THE FEATURE OF DUTCH DISEASE IN THE MONGOLIAN ECONOMY

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Abstracts

In this paper Mongolia is one of the developing countries where a significant part of its economy is provided by using natural resources - especially from the mining sector. The Mongolian present situation is a period of fluctuation between advanced economic development and a way of decline, and it can be a reflection of the so-called "natural resource curse". In general, the current natural resource dilemma causing the economic downturn is likely to be driven by external market forces such as mineral commodity prices volatility, and internal economic stresses which would result in a slowing growth, in particular, it appears to be caused by some effects of the Dutch disease

Keywords: Economic development, Mining, Dutch disease, economic growth.

МОНГОЛ ДАХЬ ГОЛЛАНД ӨВЧНИЙ АСУУДАЛД

Хураангуй

Энэхүү өгүүлэлд Монгол Улс эдийн засгийнхаа багагүй хувийг байгалийн баялгийг, тэр дундаа уул уурхайн салбарыг ашиглан хангадаг хөгжиж буй орнуудын нэг юм. Монголын өнөөгийн нөхцөл байдал нь эдийн засгийн дэвшилтэт хөгжил, уналтын зам хоёрын хооронд хэлбэлэсэн үе бөгөөд энэ нь "байгалийн баялгийн хараал" гэгчийн тусгал байж болох юм.

Монголын эдийн засагт гарсан өөрчлөлт, ялангуяа сүүлийн 10 жилийн (2012-2022) уул уурхайн салбарын хөгжлийг онцолж, Голланд өвчний илрэл хэрхэн нотлогдож байгааг судалж тогтоосон болно. Ерөнхийдөө эдийн засгийн уналтыг үүсгэж буй байгалийн баялгийн өнөөгийн хүндрэл нь ашигт малтмалын түүхий эдийн үнийн хэлбэлзэл, эдийн засгийн дотоод стресс зэрэг гадаад зах зээлийн хүчин зүйлсээс шалтгаалж, өсөлт удаашрч, ялангуяа Голландын өвчний зарим нөлөөнөөс үүдэлтэй байгаа нь илэрч байна.

Түлхүүр үгс: Эдийн засгийн хөгжил, уул уурхай, Голланд өвчин, эдийн засгийн өсөлт

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Introduction

Mongolia has abundant mineral resources: over eighty types of such as, copper, gold, coal, iron-ore, zinc, silver, molybdenum; and some of gold-copper and coal deposits are world-class. The government signed the contract with Rio Tinto LLC to operate the Oyu Tolgoi mining project which is placed third in the world regarding its gold and copper mineralization grade. The Oyu Tolgoi project has far-reaching consequence for the Mongolian economy and society and it can provide one-third of the GDP when it uses its full capacity. Besides this, the government indicated that there are fourteen strategically important mineral deposits (especially "Tavan Tolgoi") which is one of the largest coking coal resources in the world. On the horizon, it is possible that more mineral and raw material resources will be discovered.

The main purpose of the paper is to identify any evidence of "Dutch disease" in the Mongolian economy through the simple estimation of the macroeconomic indicators and sector's performance. In order to pursue this broad aim, the following objectives have been established:

(i) To identity the economic structure, and estimate the overall weight of the mining industry on macroeconomics and the whole industry sector scale.

(ii) To investigate which sectors are impacted by the extent of the effect of resources movement? To make sure how much does the mining sector effect on agriculture and manufacturing industries that hire the most workforce.

(iii) To observe how the factors, belonging to the mining industry (workforce, capital-financing and foreign direct investment) are being transformed

(iv) To examine whether exports in the rest of mining sectors decreased or not

(v) To outline the policy scenarios which prevent Dutch disease and their implementation over the time.

The main body of the paper consists of the following sub-sections: a detailed overview and analysis of the current "macroeconomic fundamentals" facing Mongolia in section 2.1; a description of the major natural resource dilemma and the notions of the "Natural Resource Curse" and "Dutch disease", and their conceptual difference is mentioned specifically in sections 2.2 and 2.3; a critical analysis to identify any evidence of Dutch disease has been conducted in the certain sectors, labor market, and some indicators of external sectors in section 2.4. As well as this, the paper suggests the possible policy scenarios which may avoid Dutch disease, in section 3, and summarizes the main outcomes from the research.

