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## Oil Boom, Chewing-Gum, and Oil Fund

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-ABSTRACT-

When Kazakhstan was trying to go out from economic, social and political transition, suddenly faced well-known problems of the oil-rich countries. It is absolutely vital that Kazakhstan evaluate its oil-income for going out from transition and developing itself in accordance with the conditions of market economy. After the suggestion of the IMF, Kazakh Government constituted an oil fund in order to prevent its economy from volatility of oil-revenue and price-checks in the oil market.

This paper aims to reveal the impacts of the Kazakh Oil Fund on monetary budgetary and macroeconomic stabilities of the country through time-series regression analysis. In doing so, I test also to what extent an oil fund works in a transition country.

## **A. Introduction**

There is a large set of economic problem that resource-abundant countries confront. However one can determine two main factors which activate the other ones: Price chocks in the world market and “Dutch disease”.

Because of resource dependence resource-rich countries, notably oil-abundant ones are often sensible to price chocks in the market. However, resource prices are subject to fluctuations in the world market. For example, upward shifts in resource prices can bring a windfall to these countries. Inversely, when the price falls dramatically, the countries are subject to economic shock, and so to economic and political instability. This factor requires medium and long-term budget planning in countries where resource revenues are a key element.

When a country experiences a large inflow of foreign funds, as is the case when a nation sells significant resources to foreign markets, one economic result can be a phenomenon known as “Dutch Disease.” Foreign earnings from the sale of natural resources are converted into local currency, which then causes the local currency to appreciate in value relative to foreign currencies. This, in turn, raises the price of domestic goods relative to foreign goods. It makes the country’s exports less competitive on the global market. So “chewing-gum”<sup>1</sup> (imported goods) occupies internal market rather than local industries get more and more developed. Local agricultural products, manufactured goods, and other items suffer a decline leading to a loss of jobs and income, and a greater reliance on the oil, gas, or mining sector for government revenues. In this case government has to choice a solid fiscal mechanism.

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<sup>1</sup> Here « chewing gum » symbolizes in fact a set of harmful effects, observed in oil-rich countries. In the fist time, local currency appreciates due to oil-based-inflows. In the second time, not only from weakness of competitive sectors but also from abundance of foreign currency reserves, foreign trade balance is andomaged. But because of oil-export one can not feel this situation. However, when an oil price decrease in the oil market then the well-known problems emerge.

In many countries, revenues from extractive industries are treated as if they will last forever. Often, they are spent on ongoing budget programs instead of strategic investments that could help prepare for when resource revenues will decline and disappear. In Kazakhstan, the national government created a special National Fund in 2000 that receives a designated portion of national oil revenues. The fund is designed to meet two main objectives: to use oil revenues to ensure stable social and economic development by reducing the economy's vulnerability to oil price fluctuations, and to accumulate financial resources for future generations.

The time when Kazakhstan benefited from oil windfall coincided with its economic, social and political transition period. It is absolutely important that Kazakhstan do not miss this occasion for going out from transition and for developing its institutions in accordance with the conditions of market economy. This paper aims to analyze the Kazakh Oil Fund's impacts on fiscal, budgetary and macroeconomic stability of the country.

## **B. The Functioning of the National Fund of the Republic of Kazakhstan (NFRK)**

The NFRK was founded through a presidential decree in 2000. In its foundation Norway's Oil Fund was modeled. Nevertheless Asian crisis that led to a decline in oil-prices and the devaluation of the ruble have decreased the importance of the oil-fund project. The IMF has played a crucial role in the establishment of the fund. Because the IMF considers oil funds as a helping institutional mechanism for fiscal policy of countries with low transparency and governance ratios. In fact a solid and disciplinary fiscal and budget policies are the best solution. But in some cases like in oil-riche countries, one must refer to "second best" solutions. Thus oil funds do not

have the same effect as solid fiscal and budget policy but they support the later.

The NFRK contains *stabilization* and *saving* funds. Its mission was defined as “stabilization of socioeconomic development of the country” and “saving accumulation for the generations to come” and also “reduction of vulnerability of the country to the external factors”. In this framework the NFRK operate within the Central Bank of Kazakhstan.

### **[Figure 1]**

The main revenues of the fund comes from corporate income taxes, profit taxes, royalties, VAT, bonuses paid by the 11 oil companies and 3 metal producers in Kazakhstan. And also incomes from privatization of national oil-sector-establishments are added into the funds of the NFRK.

Regulation of the NFRK is sufficiently complicated. All revenues collected in the NFRK are shared among the budget, the stabilization fund and the saving fund with regard to a benchmark in accordance with the regulation. The benchmark-price is determined in consideration of the oil, natural gas and mining prices in the world market. In 2001 the benchmark was fixed in 19\$/barel for a 5-year period. Every dollar obtained over the benchmark is collected as stabilization funds in the NFRK. However 90% of every dollar gained up to 19\$/barel is subject to the government’s spending. The saving fund receives 10% of the income under the benchmark. Stabilization and saving funds are kept by the NFRK. When oil price fall under the benchmark, budget deficit can be compensated by the NFRK in 20 days. In 2001 the IMF determined a benchmark. And for example in 2002 245 mil.\$ were accumulated in the NFRK. If the oil price was 15\$/barel, the NFRK would inject 69 mil. \$ to the budget.

## **[Figure 2]**

The complicity of the rules attracted the attention in the Country Report of the IMF (IMF, 2003; p. 15-22). The IMF warned that income collection regulation was complicated. And it advised the government to use the model of Norwegian Oil Fund. In order to support technically, the IMF and the World Bank have developed a model which took into consideration the cost structure of every oil company. The IMF staffs estimated in the same report that “future fiscal inflows from the petroleum sector, on the basis of existing reserves, but excluding privatization earnings, bonuses, and exploration license fees, suggest an undiscounted total of some \$165 billion over the next 45 years; or \$11.000 per capita, based on the present population”. And they added: “While part of this windfall would be spent on social and infrastructure needs (increasing the non-oil budget deficit from current low levels), a significant part of the oil wealth is likely to be accumulated in the form of financial assets, witch will require continued careful management” (IMF, 2003; p. 15).

## **[Figure 3]**

## **[Figure 4]**

## **[Figure 5]**

The NFRK receives technical assistance from the National Oil Fund of Norway.

Diversification and minimization of risks are the determinant factors for investment strategy. The oil fund works with six portfolio managers who invest some a sum of fund in framework of the “Agency for Strategic Planning”. The NFRK has two portfolios: stabilization and saving portfolios. With the former the NFRK invests on Merrill Lynch 6-month US Treasury Bill

Index. And with the later, the NFRK invests on Salomon World Government Bonds Index and MSCI World excluding energy sector. According to the agreement between the Oil Fund and portfolio companies, the portfolio managers have to educate personal of the National Bank of Kazakhstan.

