increase in the level of GDP and GDP per capita starting from 2004. The increasing tendency of concentration can be explained by the fact that the higher is volume of resource trade and consequently economy's revenues from trade, the more country concentrates on the mining sector and the index of concentration becomes higher and the level of economic volatility is higher.

This means that in case of outside shocks in the mining sector the economy will be hit severely. Another way to show high level of volatility of economy is presented in Figure 11, which includes the estimation of average growth rate of the country and its volatility; where the level of volatility is measured level of volatility, measured as the standard deviation of annual growth rates for 4 different time periods starting from 1990 till 2010.





Source: Author's calculations

This chapter could prove that Azerbaijan is a natural rich country with resource specialization and high level of revenues from resource trade. On the one hand all the aforementioned facts and indicators supports the idea that trade did influenced positively on the economic performance and it is logical to conclude that increased exports and consequently export revenues, positive trade balance, growth of GDP are to the great extent due to the international trade and presence of natural resources. However, economic processes in Azerbaijan in a great scale depend on world economic actions, world investment processes. The trade ratio is currently above 60 per cent of GDP and it is constantly growing, however, oil and petroleum products compose over 80 per cent of the country's exports, thus, there is high dependence on fuel prices and the current circumstances of development of foreign trade in Azerbaijan depends to a great extend on market demand. The numerical measurements and calculation prove high concentration of economy what pushes the economy into the unfavorable economic uncertainty.

CHAPTER 3. SUCCESSFUL EXAMPLE OF RESOURCE WINDFALL MANAGEMENT.

THE CASE OF NORWAY.

From the previous analysis it became observable that Azerbaijan had to implement some changes to decrease the concentration ratio and make the economy less diversified. It would be valuable to investigate the cases of the countries that faced the same problems and could put into practice useful policies. The author of the current thesis considered Norway and Chili as one of the most successful examples of economies that faced resource windfalls and could manage with them.

Liberalized world trade and high international demand, highly developed manufacturing industry, highly productive and skilled labor force, centralized economy planning are not the only determinants of success of Norway. The country with GDP ranking 24/186 is specializes in mining and manufacturing, electronics and automotive, textiles and agriculture, forestry, telecommunications. However, the biggest block on the way of Norway to economic diversification remains the vast presence of natural resources in the North Sea and in the Barents Sea, in particular oil and gas. With the major fields in Frigg, Ekofisk, Sleipner, Troll, Statfjord, and Oseberg, the revenues from petroleum sector of Norway contribute for about a quarter of overall GDP of the country. ("Statistics Norway raises '07 GDP outlook, cuts '08'' (2007))

According to the estimations International Energy Agency Norway is the third biggest exporter of energy in the world and Western Europe's biggest natural gas exporter, with one of the largest reserves of petroleum and gas, thus, playing twin role of energy supplier on the global energy market. (Energy Policies of IEA countries - Norway 2011) The presence of natural resource has been the driver of Norway's economy through last 30 years, and the influence on resource windfalls on the economic performance has to be admitted. For the reason that Norway started to exploit the natural resources in 1970th, the economy faced many problems, in particular the due to the internal problems of the OPEC countries and volatile commodity prices in 70th and 80th. The overall trade performance of Norway and oil prices can be observed on Figure 12, which demonstrates the volatility of the prices and, consequently periodically unpredictable trade surplus of the economy.

Figure 12: Trade balance of Norway



North Sea Oil Prices and Norway's Trade Balance, 1975-2000

Source: The economic history of Norway (2010)

Even though Norway is a resource oriented economy the difference between the performance of Norway and Azerbaijan can be easily captured, thus, the author's calculations in the previous chapter on Herfindahl–Hirschman Index can be applied for the comparison of the concentration ratio in both countries. Table 3 presents the analysis of the index for Norway and Azerbaijan for last decade and the gap between indicators of these economies is widening with time.

Year	Norway	Azerbaijan
2000	0.11	0.14
2001	0.10	0.14
2002	0.09	0.13
2003	0.09	0.14
2004	0.10	0.24
2005	0.12	0.31
2006	0.13	0.35
2007	0.11	0.34
2008	0.13	0.24
2009	0.08	0.27
2010	0.09	0.29

Table 3: Herfindahl-Hirschman Index for both countries: Norway and Azerbaijan

Source: Author's calculations.

