ECONOMIC RESEARCH INSTITUTE

2018 ANNUAL REPORT

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Commodity market studies:
Update

COPPER MARKET STUDY–2018[1]

World copper demand was flat during 2017 and decreased slightly in the first half of 2018 due to lower demand from China. According to Wood Mackenzie, the health of the global economy is to drive a modest 2 percent acceleration in copper consumption growth in 2018. Also, electrifying society phenomenon which indicates transition to electric vehicles from combustion engine vehicles is the significant source of demand.

Supply disruptions due to strikes at the Chilean Escondido and Peru's Cerro Verde mines, the Indonesian government's temporary ban on exporting copper concentrate as well as the fact that no new projects were started led to a 1.3 percent production decrease in 2017. According to industry analysts, global copper mine production is expected to increase in 2018 by 3 percent and remain flat in 2019.

Since the third quarter of 2017, copper prices have continued to rise due to supply disruptions and US President Donald Trump's promise to invest more in infrastructure. However, since the beginning of the third quarter of 2018, the price has dropped due to supply growth, concerns of a slowdown in China's property sector as well as due to the US-China trade war. The copper price is expected to increase in upcoming years and beyond due to strong worldwide demand and constrained supply.

Refined copper production was flat in 2017 and in the first half of 2018. According to the ICSG, global refined production is expected to increase in short term. Increased availability of copper ore, concentrate, and scrap, as well as refinery capacity expansions are estimated to push up refinery production. Although the refined copper supply is expected to increase, demand is anticipated to grow at a faster rate. Thus, industry analysts have predicted a possible structural shortage in copper, expected to occur in late 2019.

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1   See the Copper market baseline study and its update from ERI website

Figure 1. Copper price projection, USD per tonne
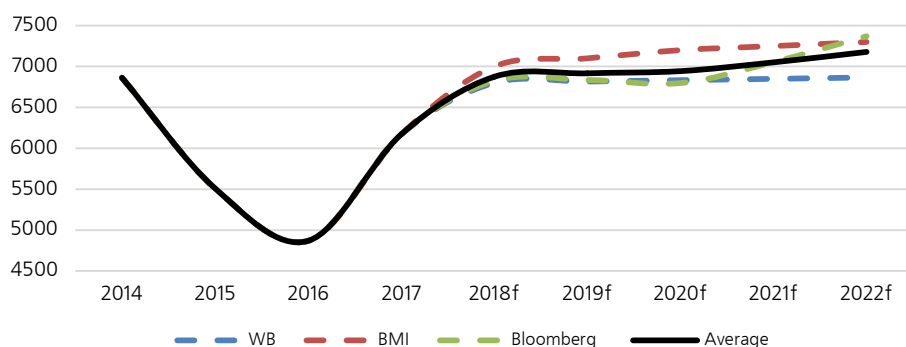
For the Mongolian market, local demand for cathodes is expected to increase due to the anticipated economic growth. The Chinese demand for Mongolian copper concentrate is also likely to be strong in the mid and long term due to the government's ban on importing copper scraps and overall increased electric vehicle sector demand. On the supply side, refined copper production is expected to be flat whereas copper concentrate production is expected to decline due to the grade decline of Oyu Tolgoi in short term.

COAL MARKET STUDY–2018[2]

World crude steel production was 1,691 Mt in 2017, an increase of 5.3 percent compared to the previous year. Economic Intelligence Unit forecasts production to increase in the short term. This is mainly driven by stronger production in Japan and India while Chinese forecasts are relatively weak due to the moderating construction activity, stricter environmental policies.

World production of coking coal was 1,102 Mt in 2017 and it is forecasted to increase in short term. Australian production is expected to increase due to the operation of new mines. Chinese production will remain stable and imports of coking coal is expected to decrease due to stricter environmental policies

Spot price of coking coal is forecasted to decline. This was mainly driven by softer demand from China whereas growing demand elsewhere in the world and constrained growth in supply are expected to provide some support to prices and it remains above 2016 levels.

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2   See the Coal market baseline study and its update from ERI website

Figure 2. Coking coal price projection
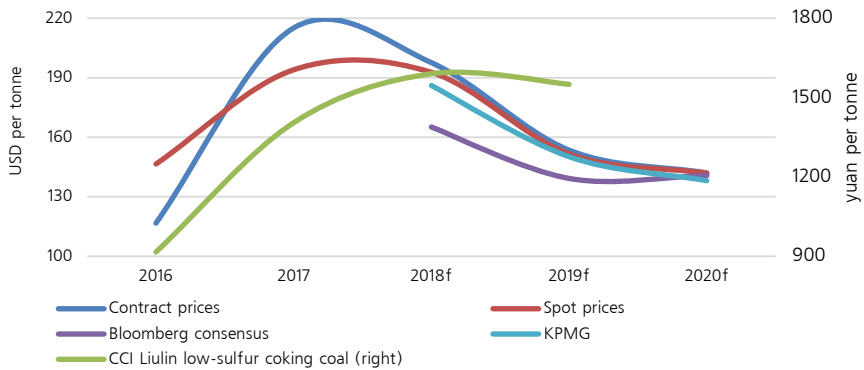
Source: Department of Industry, Innovation and Science, Fenwei Energy, Bloomberg, KPMG

For thermal coal, hot weather, weak hydro power production and limited domestic production fostered Chinese import demand for thermal coal. But this growth is not expecting to continue due to import quote and higher domestic production. Also, environmental policies fosters risk in consumption of thermal coal. From supply side, export of Indonesia and Australia is expected to remain stable in short term.