In the official regulation of the NFRK, it is predict that 75 % of assets are assessed in the portfolio of the saving fund and 25% in the portfolio of the saving fund. Both of them are entirely assessed abroad to sterilize pressure of foreign inflows and to preserve local currency from excessive appreciation. 60% des investments are effectuated in the USA and the rest is shared out between Europe and Japan.

If one compares the NFRK with the oil fund of Norway, the former seem very weak because of weakness of the institutional transparency and governance quality. In Kazakhstan, neither the parliament nor the citizens do not have the right of participation to the governance and control of the Fond (Tsalik, 2003). Only the president has the right to approve changes in the regulation. The parliament do only suggest to the government about management of the Fund. When annual report is presented in the parliament, the deputies have no power to approve or refuse it. Again only the president can determine expenditure schedule from the oil fund. However there is no limitation on *ad libitum* expenditure of the government and discretion of the president.

### **[Figure 6]**

Two economist of the WB (Petersen and Budina, 2002) have noted this risk: “when executive chef manages an oil fund over all hierarchy, decisions become political”. En 2002, the IMF has talked about, with a report about fiscal transparence in Kazakhstan (Fiscal Transparency in Kazakhstan, IFM

Country Report, 2003), the need of a budget processes witch will integrate the NFRK into the public budget. It suggests that the public budget must have a consolidated account which incorporates inflows or outflows to/from the Oil Fund. And finally Kazakh government has accomplished this suggestion in 2004. Besides, the fact that income and expenditure of the NFRK do not appear in the budget and that a large share of taxes is allocated to the Fund can lead to a fiscal administration with two directions. This situation damages fiscal discipline.

As to transparency, the National bank of Kazakhstan publishes daily, monthly, quarterly, annually reports about assets, revenues, and spending of the NFRK. Moreover, the Ministry of Finances regularly makes prepare analysis and researches to confirm accumulations of taxes from oil production. All of them are put on internet in Kazakh and in Russian ([www.nationalfund.kz](http://www.nationalfund.kz)). Nevertheless, a large part of periodic documents of the National Bank are not presented in English.

On the other hand, the NFRK is subject to some periodic controls of the independent audit agencies. Since its activation, audit reports are done by Ernst & Young and Fitch Rating. They are published in the local journals but not on the web nor in another language that Kazakh. Besides, certain foundations (Open Society, Caspian Revenue Watch, and Public Finance Monitoring Center) follow fiscal activities of the government and so income and spending of the NFRK. However absence of participation of the parliament and of the Kazakh people to the decision process represent a factor menacing the transparency and so efficiency of the NFRK.

### **C. The Impacts of the NFRK on Monetary, Fiscal and Economic Stability**

When economic stability matters it is possible to take into account numerous factors, variables, indicators. But in this case, I have to specify a more distinctive framework in order to analyze the eventual impacts of oil funds in Kazakhstan because; this institution does not concern all of economic factors. Moreover since institutional structure can vary from one fund to another and from one country to another, their effects can change with priorities defined in economic policy of countries.

First of all, there are two things to specify: first, oil fund is not a “panacea”. In a country where quality of governance and transparency do not exist, oil fund realizes less than that expected. Second, oil fund can not replace fiscal policy (or economic policy) but is a complementary institution that supports it. In this context oil fund can contribute to economic development to the extent that fiscal policy and expenditure strategy are well defined and well carried out.

There can be various reasons for establishing such an institution that make, *ceteris paribus*, economy resistant to well-known harmful impacts in oil-rich countries: real exchange appreciation, Dutch disease, public deficit due to oil-price volatility, price shocks etc. However when we take a closer look to oil funds in oil-rich countries, we can reveal four essential reasons in the origin of establishment of oil funds:

1. Appreciation of real exchange rate
2. Fiscal and budget discipline
3. Saving for future generations
4. And economic stability

An oil fund aims at solving these four objectives in general. Among them the third is the goal of which the fruits can be collected in the longest time. Since six years a portion of oil revenue is kept for generations to come in Kazakhstan. In order to analyze saving function of the NFRK we need a

longer period. Nevertheless, when oil revenue is kept or assessed in the way to sterilize economic system from harmful effect of this revenue, then this can have indirect affects on real exchange rate, general economic stability, and fiscal stability. Kazakh Oil Fund aim to bridle Excessive appreciation of real exchange rate and to contribute to fiscal and economic stability through budget and saving.

### **I. The Impacts of NFRK on Real Exchange Rate (RER)**

The RER followed the form U in the transition countries in the course of time. Before the transition, the RER was overestimated because the rate of nominal exchange was artificially fixed at relatively high level and the prices were being controlled by the state. To the extent that the Transition Countries (TC) moved towards the market economy and the prices were liberalized, one observed a fall in TC's RER, caused by the depreciation of the local currencies. The difference between supply and demand of the foreign assets, which were prone to the official restriction during the Soviet time, caused the value-loss of local currency with the transition (Rosenberg and Saavalainen; 1998).

After the initial period of stabilization, RER started to be appreciated and to approach its level of balance. There are certain factors which lead to this appreciation: the increase, related to foreign capital inflows, pressure on demand and private consumption.

During the initial phase of the transition, the balance of RER remained stable in the absence of the richness and of the productivity. And then it started to appreciate to the extent that the process of the transition advanced. And in the countries rich in oil, the discovery of the natural resources brought RER to a higher level of appreciation (Rosenberg, Saavalainen; 1998).

The question here is to distinguish the eventual sources of the appreciation. Because there are two principal reasons: the transition (the initial appreciation) and oil (flows of capital). In this matter, one benefits from the simple model from Rosenberg and Saavalainen (1998). So that it is more appropriate to this analysis, it is updated.

### **[Figure 7]**

The figure 7 shows the simple arithmetic mean of the RER (measured through the average wages in American dollar). One puts in the analysis 9 countries of the EEC which does not have oil. In 1995 all of the countries in the sample had passed more or less the phase initial of transition. And production sharing agreements (PSA) started to be signed in Azerbaijan and in Kazakhstan. As one sees in graphics, when the RER were appreciated in these countries, this appreciation appears much stronger in Azerbaijan and in Kazakhstan<sup>2</sup>. On the other hand one is not yet assured that this difference between the average of the appreciations of the 9 EEC and that of Azerbaijan and Kazakhstan really comes from the oil extraction. To understand better the eventual causes of the RER appreciation and the impacts of an institution that sterilizes excessive oil income from the national economy I build and estimate a time-series regression model.