The one can ask that if both countries are specializing on natural resources have such diverging trends, which policies have been implemented by Norway for more diversified economy (to some extend) and whether this success can be achieved by the Republic of Azerbaijan.

In case of Norway the government could manage with the volatility of economy and escaped devastating influence of the concentration of economy on petroleum sector. First and foremost it is necessary to stress that the role of government in forming the economy, thus, many researchers consider central planned economy as one of the reasons of Norwegian success. Even though the country always used to have heavy reliance on raw materials and natural resource, the policies implemented by government are aimed to decrease volatility and strengthen the diversification of the economy.

In order to provide the equal distribution of the wealth through generations it is necessary to transform the non-renewable into the valuable assets, or save for the future generations. According to the legislation of Norway oil wealth to a big extends is transferred into the Energy Fund that ensures savings for the future generations. The government is allowed of spend only 4% of the total sum of savings per year, and as a result Norway already has more than \$150 bln what ensures substantial financial back up of the economy. (Economic Outlook in Norway 2006) The Fund is aimed to achieve more efficient usage of energy and implements various policies in energy security.

It is aimed to increase the production of renewable energy, and in 2002 Fund's resources were used for creation of a new agency Enova which will maintain a variety of projects in renewable energy and energy efficiency. By 2011 out of 156 TWh of final consumption of energy in Norway (exclude transportation) 16,6 TWh were obtained due to the renewable energy projects of Enova. Moreover, the new EEA Agreement was implemented by the EU Renewables Directive (RES) with the aim to increase the share of renewable energy in Norway by 67.5% by 2020. Fund's resources are actively used for development of new technologies in the energy market and on introduction of environmentally safe energy solutions.

According to the special report of OECD Norway is considered on the best countries in terms of efforts on conservation of energy and its saving in all industries. The government actively supports and encourages conservation and substitution of energy and it has achieved the slowing tendency in the usage of electricity, thus if in 1990-2000 the annual increase of usage

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was 1.4%, by 2001-2010 it is already about 0.14 % annual, and this tendency can be explained by the fact that that electricity charges are continually controlled.

The energy policies of Norway are aimed to decrease the consumption of energy and the efforts of the policies achieved positive results in terms of energy consumption; thus, Figure 13 shows that industrial sector as the one with the highest consumption could manage to decrease the use of energy in last decade.



Figure 13: Final energy consumption of Norway in 1990-2010

Source: (Energy Efficiency Policies and Measures in Norway 2010)

Moreover, the government implements various policies on development of different sectors of economy besides the industry and oil. Norwegian government started active development of the country's services industry and as a result in last 20 years the services sector grew by 60 % and now it contributes about 56% of the country's gross domestic product. (Country profile: Norway 2009)

Additionally to the aforementioned factors it is necessary to stress that besides the abovementioned factors is a competitive and highly skilled work force, developed education, high level of investments into the technology, secure and trustworthy institutions, presence of democratic rule (rule of law), low level of corruption.

According to the last chapter of the current thesis it is possible to conclude that the presence of natural resources can push the economy towards volatility; however, there are examples of successful management of resource windfalls. The case of Norway shows that at the very beginning of resource exploitation the economy was influenced by price volatility and adverse influence international trade, nevertheless, various long- term policies can eliminate this negative influence and support the economy. The experience of Norway can be useful for Azerbaijan in order to understand which changes and energy policies are necessary for the country in order to decrease the concentration of economy end energy dependence. The policy recommendations on the case of Azerbaijan can be influenced by the practice of Norway and will be discussed in the next chapter.

CONCLUSIONS AND POLICY RECOMMENDATIONS

During the last two decades Azerbaijan has been actively opening up to international trade and implementing trade policies, in order to increase the volume of exports and, consequently, revenues. For the reason that the country is endowed with natural resources, it is actively developing the mining sectors by exploitation of petroleum and gas pools. The trade ratio is currently above 60 per cent of GDP and it is constantly growing. In the light of these facts, the current study was devoted to the question of the effect of trade on the economy of Azerbaijan. I have determined to what extent opening up to trade had positive effect on the economy, and if any negative consequences of this process are present.