Mongolian economics and dutch disease
An overview of "macroeconomic fundamentals"

Mongolia has experienced a vibrant democratic transformation, with abundant

agricultural and mineral resources, an increasingly educated population and trebling of the level of GDP per capita over the past 25 years (TheWorldBank 2022). However, the slowdown in coal ad metal exports to China caused a continues decline in the Mongolian economic growth until 2022 (*Figure 2.1-1*). Even though growth started to increase slightly in 2020, the growth rate is likely to remain below the average figured (11.3 %) between 2020 and 2023(p) (CoFace 2023). Moreover, the fiscal consolidation and tight monetary (policy interest rate has been increased in August 2020 to 15%) by the government is likely to be a to obstacle private demand.

Figure 2.1-1 Major macro-economic indicators of Mongolia

MAJOR MACRO ECONOMIC INDICATORS

	2020	2021	2022 (e)	2023 (p)
GDP growth (%)	-4.6	1.6	2.0	5.5
Inflation (yearly average, %)	3.7	7.1	14.6	10.5
Budget balance (% GDP)	-9.3	-3.1	-4.5	-2.7
Current account balance (% GDP)	-5.1	-12.8	-20.5	-14.9
Public debt (% GDP)	83.4	67.7	74.2	75.7

(e): Estimate (f): Forecast

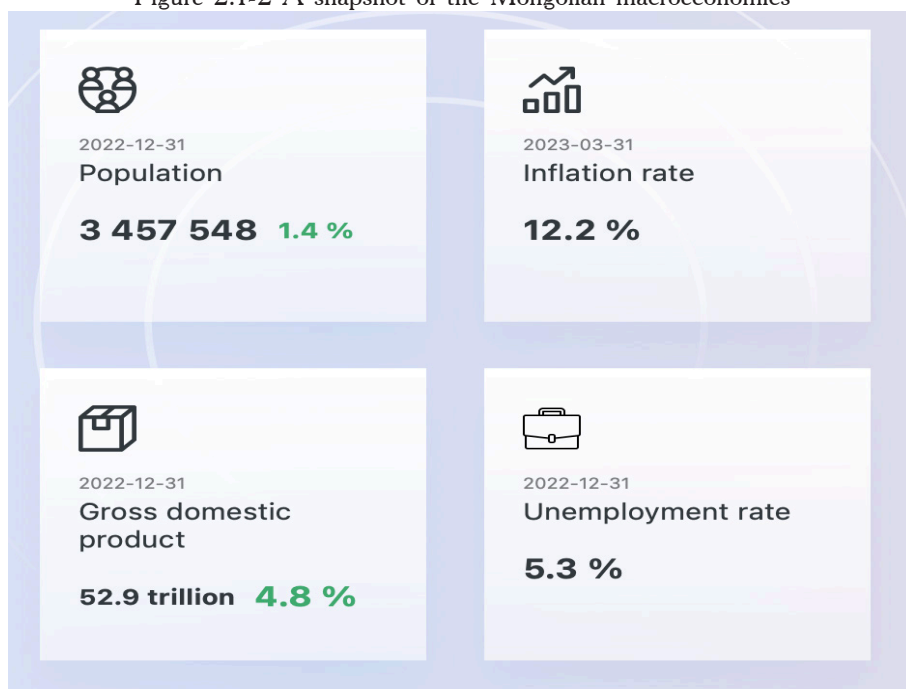| STRENGTHS	WEAKNESSES
• Development of colossal mining resources (coal, copper, gold) with investment reaching 40% of GDP • Strategic geographical position between China and Europe/Russia (Silk Road Development Project) • Potential for diversification of production, including agribusiness (livestock, dairy products, meat, cashmere) and tourism • Important donor support (4.8% of GDP in 2019)	• Small economy vulnerable to changes in commodity prices and Chinese demand • Landlocked country • Internal political dissensions • Massive land degradation, 90% of the vast grasslands prone to desertification (frequent occurrence of dust storms) • Alarming level of corruption and fragile governance (justice, public expenditure, SOEs, mining licenses and procurement) • Risks associated with rising inequalities (28% of the population living in poverty in 2018) due to less inclusive mining development • Insufficient foreign exchange reserves to absorb external shocks

Source: http://www.coface.com/Economic-Studies-and-Country-Risks/Mongolia

The figure presents the current macroeconomic indicators of Mongolia by the end of 2023.