### **[Figure 8]**

Since the incomes coming from abroad remove appreciation rate of the local currency *any thing equal by elsewhere*, then one must separate the sources

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<sup>2</sup> The two TC which have very large oil reserv.

of the reserves in currency into two: those resulting from the oil sector and those non-oil sector.

The sterilization of the oil-incomes by the intermediary of an oil fund could help to control the excessive appreciation in two ways: by holding foreign inflows outside the economy and by reducing the quantity of the foreign currencies which circulates inside. This last depends rather on the monetary policy of the Central Bank. But in the case of Kazakhstan, a diminution (up to certain point determined by the monetary authority) in currency reserves which are in the economy allows for RER depreciation.

Currency outflows influence also RER appreciation negatively. Especially benefic transfers of the foreign oil companies represent the biggest share of the currency outflows. Thus I used this variable because of its effect on RER.

To accentuate the impact of the Russian crisis in 1998, which in particular influenced the Ex-USSR countries, I added a *dummy* variable. And for the price chock provoked by Iraq war I used another dummy.

The regression concerns the period between the beginning of the oil boom (1996) and the year of 2006 and is estimated with monthly data of the Central Bank of Kazakhstan. I took 2001 as the starting date of the sterilization of oil income through a special institution.

According to result outgoing from the Estimation I, inflows due to oil between 1996 and 2006 influenced the rate of appreciation between minimum by 34% (Column IV) and maximum by 46% (Column II) in Kazakhstan respectively<sup>3</sup>. For the same period, appreciation resulting from oil-inflows kept its impact on the RER between  $t$  and  $t_3$ . Currency outflow has a negative impact as expected. Nevertheless, this loses its effect on RER

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<sup>3</sup> I took exponential of the logarithmic values.

appreciation in the course of the time whereas this shows its effect at the beginning.

I talked about the two impacts of oil-fund institutions: Direct and indirect impacts. Firstly, oil fund serves to keep excessive oil income out of the economy. This is the direct effect. And while doing so, it shrinks non-oil currency reserves. In the middle term, this causes depreciation of the local money. And in the long term this encourages the economy (private and public sectors) to find alternative economic means to increase currency reserves. The first means which come to mind are the development of competitive and exporting sectors.

RERA : Real Exchange Rate Appreciation  
 OCI : Oil-Currency Inflow  
 NOCI : Non-Oil Currency Inflow  
 COF : Currency Outflow  
 SOI : Sterilized Oil Income through the Oil Fund  
 TRS : Transition Index of the EBRD  
 RC : *Dummy Variable* (Russian Crisis in 1998)  
 IRAQ : Oil-Price Chock after Iraq War

$$\ln PERA_t = \alpha_t + \beta_1 \ln OCI_t + \beta_2 \ln NOCI_t + \beta_3 COF_t + \beta_4 \ln SOI_t + \beta_5 \ln TRS_t + RC + IRAQ + \varepsilon \quad (1)$$

### **[Estimation 1]**

In the case of Kazakhstan, sterilization of oil-income by the NFRK caused depreciation by 15%. And this impact slowly increases in the middle term. As to the indirect effect, that is to say “shrinking of non-oil reserves”, it remains sufficiently modest at -1-2%. So the impact of the NFRK on the

appreciation of RER is about 16-18%. One can conclude that the Kazakh Oil Fund has started to manifest its effect on RER appreciation.

What we can say about transition effect is that the biggest share of the RER appreciation results from oil-inflows but not from transition effect. It is true that Kazakhstan has not yet achieved its transition. But in term of appreciation of the local currency, we can not talk about today a great effect. Contrary, Kazakh economy is more sensible to price chocks in the oil market than to transition. The estimation justifies it. Kazakh economy gets more and more oil-country-likeness.

On the other hand the constants significantly remain large whereas this is non-significant. There are still several factors which allow the RER appreciation to be. It is probable that the largest part of the unexplained circumstances results from factors related to the transition. However the absence of certain data bases does not enable us to widen the regression while adding other variables. The lack of data *ad hoc* prevents from reducing this greatness.

## **II. The Impacts of the NFRK on the Fiscal Stability**

The special characteristic of the oil income make necessary that the attention is given to certain indicators contributing to the suitable interpretation of the impacts of this excessive inflows on the economy. This is the condition *sine qua non* of efficient budgetary and fiscal policies for an oil-producing country. The adaptation of such policies to the special characteristic of oil income puts at the foreground the importance of *non-oil fiscal balance*, as an indicator, in the oil-producing countries. For example, in Norway, the non-oil balance is considered as determining instrument at the time of all the debates on the budget and fiscal policy (Barnett and Ossowski, 2003).

If the government decides to spend oil income, seemingly the expenditure can increase without deterioration in the general balance of the budget (Barnett, Ossowski, 2003). *However the higher the governmental expenditure is the larger the demand pressure on the economy and on the imports is. This effect derives from the non oil fiscal deficit. On the other hand, as an indicator, the general balance of the budget does not precisely reflect this effect.*

The general balance feeds at the same time on oil and non-oil incomes. When the oil prices fall, the non-oil deficit is shown more precisely. Since there is always such a risk related to price volatility, then always a pressure due to the excessive expenditure of the government exists. Moreover this pressure has the capacity to influence several indicators from public debts to inflation rate through demand. Moreover, deterioration in the general balance of the budget, because of the low oil income, can hide the significant efforts of the fiscal adjustment (Davis et al, 2003).

In addition, if the expenditure increased during the rise of the oil price, it could be difficult and expensive to finance the non-oil deficit in the absence of a mechanism of fiscal compensation (Davis et al, 2001). For example, the internal financing of a public deficit can cause inflation or contraction of investments so shrinking of the private sector. And as a result the financing would be more expensive.

For all these mentioned reasons, non-oil fiscal balance is more appropriate to the analysis than the general balance. I will build a new time-series regression model in the light of what I stated above.

Contrary to certain oil funds, the NFRK operates also stabilization function. Compared to a reference price, the government determines the limit of transfers to the budget from the oil fund. 90% of each dollar gained under 19 \$/barrel go directly to the budget. The oil income allocated to the budget is

that which is obtained between the production cost and the price of reference. The increase in the oil income in the budget depends on the output of the oil companies because the price of reference is fixed.

**[Figure 9]**

**[Figure 10]**

In the Figure 9 we see only the oil income destined to the budget but not that destined to the NFRK. From 2001 the total incomes of the budget exceeded the expenditure for the first time. Thus a budget surplus matters. This comes not only from the oil income but also from the increase in the non-oil incomes. *It is clear that the government tried to develop its non-oil sources (in particular that which comes from the non-oil sector) because its income is fixed by the means of a benchmark.*

As for the non-oil balance we observe deterioration in the budgetary balance. Even if after the establishment of the NFRK slightly limited, this imbalance deepens. However the dispersion of the oil incomes between the governmental budget and the NFRK decreased the non-oil deficit at more reasonable level (of 13% in 2000 to 8% on average).