The major conclusion, which can be derived from the aforementioned research, is that international trade had positive effect on the economy of the Republic of Azerbaijan, and positive tendency in major economic indicators are the best proof for this. After conducting the analysis of the GDP, GDP per capita, growth rate and current account balance, I concluded that from 1994 and onward the increasing tendency of these indicators can be explained through increasing exports and revenues from exports.

In 2006 the GDP of Azerbaijan grew almost by 40 %, which was the highest rate of growth worldwide and taking into the account that such a high rate of growth cannot be sustained for a long time, it is logical that in the next couple of years there was observable decrease in the rate of growth in the country. However, the overall picture of the growth path of the GDP and GDP per capita and positive current account balance proves the fact that public policies for openness to trade did affect the economic performance of the country in a positive way.

Nevertheless, the methodology applied in the current research was determined to investigate not only the positive effect of trade, but the presence of negative influence on the economy as well. For the reason that Azerbaijan is a resource rich country it is logical to analyze whether there any features of the "resource curse" in the economy of the country exist. A detailed analysis of share of sectors in the GDP proved that the share of mining sector in the structure of the GDP has already reached number higher than 50 %; moreover, the share of mineral products in the country's exports is about 95%.

The assumption of high concentration of the economy on the one sector has been proved by calculating of Herfindahl–Hirschman Index, which presented the absence of diversification of the economy. The aforementioned concentration index assumes that the economy is developing the only sector and the case of "resource curse" can be applicable for the case of the economy of Azerbaijan. These findings suggest that opening up to trade and increasing the share of resource exports have a negative effect on the economy of Azerbaijan, by making the economy volatile, dependent on external sources, which are determined by commodity prices on the world energy market. The economy of the country can be characterized by high degree of vulnerability and dependence on the world market demand; moreover, the striking fact is that the economy is built on trade of non-renewable assets, which are exhaustible, consequently, the economy benefits in a short-run period, while the question of sustainable economic growth in the long-run remains open.

The author considers that it is possible to follow the path of successful examples of countries which could manage their resource windfall and implement policies leading to sustainable economic growth.

Firstly, the author would like to recommend to diversify the economy, by variation of economic outputs and inputs; making the economic concentration and diversification as a target for the period of determining the policies. For the reason that revenues from resource exports go directly to the State Oil Fund of Azerbaijan, there is a high level of government intervention, state authorities should boost the development of new technologies and

knowledge and provide financial support to productive economic sectors, in order to make the economy sustainable in the long-run and support the real growth. In the long-run the exports should consist not only of the raw material, but also of high-value added goods and services with a high level of diversification, thus, it is necessary to make investments into strategic industries and sectors, which can generate competitive growth in the future.

Secondly, it is necessary to absorb the volatility created by fluctuating resource revenues. When acting as a lender and borrower on the international capital market, the government can smooth the fluctuation of resource revenues; however, it is necessary to create symmetry and make lending and borrowing equal. In this case the volatility is eliminated at a little cost for the government. Taking into the account possible economic crisis and price boom/crashes, it would be advisory to act more as a lender, in order to have some safety cushion (Paul Collier, Anthony Venables, Frederick van der Ploeg, 2009)

Another policy recommendation is the creation of a well developed financial system. Research by Ploeg and Poelhekke (2009) proves that in most cases a poor financial system is one of the main reasons of failure of countries dealing with resource windfalls. For the reason that resource volatility can be absorbed by hedging revenues through forward markets, future contracts, swaps and other financial instruments, more sophisticated, sound and developed financial system leads to a more successful development.

In addition to the aforementioned policy recommendations, it is necessary to add that the government should transform non-renewable resources into reproducible assets, such as human and physical capital. The Enhancement of human capital through higher educational level and increasing professional skills can lead to better productivity and performance, increased competitiveness of labor market. Consequently, this will lead to the increased growth potential while the physical capital capital can be developed by a high level of investments into reliable foreign assets.

The current research can be used as a benchmark for a more detailed and comprehensive analysis in order to make successful policies and decisions, which will have a great influence on the economy of Azerbaijan and lead to a path of sustainable growth in the long-run perspective.

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