Demand for Mongolia's coking coal is largely dependent upon the Chinese market. Mongolia exported 26.2 Mt of coking coal to China in 2017. China's imports of coal are expected to decrease in short term due to decrease of steel productions and usage of electric arc furnaces. From supply side, the total annual production capacity of Mongolian mining companies are approximately 45 Mt. Main hindrances in Mongolian export of coal are the transportation cost. There is opportunity to solve this issue through the IPO of Erdenes Tavan Tolgoi and infrastructure investments.

GOLD MARKET STUDY–2018[3]

World gold demand decreased by 6 percent year-on-year in the first half of 2018. This decrease was due to a fall in demand for gold for investment as demand for jewelry remained constant and demand for technology and reserves increased. In 2019, the demand for gold is expected to increase slightly as jewelry demand is expected to grow marginally, led by increased demand from China.

Gold supply, determined by mining production, net producer hedging and recycled gold increased by 5 percent year-on-year in the first half of the 2018. This increase was spearheaded by a 4 percent increase in gold mining production, the largest component of gold supply. Moving forward, the outlook for the supply of gold is positive as mining production is expected to continue to modestly grow in the short term.

The world price of gold is expected to hover around the mid 1200 USD mark as overall supply is expected to outstrip overall demand marginally. While some global instability persists, continued positive perceptions of the US economy is expected to damped

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3   See the Gold market baseline study and its update from ERI website

demand for gold as a buffer against instability as investments are focused towards more lucrative options. As a result, gold prices may remain lower though gold prices are also known to be especially stable.

Figure 3. World gold price forecasts, USD per ounce
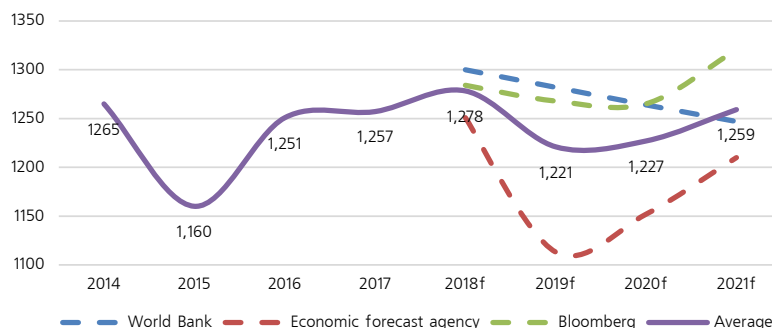
Mongolian demand for gold is expected to increase as the Bank of Mongolia continues to adhere to the Gold-2 program, and meets its 2018 goal of increasing gold purchases by 10 percent from 2017. Mongolian supply also looks positive as Oyu Tolgoi's underground development is proceeding according to plan and the gold reserves of other projects have increased in light of more exploration drilling. Legal changes to the procurement of exploration and mining licenses are also expected to increase Mongolia's gold reserves in the near future.

IRON ORE MARKET STUDY–2018[4]

World steel production was 1,689 Mt in 2017, an increase of 3.6 percent year-on-year and it is projected to increase gradually in the short term. This increase will be due to combination of decrease of steel production in China offset by increase of output in Japan and India. Chinese steel production is forecasted to gradually decline due to the environmental policies to fight air pollution and constrained demand whereas ongoing expansion of steel making capacity and increasing steel demand is fostering growth of India's steel production.

According to BMI Research, world iron ore production rose by 3.3 percent year-on-year in 2017 and it is expected to grow modestly in the short term. Australia's iron ore production is forecasted to increase due to productivity improvements and replacement mines at Rio Tinto and BHP's operation whereas China's iron ore production is decreasing due to constrained steel demand and tightening environmental standards.

China's decreasing steel production coupled with increasing supply in Brazil and Australia are expected to reduce iron ore price in the short term. Also, price spread among different grades of iron ore are expected to widen in the near term along with stricter environmental policies.