In addition, the assets of the NFRK were not used apart from its objectives with the discretion of the Kazakh government. For example Kazakhstan decided to take part in the project of Baku-Tiflis-Ceyhan (BTC) why It does not want to be dependent on the pipelines of Russia. But its governmental financing is made through the budgets of the oil companies of the State (*Gazmunaigaz, Karachaganak*).

NFRKS	: NFRK's share in the budget (in % of GDP)
SFS	: Stabilization Fund's share (in % of GDP)
SNOR	: Share of non-oil revenue (in % of GDP)

$$\ln SNOR_t = \alpha + \beta_1 \ln NFRKS_t + \beta_2 \ln SFS_t + \varepsilon \quad (2)$$

### [Estimation 2]

Before looking at non-oil deficit, now, let us build a model to analyze whether or not foundation of an oil fund served to non-oil public revenue of Kazakhstan. By separating the functions from the stabilization of the NFRK, one calculates the effect of the NFRK on the change of the non-oil incomes. The Fund has a direct and indirect effect. When the oil incomes accumulate into the Fund, this forces the government to resort to the other sources. It is the indirect effect. On the other side, the fact that the oil share to the budget each year is fixed through the price of reference encourages the government to diversify its non-oil sources and to slow down the expenditure for the budget financing. It is the direct effect of the Fund.

The indirect effect of the NFRK on the change of the non-oil incomes is about 1.2%, and its direct effect by the stabilization funds is found between 8% and 9% since its foundation. Finally, according to the regression which I made with the quarterly data, the total impact is approximately 10%.

Rebuild the regression model to clarify the impact of the NFRK on the non-oil-balance of Kazakhstan:

NOD : Non-oil Deficit (in% of GDP)
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$$\ln NOD_t = \alpha + \beta_1 \ln NFRKS_t + \beta_2 \ln SFS_t + \beta_3 \ln SNOR_t + \varepsilon \quad (3)$$

### [Estimation 3]

Taking the exponential of the coefficients, since its foundation the NFRK has served to reduced non-oil deficit by 8%. And transfers from the stabilization fund to the budget have contributed to this reduction by 2%. Finally, constitution of an oil fund pushed the government to try to find alternatives solution to increase non-oil revenue. The rising in the non-oil revenue decreased the non-oil deficit by about 10%. Nevertheless, the eventual impacts of the existence of an oil-fund remained weak. The coefficient of the constant term is very high and positive. There is still “something” that harms budget discipline. But econometrically we are not in a position to say what this “something” is.

### **III. The impacts of the NFRK on the Macro-economic Stability**

In which way does the NFRK influence Kazakh economy since its foundations? To answer this question, one needs to build a multidimensional model because macroeconomic stability relates to several factors, instruments, and indicators of the economy.

The figure 11 shows how the dangerous effects coming from the unbalanced oil incomes emergent and extend. Capital flows influence the economic structure in several manners. On a side, foreign inflows remove the demand of the local currency and thus its appreciation which results in the rise of relative prices. On the other side, the fluctuations in the oil incomes make the budget vulnerable to the oil price. The government that increased its expenditure at the time of the rise of the oil price can face the budget deficit during the fall of the oil price. At the same time uncontrolled expenditure and budget deficits cause the inflationary pressure.

**[Figure 11]**

However inflation is found in the middle of all the factors. Each of them has direct or indirect effects on inflation rate. In this case, the eventual impacts of oil income on other economic indicators, are seen best by the intermediary inflation rate.

All the elements of the table constitute a vicious circle. If the oil fund functions well, it could contribute to reduction of the excessive appreciation and of the budget deficit related to the volatility of the oil price. It is thus possible to test whether or not the direct or indirect effects of the oil fund reflect through inflation rate. Let us build the model with the concerned variables.

INF	: Consumer Prices Index
NFRK	: the NFRK's assets (in % of GDP)
NOD	: Non-oil Deficit (in % of GDP)
PEX	: Public Expenditure (in % of GDP)
NOFTD	: Non-oil Foreign Trade Deficit (in % of GDP)
NOGDP	: Non-oil GDP
INT	: Interest Rate
RERA	: RER Appreciation
M2	: Monetary Supply (M <sub>2</sub> /GDP)
CUR	: Currency Reserves (in % of GDP)

$$\ln INF_t = \alpha + \beta_1 NFRK_t + \beta_2 NOD_t + \beta_3 PEX_t + \beta_4 NOFTD_t + \beta_5 NOGFDP_t + \beta_6 INT_t + \beta_7 RERA_t + \beta_8 M2_t + \beta_9 CUR_t + e_t \quad (4)$$

**[Estimation 4]**

According to the result of the Estimation 4, the NFRK has a weak direct effect on the economic stability (-9%). However as to the indirect effects, for example, the effect of the public expenditure, caused by several factors like

the oil incomes, takes negative value in Kazakhstan. The reduction in governmental expenditure allowed a fall in the inflation rate.

The largest pressures on the macroeconomic balance result from the appreciation and the non-oil deficit. The first one which is partially under the effect of the Oil Fund takes negative values for reasons about which I talked previously.

However the NFRK's success comes from the application of reference price. Even if they are the defects about the transparency and of the quality of regulation, the existence of a stabilization fund within the NFRK which accumulates a portion of oil income compared to a benchmark constitutes a relatively strong supports for stability macroeconomic.

#### **D. Conclusion**

Kazakhstan has established the NFRK in order to evaluate incomes coming from oil extraction and exports and to preserve its economy from well-known harmful effects. However, an oil fund is not a "magic wand" but is just an institution which supports decision mechanism of disciplined governments. It would be not true for now to expect that a transition country, like Kazakhstan, has a strong institutional structure and transparent governance which are the condition sine qua non of the efficient functioning of an oil fund.

Moreover, the time which has passed since its constitution is not too sufficient to have a solid judgment about the NFRK's efficiency but even so one can say that, sterilizing oil income, the Fund has started to show its first positive impacts on Kazakh economy. In consideration of direct and indirect effects of the NFRK on the three components of the economic stability, its

biggest effect occurred in deducing of the excessive part of the RER appreciation. The Fund manifested its positive effect in exiting the Government to orientation of increase public revenue from non-oil economy. Nevertheless non-oil budget deficit is still very high. Just keeping oil-income is not sufficient to establish budget discipline. The NFRK's on stability impacts are still weak but positive.