Figure 2.1-2 A snapshot of the Mongolian macroeconomics

2022-12-31
Population
3 457 548 **1.4 %**

2023-03-31
Inflation rate
12.2 %

2022-12-31
Gross domestic product
52.9 trillion **4.8 %**

2022-12-31
Unemployment rate
5.3 %

Source: http://www. nso.mn/index.php

The major natural resource dilemma in mongolia

The Mongolian government is struggling to cope with the nation's current economic difficulties and high debt (TheUBPost 2022). One of the major drivers resulting in this economic severity can be a loose fiscal policy by the former government expecting the future income from the mining sector. The current government, therefore, has requested IMF support and could benefit from a loan of USD 1.5bn during 2022 so as to meet short-term repayment deadlines (CoFace 2022).

However, there is very little room for maneuver on the budget, as the country is vulnerable to the volatility of budgetary resources from mining structural reforms are needed and parliament is struggling to pass unpopular measures. As a result, the public debt will remain very high. Meanwhile, external debt has risen sharply and accounted for almost 210% of GDP in June 2022. External debt is mostly held by the private sector, with over half related to intercompany lending associated with FDIs.

Furthermore, after narrowing in 2018 because of lower imports, the current

account deficit is expected to widen again in 2019. Imports of capital goods are likely to rise due to work starting on phase 2 of the Oyu Tolgoi mine. Meanwhile, despite improved relations between Rio Tinto, the main Oyu Tolgoi shareholder, and the government, FDIs will remain below potential. This is because the outlook for the mining sector is still uncertain and investors are worried about the country's financial stability. Accordingly, the tugrik will again be under downward pressure having depreciated by more than 20% since June 2018. Against this backdrop, the level of foreign exchange reserves could continue to fall, having fallen by over 53% between January 2020 and August 2022 and still representing less than 3 months of imports (CoFace 2022).

The economy has become increasingly reliant on the mining sector—its share of GDP today stands at 20 percent, and the lack of diversification amplifies the impact of changes in commodity prices (TheWorldBank 2022).

As can be seen, the Mongolian current economic dilemma might be quite similar to the Dutch disease on accounts of the dependence of its mining sector. Thus, relevant data and analysis in terms of macroeconomic indicators, foreign trade — exchange rate and labor market are going to be presented based on the Dutch disease theory in the next sub-sections.

Natural resources economic theory which applies to the dilemma

There are many research papers regarding the natural resources curse have been published - namely, Gregory Thesis (1976), Dutch disease (Economist 1977), "The Natural Resource Curse Survey" (Frankel 2010) and "Resource Abundance-A Curse of A Blessing?" (Victor Polterovich 2010). In brief, a short-lived boom such as the exploitation of mineral resources, may do longer-term and possibly irreversible harm to the economy (Karasinski 2017). The recent cases of the "Dutch disease" show a two speed economy: The Booming Resource Sector (BRS), the Rest of Economy (ROE), and also have two definite stages - Stage 1: During the Boom, Stage 2: Post Boom Dutch Economy.

The "Dutch disease" is the most intensive channel for guiding the "Natural Resource Curse" and these two expressions are different regarding their contents. The "Dutch disease" is an economic phenomenon whereby manufacturing and agriculture sectors lose their competitiveness in the global market because the national currency appreciation leads to increases in the real wages due to the immense amount of exports from natural resources exploitation. In other words, an economy based on the mining industry which has an undiversified structure becomes dependent on the prices of mineral commodities in the world market. This can accelerate the economic vulnerability, fluctuate the real prices and jeopardize the manufacturing competitiveness; and the resulting adverse ramifications change the

economic structure. *Figure 2.3-1* shows a simple model that increasing gross exports enhances the foreign currency reserve and causes the real exchange rates to rise.

