Do Remittances Cause Dutch Disease in Resource Poor Countries of Central Asia?

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Abstract

Dutch disease or resource curse is an adverse effect of high dependence on exports of natural resources, such as oil and gas, or other inflows, such as remittances or foreign aid. Dutch disease is known to lead to appreciation of the real exchange rate, decline in tradable sectors (mostly industry and agriculture) and surge in non-tradable sectors (services). This means unfavourable development of an economy where retail trade or construction would grow, but production sectors would be atrophied. Such economies become vulnerable and may suffer if inflow of currency from natural resources or remittances dries out.

This study tests whether large inflow of foreign currency coming to Kyrgyzstan and Tajikistan from labour migrants has caused Dutch disease as described by Corden (1984) and Corden and Neary (1982): appreciation of the real exchange rate, decline in tradable sectors and surge in non-tradable sectors. Furthermore, the paper takes one step further and looks at this phenomenon from the point of view of importing Dutch disease from resource-rich countries to resource-poor countries. Results show that symptoms of Dutch disease are present in Kyrgyzstan and Tajikistan. There is an evidence of deindustrialisation, higher growth rates and larger share of service sector in GDP. In addition, high oil prices showed strong appreciation effect on local currencies of Kyrgyzstan and Tajikistan indicating the transfer of Dutch disease from resource-rich Russia.

Keywords

Dutch disease, labour remittances, migration, natural resources, exchange rate

Introduction

Kyrgyzstan and Tajikistan share several common characteristics: they are small, low income economies; they are highly dependent on remittances from labour migrants who work in resource-rich Russia; these economies are not based on extraction of their own natural resources (at least, at present time); and they are landlocked. More detailed comparison of the countries is given below:

1) Small, low income economies

According to the World Bank, in 2013, Kyrgyzstan's GDP amounted to USD 7,226 mln., GDP per capita was USD 1,263. In Tajikistan, GDP amounted to USD 8,508 mln., while GDP per capita was USD 1,050. These two countries are in the bottom of the list regarding wage ranking of ex-USSR countries (see Figure 1).

2) High labour migration and dependence on remittances

Tajikistan is the most labour-remittance dependent country in the world (see Figure 2). The ratio of international remittances to GDP was 44% in 2013. Out of eight million inhabitants, around one million Tajiks go for work abroad each year, more than 90% to Russia, the rest mainly to Kazakhstan and UAE.
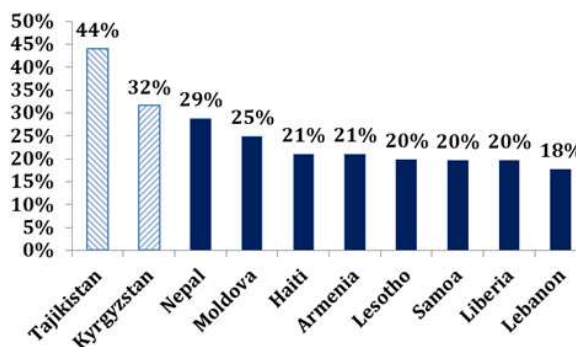
In Kyrgyzstan, ratio of remittances to GDP is more than 30%, it ranks second in the world regarding dependence on remittances. Around 600 thousand people out of 5.5 million Kyrgyzstan population are migrants. More than 80% work in Russia and 10% in Kazakhstan.

Figure 1. Average Salaries in the CIS and Baltic States in 2013, USD   **Figure 2. Ratio of Remittances to GDP, 2013**
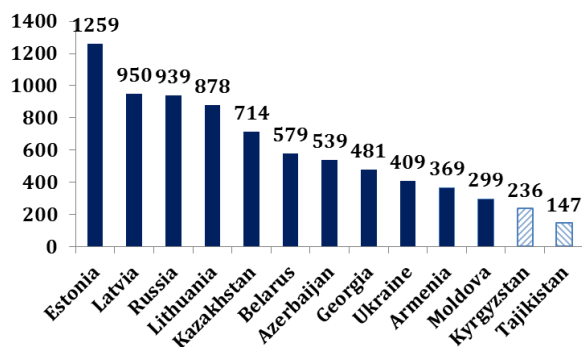
Source: Business Forecast, 2014   Source: World Bank Development Indicators

3) Resource-poor countries

Recent study of the World Bank (Gill et al., 2014) classifies Kyrgyzstan and Tajikistan as resource-poor countries where natural resources (oil, gas, coal, metals) do not have decisive contribution to GDP. Supply of natural resources, oil at the first place, comes mainly from Russia.