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Figure 1: Benchmark Structure of the NFRK

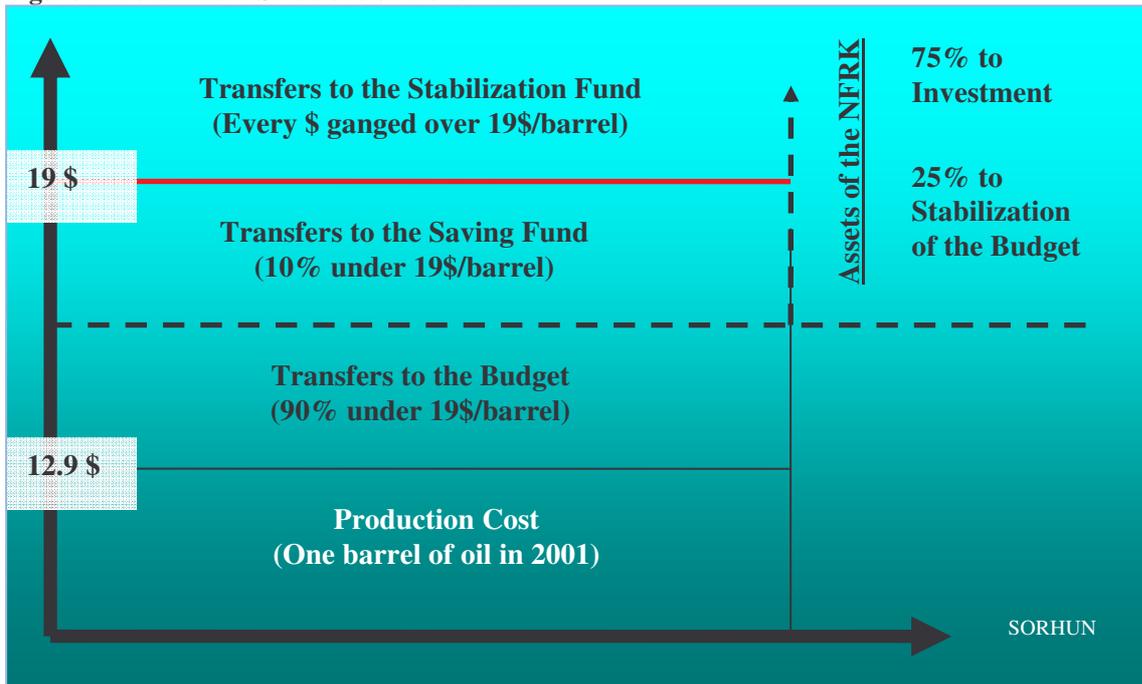
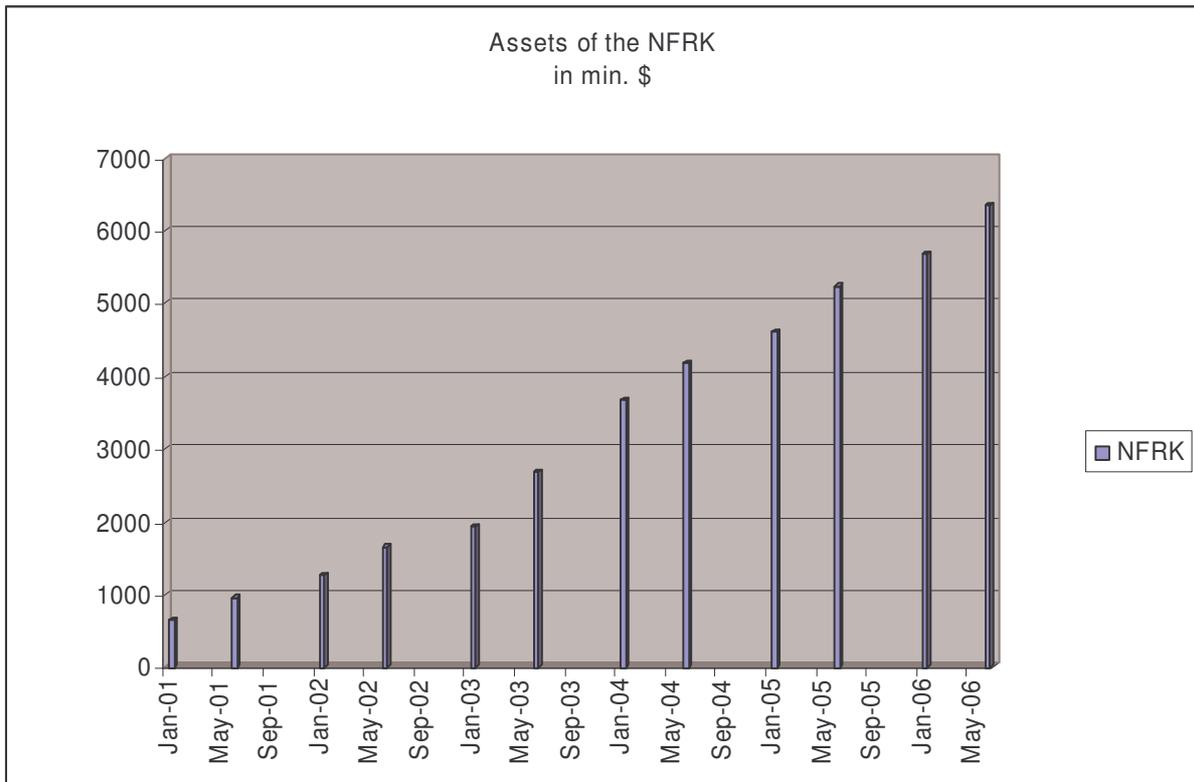


Figure 2: Assets of the NFRK



Source: Central Bank of Kazakhstan (2006)

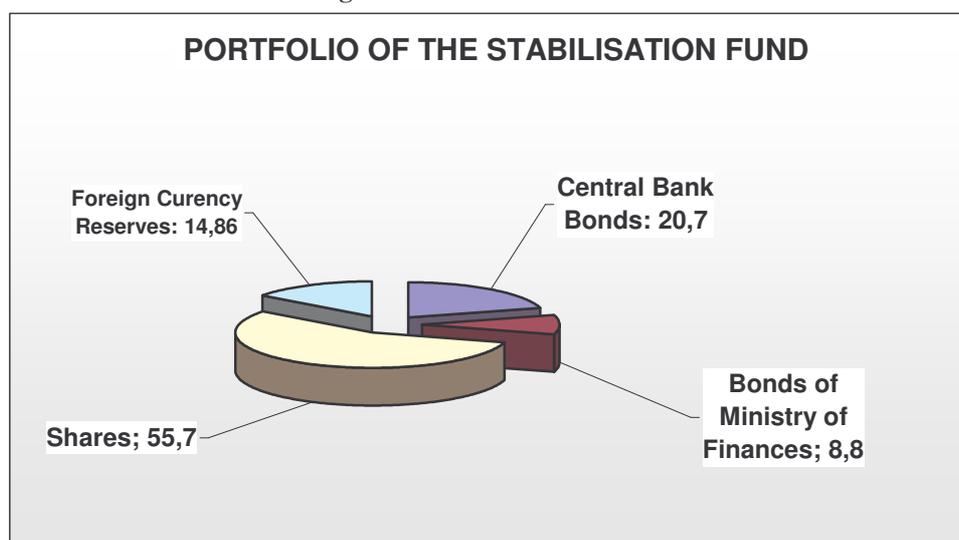
Figure 3: Public Share of Oil Income of Kazakhstan