Figure 2.3-1 Exports and imports excluded mining sector and with mining sector
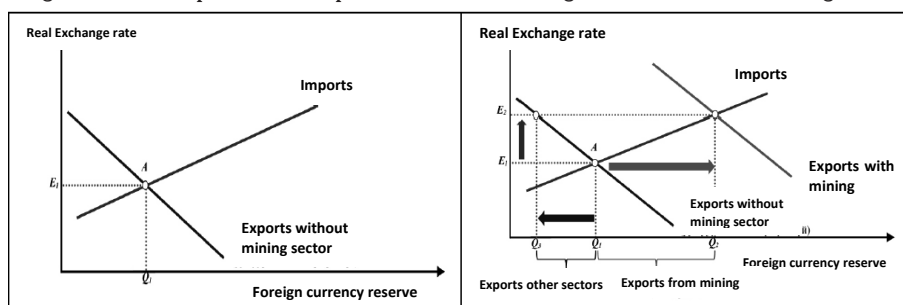
Economic analysis regarding any evidence of the dutch disease

Economic growth and mining industry

Regarding the GDP contribution by sectors, other total activities and services (including construction, education, public administration and defense, real estate etc.) — approximately (25%) and mining (20%) account for the most amounts - and manufacturing levels are stable at ~7%. However, decreasing amounts are shared by agriculture from 18% to 12% (*Figure 2.4-1*). This is because the development of manufacturing is relatively new compared to the agriculture in Mongolia. The economic growth peaked at 17.3% in 2022 because of the 1.5-unit percentage contribution from the mining industry. Currently, the mining industry growth is not as fast as the previous times, and there is no significant impact on the economic growth.

- The amount of output by the mining extraction sector makes up over three quarters of the gross industrial output. The real growth rate of the mining industry was 5.5%, on average, between 2006 and 2011, and then it increased to gradually to 10%.
- Although agriculture and service sector account for a significant amount of the economy, the share of agriculture declined after the financial crises in 2009 and levelled 12%.
- Over 70% of gross exports income is encompassed by the income from the sales of mining commodities (*Figure 2.4-2*). In other words, the domestic economy heavily relies on the global commodity market especially, the Chinese economic conditions and policy, and the effect of foreign trade shock has increased.

Figure 2.4-1 Gross Domestic Product of Mongolia

1.1.1   **Foreign trade and Exchange rate**

Total exports (significant amounts from mining commodities) increased rapidly from 2013 to 2015 during the boom, and then started to fluctuate, owing to the commodity prices and production volumes. The exports from non-mining, nevertheless, decreased regarding its production volumes - even if the prices were relatively consistent. As can be seen, it is possible to say that the exports from non-mining declined because of the effect of cost (*Figure 2.4-2*).

Figure 2.4-2 Total exports income (thousand USD)
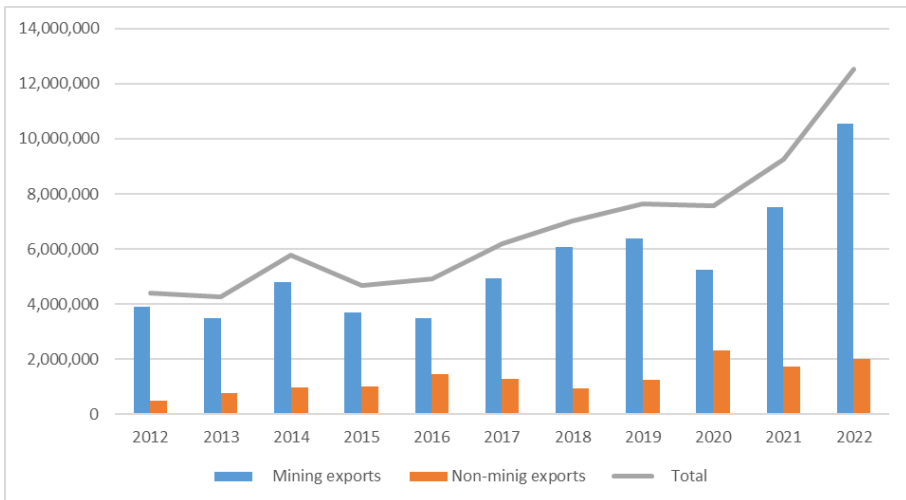
It is an interesting point that the trend of total imports is roughly the same as the mining exports, and a substantial amount of mining equipment and fuels were imported during the boom (*Figure 2.4-3*).