Nevertheless, it is worth mentioning that Kyrgyzstan and Tajikistan are estimated to have considerable deposits of natural resources (oil, gas, coal, gold, etc.), but those resources are either not used efficiently, not proven, or difficult to extract at present.

4) Landlocked countries

Kyrgyzstan and Tajikistan are landlocked countries and do not have direct access to coastlines. That means transportation costs are drastically high in these countries and economic development is believed to be affected negatively.

Dutch disease: Resource Curse and Role of Remittances

Corden (1984) and Corden and Neary (1982) considered a phenomenon of Dutch disease that initially referred to adverse effect of natural gas exploration in 1960's on Dutch manufacturing sector. Now classical, model of Dutch disease assumes that there are three sectors of an economy. The first sector is booming and usually involves extracting natural resources. The second sector, usually tradable, is lagging and may include manufacturing and agricultural sectors, products of which are traded across borders. The third sector is a non-tradable sector, which includes services. Initially, the Dutch disease phenomenon was thought to be caused by extractive resources only when high exports of natural resources and inflow of foreign currency subsequently led to the appreciation of real exchange rate. Later, it was realised that other sources of foreign currency inflow can cause Dutch disease.

Dutch disease occurs through two mechanisms: "resource movement effect" increases demand for labour resources and output in a booming sector at the expense of a lagging sector. If a booming sector (for instance extraction of oil and gas) faces larger demand for its products, it will try to meet this demand by increasing production. This can be done by raising salaries and attracting more employees who would come from other sectors. As a result, more labour resources will be employed in extraction of oil and gas and less in lagging sector, thus it is called "resource movement effect". "Spending effect" acts through greater labour demand and output in non-tradable sector at the expense of fewer employees and output in lagging sector. In this case, booming sector will bring greater income to people and this additional income would be partially spent on products of non-tradable sector. In turn, non-tradable sector will increase its output and will employ more workers at the expense of lagging sector. The final result of both effects is greater employment and output in booming and non-tradable sectors and less production and employment in lagging sector. While domestic prices continue rising in non-tradable sector and world market sets prices for tradable sector, real exchange rate appreciation takes place (Corden and Neary, 1982). Thus, Dutch disease in an economy is evident from real exchange rate appreciation, decline of tradable sectors, faster growth of non-tradable sectors and wage growth.

There are several studies that prove the existence of Dutch disease caused by natural resources in the post-Soviet countries. For example, Oomes and Kalcheva (2007) studied whether the Russian economy was subject to Dutch disease and concluded that Russia had all symptoms of this phenomenon. Algozhina (2006) considered a case of Kazakhstan and analysed the impact of Dutch disease on inflation. Additionally, Egert and Leonard (2007) tested hypothesis of Dutch disease in Kazakhstan, while Egert

(2009) did the same for a set of former Soviet Union countries. Hasanov (2013) made a recent contribution to the discussion of Dutch disease in CIS countries looking at Azerbaijan.

There are relatively few studies that connect remittances to Dutch disease. Acost et al. (2009) used an example of El Salvador with remittances around 19% of GDP in 2008 and found evidences of Dutch disease applying econometric model. Edsel (2010) used 20 countries and broke them into different income groups and concluded that the Dutch disease caused by remittances affected rather middle income countries and not so much low and high income countries. Kemegue et al. (2011) found evidences of Dutch disease studying remittances in 34 Sub-Saharan Africa countries. Akylai (2012) found that remittances led to real exchange rate appreciation in six CIS countries, although no further connections to Dutch disease were made in this study.

Kemegue et al. (2011) argued that an increase in remittances would, first of all, lead to the growth of foreign currency supply in the recipient' economy, which would result in the appreciation of nominal and real exchange rates. Second, higher remittances would increase the disposable income of population and result in greater demand for non-tradables, which again will result in the appreciation of real exchange rate. Izquierdo and Montei (2006), on the other hand noted that if income from remittances was spent on tradables in economies with little domestic production, higher demand for imports would push prices up that would result in the depreciation of real exchange rate.