**FISCAL REVENUE OF KAZAKHSTAN FROM OIL PRODUCTION**

Years	Oil Exports (mil. \$)	Oil-Income transfer into the Budget (mil. \$)	Oil Income in % of the Government's revenue
2004	6.949	1.952	25.4
2005	7.045	1.849	22.4
2006	7.831	1.971	21.3
2007	8.801	1.985	19.0
2010	10.322	2.150	-
2015	15.081	2.830	-
2020	17.780	4.600	-
2030	19.050	7.750	-
2040	5.060	2.400	-

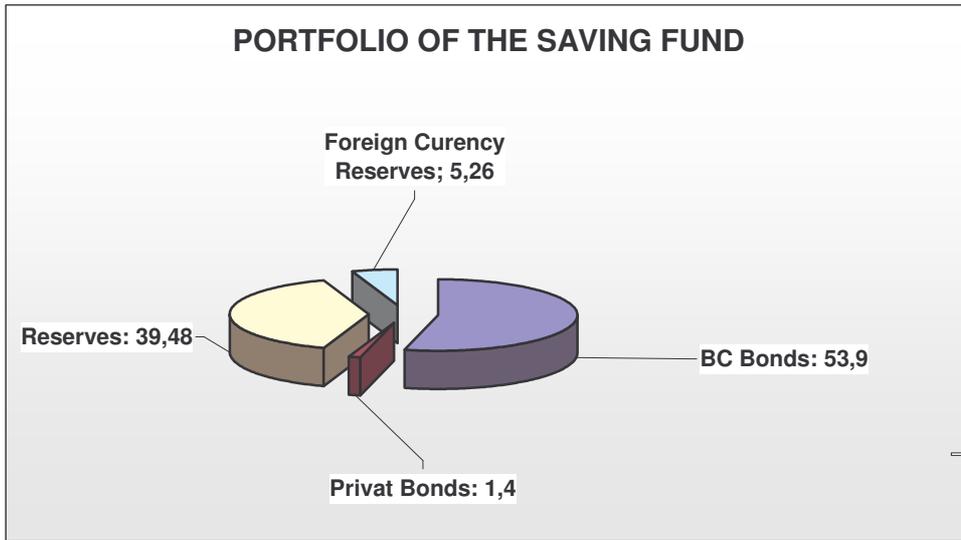
Source: IMF (2003)

Figure 4: Stabilisation Fund



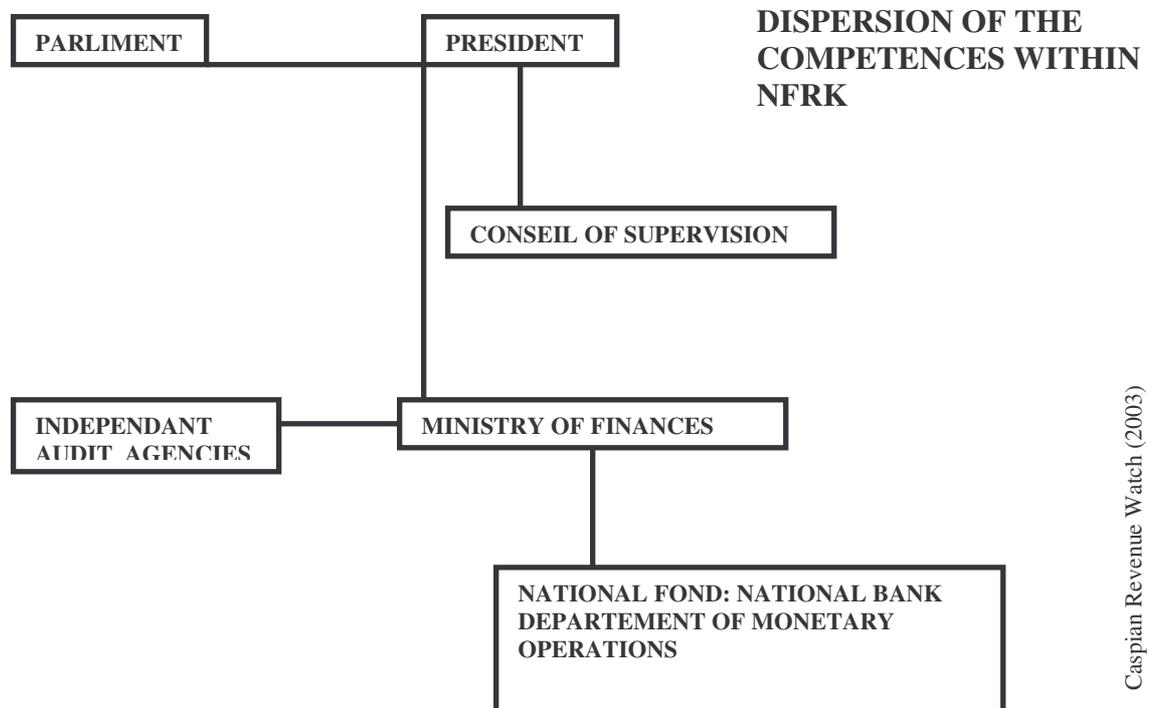
Source: Caspian Revenue Watch (2003)