Figure 2.4-3 Total imports (thousand USD)
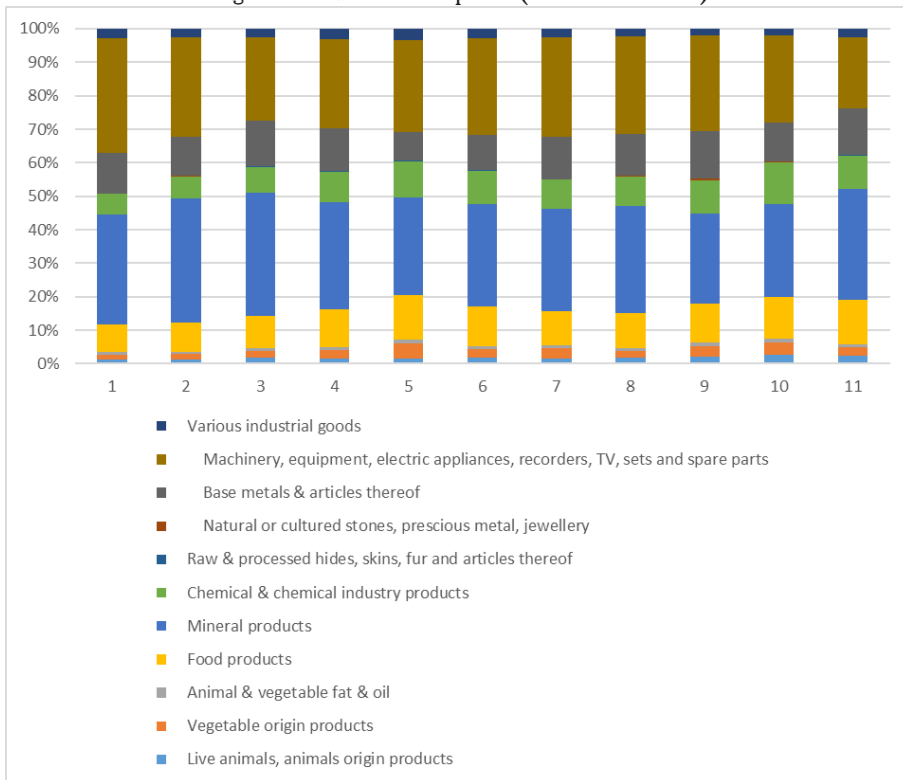
One of the Dutch theories as cited by Karasinski (2017) implies that "*Exports of non-resource tradeable decline, imports rise*". Accordingly, a simple regression model has been created based on the data. Regressing a cross section over the last decades measuring total non-mining exports on the horizontal axis against mining exports and total imports on the vertical axis. Statistically, however, there is no negative correlation which is expected between non-mining exports and imports, and this can contradict the theory.

Figure 2.4-4 Mining VS Non-mining exports against Imports, USD Millions
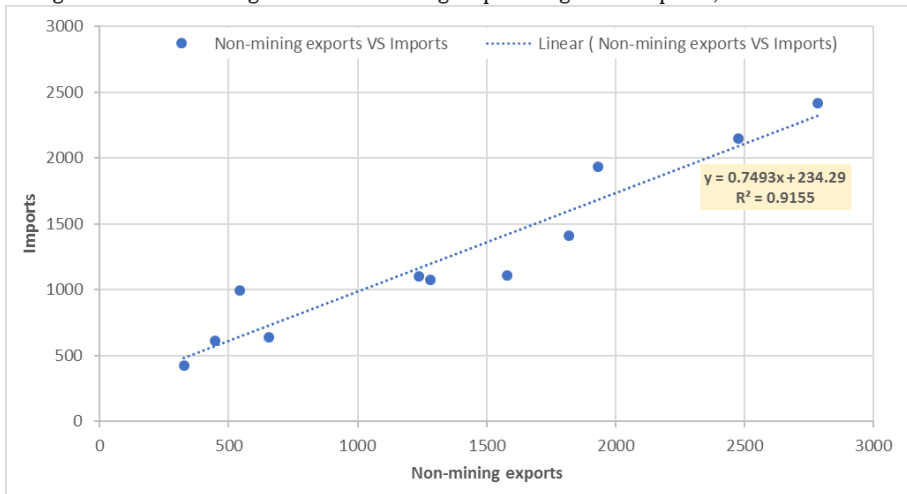
In terms of the exchange rate, the Dutch theory emphasizes especially, in the Australian case, "a surge in foreign exchange sold lead to a rise in the exchange rate" during the boom Post the boom, current accounts turn to deficit. The RBA may try to prevent decline in exchange rates, but even with decline, other tradeable industries will take time to recover from price distortions (Karasinski 2011). In the Mongolian case, this hypothesis has been validated based on the real phenomena of the exchange rate fluctuations, and the Bank of Mongolia is struggling to curb national currency depreciation.