## Evidence of Dutch disease in Kyrgyzstan and Tajikistan

In order to test whether Kyrgyzstan and Tajikistan experience Dutch disease, several diagnostic indicators are used. First, the paper looks at the shares and growth rates across tradable and non-tradable sectors in respective countries, as well as at growth of wage level. Second, econometric panel data model of two economies under consideration was built. In this case, panel data model refers to analysing data for two economies in the span of several years. This model allows studying linkages between the real exchange rate from one side and remittances and natural resources (oil) from the other side.
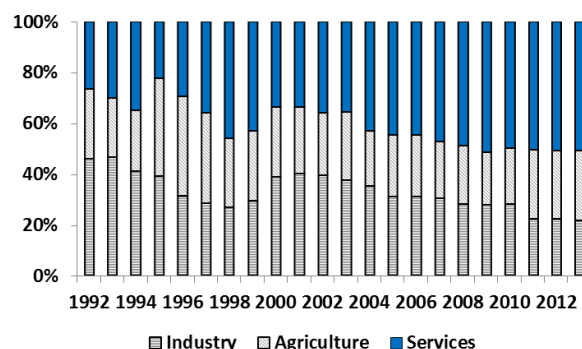
Shares of sectors

As shown on Figure 3, the share of service sector in both countries increased in recent decades at the expense of other sectors. Between 1992 and 2013, the share of service sector in the economy of Kyrgyzstan increased from 23% to 55%. In Tajikistan, the service sector accounted for 26% in 1992 and 50% in 2013.

Figure 3. Share of sectors in GDP, 1992-2013
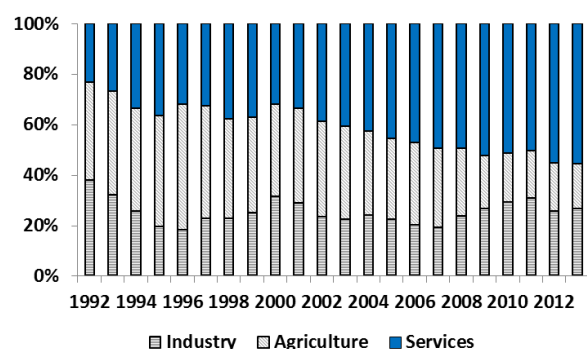
a) Kyrgyzstan   b) Tajikistan

Source: World Bank Development Indicators

Growth rates of sectors

Growth rates of service sectors of Kyrgyzstan and Tajikistan had been relatively strong. Thus, during 1992-2013, the average growth rate of service sector in Kyrgyzstan was 3.6%; in Tajikistan this figure was 3.1% (World Bank Development Indicators). To compare, in the same period, average industrial growth rate in both countries was negative: -1.0% in Kyrgyzstan and -1.5% in Tajikistan. Average growth rate of agriculture in Kyrgyzstan between 1992 and 2013 was 1.5% and in Tajikistan amounted to 3.1%.

Wages

Both countries experienced increase of wages during recent years. In Kyrgyzstan, wages grew from an equivalent of USD 130 in 2010 to almost USD 240 in 2013. In Tajikistan, the average wage was USD 90 in 2010 and about USD 150 in 2013.

The above data on growth rates of sectors and wages shows that the non-tradable sector in Kyrgyzstan and Tajikistan was enjoying higher growth rates than tradable sectors and that the GDP share of the former grew considerably.

Real exchange rate

Above mentioned diagnostic indicators – share of sectors in GDP, their growth rates, and wages - support the evidence of Dutch disease in Kyrgyzstan and Tajikistan. Still, appreciation of real exchange rate is widely considered as the main indicator of Dutch disease. Thus, in order to have more solid grounds for judging whether there is Dutch disease in Kyrgyzstan and Tajikistan, the real exchange rate appreciation was checked with econometric model. Econometric model allows seeing the quantitative relation between changes of real exchange rate and a set of explaining indicators. In order to test whether Tajikistan and Kyrgyzstan were subject to Dutch Disease as a result of real exchange rate appreciation, two hypothesises were tested: whether the appreciation of real exchange rates in Kyrgyzstan and Tajikistan occurred 1) due to remittance inflow into those countries and 2) due to occurrence of Dutch disease in Russia that resulted from increased oil revenues and consequent transfer of Dutch disease to Kyrgyzstan and Tajikistan.