Figure 5: Saving Fund



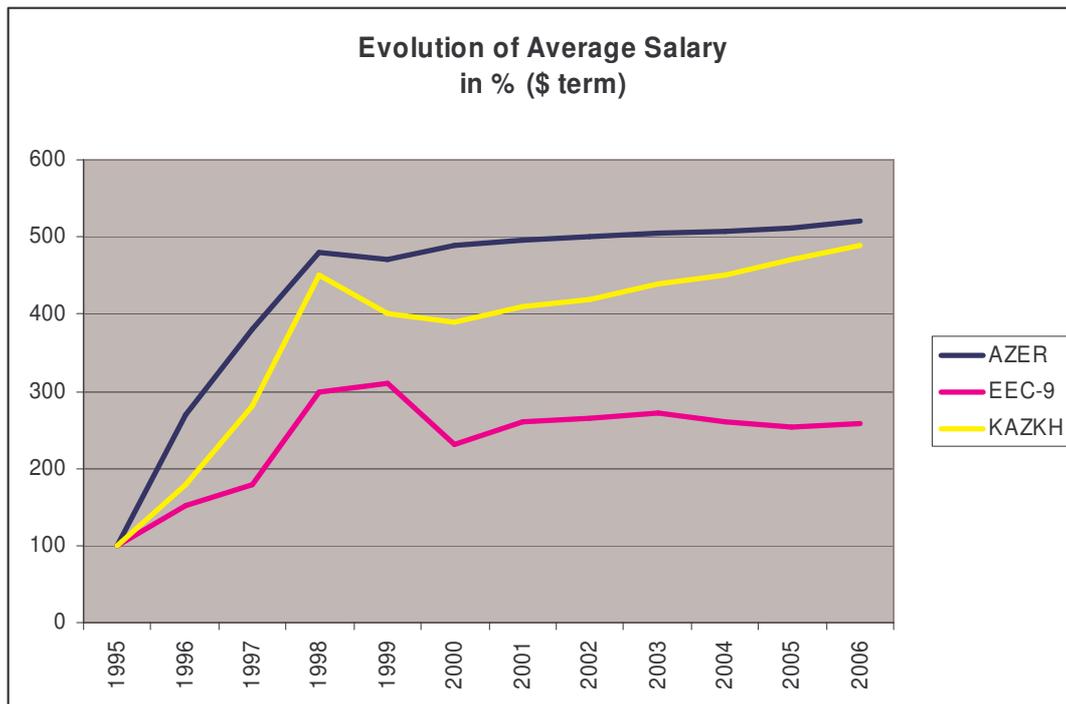
Source: *Caspian Revenue Watch* (2003)

Figure 6: Governance of the NFRK



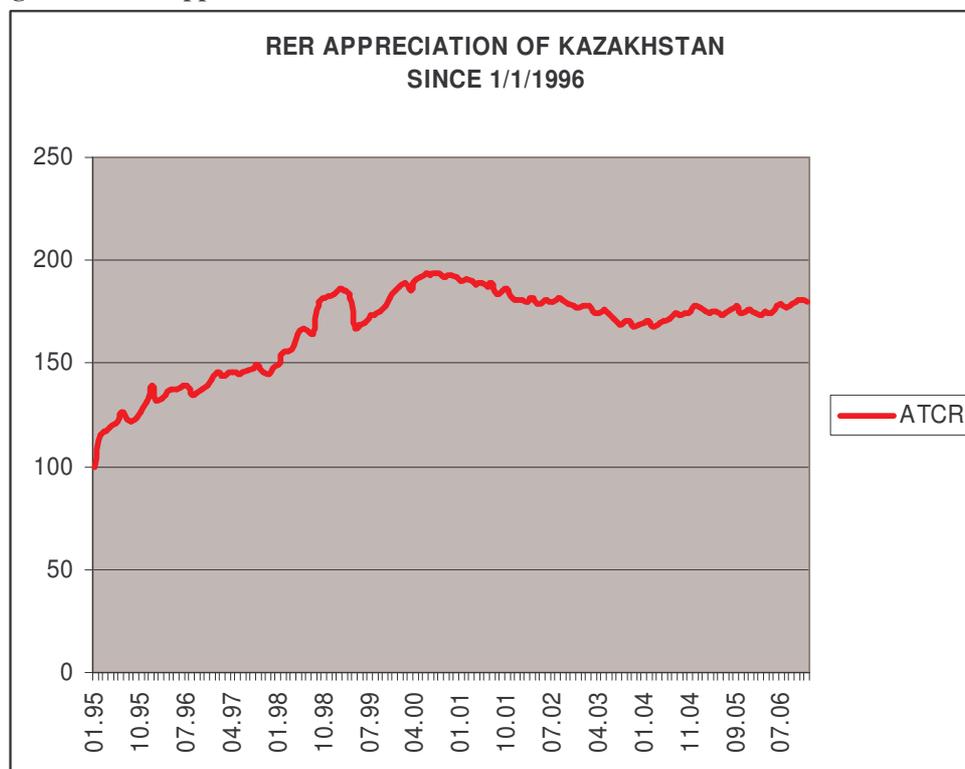
Caspian Revenue Watch (2003)

**Figure 7: RER expressed in Salary Term**



Source : Rosenberg et Saavalainen (1998), Country Reports (IMF, 2006).

**Figure 8: RER Appreciation of Kazakhstan**



Source: Central Bank of Kazakhstan (2006)