The impacts of mining sector on labor market

In a country's economy that is based on the mining industry, foreign direct investment (FDI) increases owing to the higher than expected productivity from the mining industry; and it results in the national currency to appreciate. Once the FDI has increased, the amount of capital allocates to an employee goes up, and then increasing labor efficiency leads to wages increase.

It is also results in a growing demand for small-medium sized manufactories and services belong to the mining industry, and the demand and salaries of those sectors increase. Currency appreciation, however, impairs the competitiveness of the other sectors and can diminish their performance, and this can lead to the wage rates of the rest of the sectors being less than mining. It causes the non-mining exporting sectors' workforce to prefer to transfer into the high wages providing sectors. This phenomenon is one of the symptoms of Dutch disease in labor markets.

With respect to the labor market in Mongolia, the following findings have been identified.

- In the last decade, the number of employees in the mining industry has increased, on average, by 7% and the manufacturing sector, by 78%; while there has been 15% reduction in the number of people who work for agriculture sector.
- The average wage rate of employees in the mining industry is ranked the highest compared to the other sectors of the economy, and the wage rate growth is twice as fast as the country average. The nominal salary in this sector has generally increased considerably from 2012 to 2022.
- As for the percentage of employees accounting for total labor force by sector in the last decade, the mining industry has increased from 4% to 5% and then decreased back to 4%. There has been a gradual increase in the manufacturing sector from 5% to 7%, whereas the agriculture sector has declined rapidly from 40% to 30% (Figure 2.4-5).

44.1% of foreign direct investment (FDI) had been pumped into the mining industry between 1990 and 2004 (Avralt-Od 2012). By 2015, the figure has changed to approximately 62%, and then stared to decline gradually (*Figure 2.4-6*).

In order to analyses the labor transmission, the main sectors where significant number of people work and are likely to shift from one to another, are taken into account (*Figure 2.4-6*). The transmission from agriculture moves into construction which requires unskilled workers and manufacturing (new small-medium sized mill shops by former farmers) other than mining which requires more professional staff.

Figure 2.4-5 The number of employees accounting for
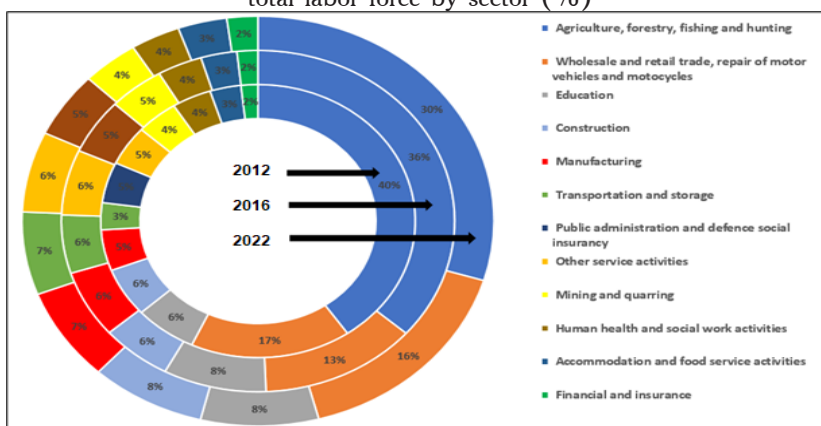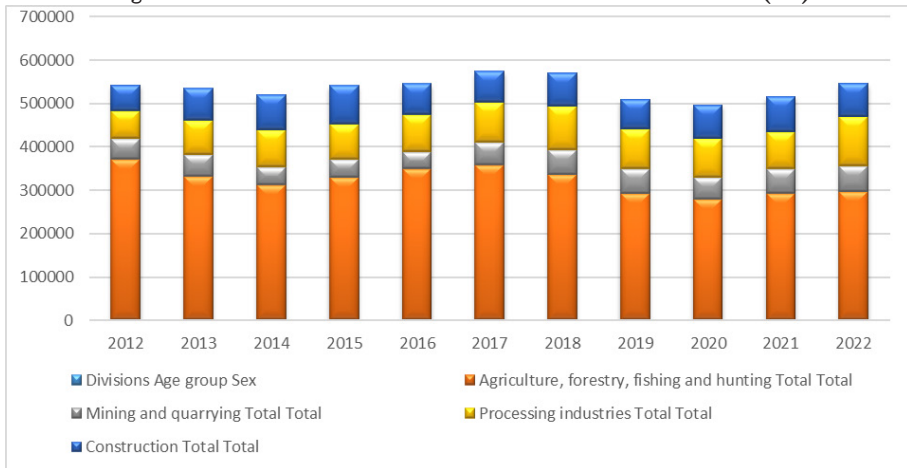total labor force by sector (%)