Dependent variable is a logarithm of the real exchange rate. Independent variables are also in log and include:

- Remittances. Positive sign would mean that higher remittances lead to the appreciation of real exchange rate that would support the evidence of Dutch disease.

- Price for natural resources (oil). Positive sign would support hypothesis of Dutch disease coming from resource-rich countries.

- Macroeconomic indicators incorporate the influence of fundamentals:

  - Share of fiscal sector spending to GDP as proxy for fiscal policy

  - International reserves as proxy for exchange rate policy

  - Broad money as proxy for monetary policy.

The model estimates cointegration equation using annual data for 2002-2013; the method is Dynamic Least Squares (DOLS). Data on real exchange rate comes from Bruegel database (Darvas, 2012). Data on remittances were retrieved from central banks of respective countries. Oil prices were taken from World Economic Outlook of the IMF. World's Bank World Development Indicators was a source for macroeconomic variables.

Table 1. Results of the model

Variable	Coefficient
Remittances	-0.115***
Price for oil	0.300***
Government expenditures to GDP	-0.075*
International reserves	-0.031*
Broad money (M2)	-0.119*

Note: Significance level is denoted as 10% (*) significance level, 5% (**) significance level, 1% (***) significance level

Econometric analysis shows that in Kyrgyzstan and Tajikistan the inflow of remittances has depreciating effect on real exchange rate rather appreciating as usually observed in other countries. One percent increase in remittances leads to estimated 0.115 percent depreciation of real exchange rates in Kyrgyzstan and Tajikistan. The finding is not surprising given that both countries are heavy importers of goods and run significant foreign trade deficits. The inflow of remittances increases disposable income of households spent on imported goods. In its turn, high demand for imports causes prices to increase and leads to the depreciation of real exchange rate. Such depreciating effect of remittances was also discussed by Barajas et al (2010), Izquierdo and Montiel (2006), Kemegue et al (2011).

As for the effect of natural resources, the model shows that increase of oil prices by one percent leads to 0.3 percent appreciation of real exchange rate in Tajikistan and Kyrgyzstan. This relationship is actually inherent to resource-rich countries that experience Dutch disease. Oomes and Kalcheva (2007) estimated that in Russia one percent increase of oil prices leads to around 0.5 percent appreciation of real exchange rate. The direct translation of the changes in oil prices in Russia to the economies of Kyrgyzstan and Tajiksitan can be explained by very close ties of the economies of the two Central Asian countries with the economy of Russia. These ties go well beyond labour remittances and encompass trade flows, investment flows, sentiments concerning exchange rate development and economic situation in general.

Even though the economies of Kyrgyzstan and Tajikistan do not dramatically depend on domestic extraction of natural resources, they import Dutch disease from oil and gas rich Russia as a result of close economic ties.

Conclusions

Results of data analysis and econometric model estimations show that symptoms of Dutch disease are partially present in Kyrgyzstan and Tajikistan. There is an evidence of deindustrialisation, higher growth rates and larger share of service sector in GDP. In addition, high oil prices showed strong appreciation effect on local currencies of Kyrgyzstan and Tajikistan indicating the transfer of Dutch disease from resource-rich Russia. However, remittances do not cause appreciation of real exchange rates in Kyrgyzstan and Tajikistan, but in fact lead to depreciation. This effect is similar to other countries, where large share of remittances is spent on imported goods.

Being an open economy and maintaining close ties with its partners is widely considered by economists to have a positive effect on all sides, but one should not overlook threats either. Kyrgyzstan and Tajikistan have very close connections with Russia and labour remittances from Russia to these Central Asia countries help to improve well-being of many families and combat poverty. But at the same time, this paper indicates at symptoms of Dutch disease in Kyrgyzstan and Tajikistan that is also due to the ties with Russia. The negative consequences of it are atrophy of traded production sectors and overreliance on nontraded services. Dependence of Kyrgyz and Tajik economies on one single foreign labour market and thus being subject to high vulnerability to external shocks cannot be disregarded, but further analysis in this area is out of scope of this paper. Overall, higher diversification of domestic economies in Kyrgyzstan and Tajikistan is indeed advisable.

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