**Estimation 1**

Explained Variable: PERA

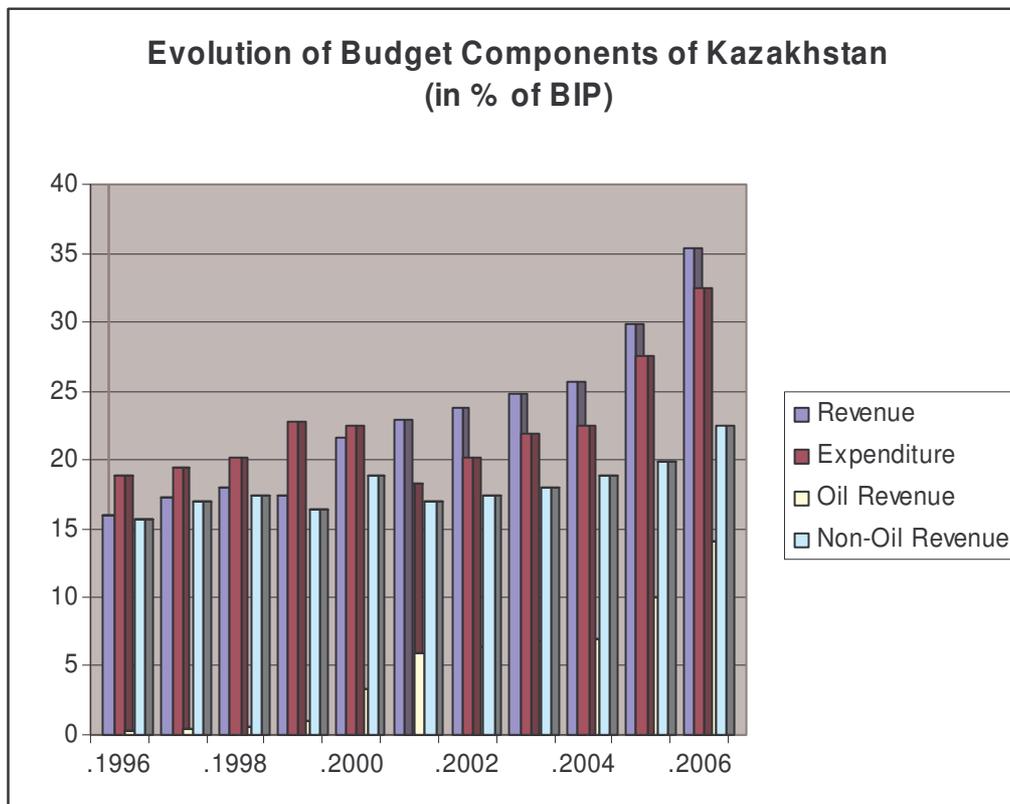
Method: OLS

Date: 1/1996-12/2006

	I	II	III	IV
	t	t-1	t-2	t-3
Constant	2.123055	1.890012	1.791697	1.234691
lnOCI	0.331411	0.384123	0.311113	0.297894
lnNOCI	-0.023144	-0.013598	-0.011897	-0.008123
lnCOF	-0.100139	-0.083161	-0.042634	-0.012649
lnSOI	-0.141613	-0.161793	-0.170012	-0.142369
RC	0.056941	0.044001	0.001236	0.000635
IRAQ	0.041389	0.065136	0.053333	0.018947
TRANS	0.010102	0.010023	0.010169	0.009792
R <sup>2</sup>	0.908710	0.879632	0.854691	0.801694

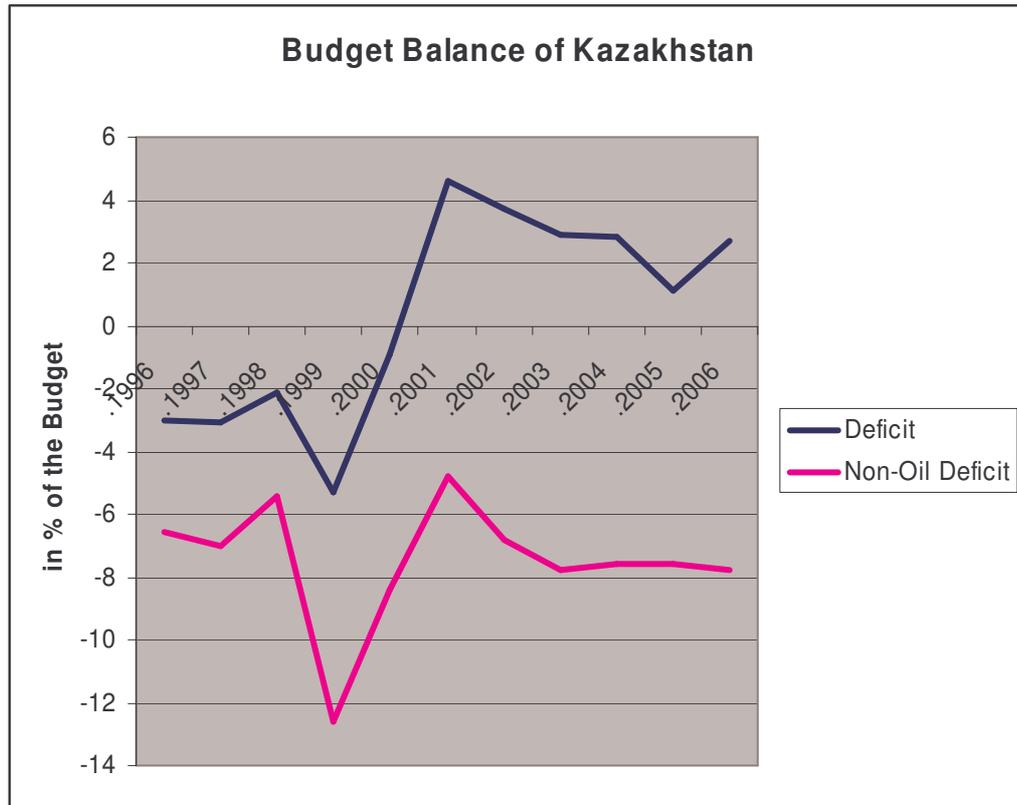
All values significant at 10%.

**Figure 9: Budget Components of Kazakhstan**



Source: Open Society, Kazakhstan (2004) and the NFRK (2006).

Figure 10: Budget Balance



Source: The Ministry of Finances of Kazakhstan (2006).

**Estimation 2**

Explicated variable: SNOR

Method: OLS

Date: 1<sup>st</sup> quarter 2000 – 2<sup>nd</sup> quarter 2006

	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
	<b>t</b>	<b>t-1</b>	<b>t-2</b>	<b>t-3</b>
Constant	-1.287911	-2.136479	-1.986418	-1.566879
NFRKS	0.081121	0.091613	0.064879	0.059791
SFS	0.012310	0.022290	0.015581	0.010101
R <sup>2</sup>	0.878870	0.787949	0.705659	0.655547
All values	significant at 10 %			

**Estimation 3**


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Explicated variable: NOD  
Method: OLS  
Date: 1<sup>st</sup> quarter 2000 – 2<sup>nd</sup> quarter 2006

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	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
	<b>t</b>	<b>t-1</b>	<b>t-2</b>	<b>t-3</b>
Constant	1.245698	1.299987	0.568103	0.894567
NFRKS	-0.084514	-0.120031	-0.101210	-0.091278
SFS	-0.022231	-0.019005	-0.014124	-0.011890
SNOR	-0.111351	-0.091023	-0.081356	-0.076891
R <sup>2</sup>	0.702589	0.710055	0.650101	0.610213

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Significant at 10 %

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**Estimation 4**


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Explicated variable: INF  
Method: OLS  
Date: 1/2000 – 12/2006

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	<b>I</b>	<b>II</b>	<b>III</b>	<b>IV</b>
	<b>t</b>	<b>t-1</b>	<b>t-2</b>	<b>t-3</b>
Constant	1,1083455 *	2.136478	3.326548	5.998412
NFRK	-0.08916211 *	-0.091102**	-0.106548*	-0.09456
NOD	0.1112912 *	0.091222**	0.045502*	0.004681
PEX	-0.022007 *	-0.031378*	-0.001558*	-0.015697
NOFTD	0.0387761 **	0.035444*	0.045567**	0.0405987***
NOGDP	0.0107871 **	0.009887*	0.007558***	0.000602***
INT	0.036566 **	0.036001*	0.030001*	0.022987
RERA	0.2178934 *	0.181647**	0.100654**	0.098761
M2	0.073334 *	0.068912**	0.044468**	0.055554
CUR	-0.0071678 ***	-0.003158***	-0.002012***	-0.012560
R <sup>2</sup>	0.94661			

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\* Significant at 5 % ; \*\* 10 % ; \*\*\* at 20 %

The values in Column IV are not confidentially significant.

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Figure 11 : Impacts of oil-revenue