Figure 2.4-6 The labor transmission between main sectors (%)

Source: National Statistic Office of Mongolia www.1212.mn

Policy recommendation

The paper recommends the following policy directions that should be implemented over the next 24 months. Hence:

i). To create a sovereign wealth fund financed via the profit from the mining industry in offshore so as to diversify the wealth. Doing so, on one hand, it is possible to scatter the benefit from the exponentially growing sector into the rest of a community equally. On the other hand, investing in foreign through the fund also gives an opportunity for a country to diversify its wealth internationally and reduces risks. When the price of mining commodities declines and the tax incomes decrease, the prior investment will be returned to cover a state budget deficit.

ii). To implement the combination of two policies are commonly taken in the countries' economies based on natural resources, which are a tight budget during an economic expansion and a soft monetary policy. The tight budget policy ensures the economic stability through concerning the price stability. The soft monetary policy gives an opportunity to ensure the external stabilities because it reduces the policy interest rate, and this can help to avoid distortion of real exchange rates and inflows of capital.

iii). The Central Bank conducts a policy which is the combination of intervention and sterilized intervention in order to regulate the impact of capital flows on exchange rates when the national currency starts to appreciate or aims to stabilize the nominal exchange rate. Although this can stabilize the nominal

exchange rates in the short-run, it is not a suitable scenario as it increases interest rates and capital inflows, and then accelerates the real exchange rate appreciation.

iv). To implement a policy which provides the macroeconomic stability through indirect ways such as ensuring inflation stability, spending the state revenue against the form of the cycle and letting the exchange rate float. This can prevent development of the Dutch disease, and if it occurs, the policy is the most efficient scenario to mitigate its ramifications and large-scale impacts on the economy.

Conclusion

Taking everything into account, there has been partial evidence of the Dutch disease in the Mongolian economy. The findings have been able to be categorized into three groups: positive and negative evidence, and not related (different feature) to the Dutch disease.

The positive evidence fits into the resource curse phenomena. Hence, a sharp rise in foreign exchange sold lead to an appreciated exchange rate (~37%) during the mining boom, and then the national currency depreciated exponentially post the boom. The Bank of Mongolia, therefore, has faced the challenge of an exchange rate depreciation and draining the foreign exchange reserves which has nosedived by 53%. Despite the decline in the exchange rate, it takes a time for other tradeable industries to recover from price distortions.

Moreover, once the boom is exhausted, the current account has turned to deficit, external and public debts have increased drastically because foreign capital may be attracted for investment in the booming sector, and also the government borrowing becomes easier although is not always wisely spent.

The opposite evidence is that exports of non-resource tradeable have not declined, while imports have increased. This is because the non-resource tradeable industry is likely to be affected by fundamental economic cycles, and not by the mining boom.

Some symptoms of resource curse in the Mongolian economy are not exactly the same as the Dutch disease. The economy has its own special feature which might be called the "Mogul Disease". Although the contribution to the GDP of the mining sector has increased, the manufacturing sector remains stable and has even started to increase slightly. Instead, the main industry, agriculture, is declining considerably. In addition, the labor transmission comes from the agriculture sector into construction, and the manufacturing sector not significantly into mining.

Overall, the current natural resource dilemma leading the economic downturn can be caused by external market forces such as mineral commodity prices volatility,

and internal economic stresses which may lead to reduced growth arising particularly from some of Dutch disease effects. Furthermore, distorted processes of policy making promote corruption and excessive rent-seeking that need to be investigated.

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