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4   See the Iron ore market baseline study and its update from ERI website

Figure 4. Iron ore (62%) price projection, USD per tonne
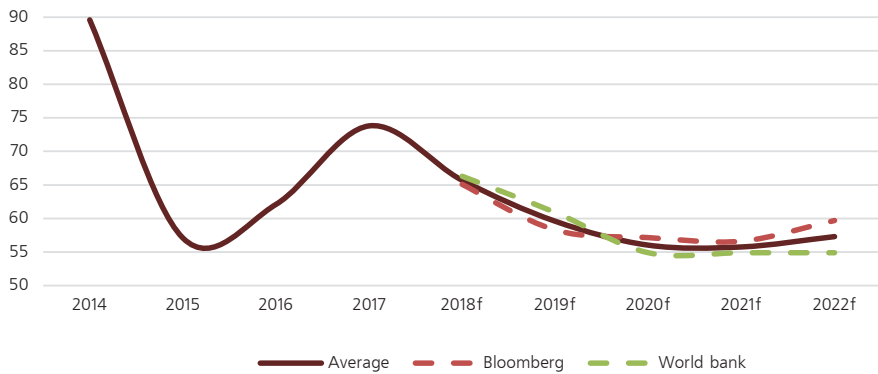
For Mongolian iron ore industry, China is the target market. However, China's imports are forecasted to decrease due to moderating steel production. This will affect the negatively on demand of Mongolian iron ore. On the supply side, Mongolian iron ore production reached a historical high of 7.7 Mt in 2017 due to the growth of iron ore price on global market. In the long term, there are opportunities to increase exports through reducing transportation cost with the Sainshand-Khangi-Mandal-Bugat new railroad that was included on the list of planned railroad.

Foreign Direct Investment Inflow into Mongolia: Comparative Analysis

In the previous two studies, the investment climates of Mongolia and Chile were compared based on indices such as the Doing Business, Corruption Perception and Investment Attractiveness. Due to the differences in mining sector development time periods of Mongolia and Chile, in this update, three different countries were chosen for comparison. These countries' mining sector only recently began to immensely contribute to GDP and exports: Kazakhstan, Peru and Zambia. Additionally, these countries are categorized as middle-income similar to Mongolia whereas Chile was labelled as a high-income country.

In addition to updating the indices for all four countries, their regulatory and institutional frameworks were studied to determine what gave some of these countries an edge over the the others in terms of attracting foreign direct investment. In particular, the policies and trends of each country's promotion and facilitation of foreign direct investment into the extractive industries were analyzed.

Figure 5. FDI net inflow, BoP current billion USD, 2000-2017
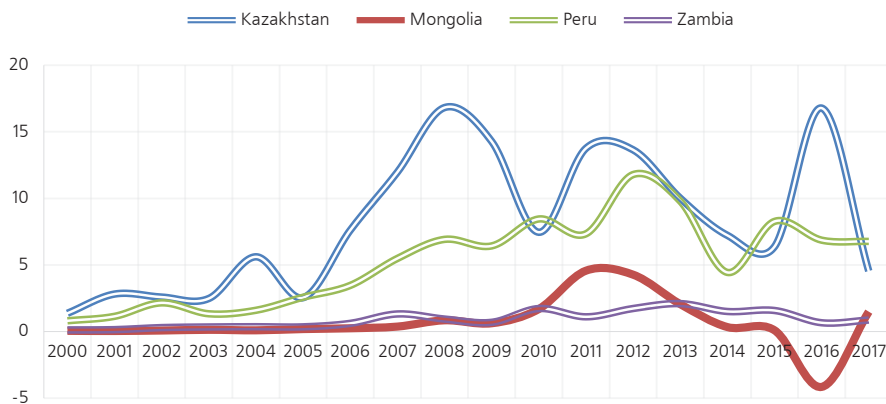
Source: UNCTAD

Based on the analysis of the countries' investment environments, a couple of recommendations were developed by the research team which could be applied to Mongolia based on the successful policies implemented by Kazakhstan, Peru and Zambia:

Diversification

- Priority sector: agriculture, such as cashmere and meat industry
- Identify other sectors which have greatest potential in attracting FDI

"One-stop shop"

- Provide assistance and help streamline licensing procedures for starting business for foreigners for all sectors, not just mining
- Accessible online and in-person

Stable environment

- Institutional and business environment should be stable, meaning regulations and laws are not frequently changed as investors prefer certainty
- Implementation of stabilization clauses for long-term investment contracts

Transparency

- Make all major investment agreements publicly available (currently only OT agreement is available along with a couple of local level agreements)
- Inclusion of local communities and public in negotiation discussions
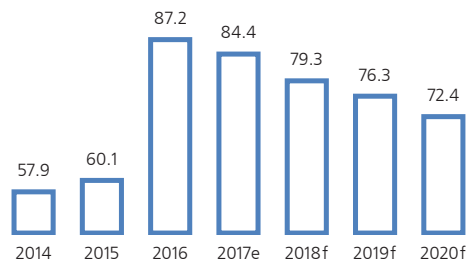
Revenue Management: Fiscal Sensitivity Analysis

Mongolia has experienced a number of economic upturns and downturns over the years. The economic boom in 2012 was followed by a slowdown when mineral commodity prices significantly fell on the world market. As budget expenditures increased and revenues fell, the government's public foreign debt grew substantially. The Fiscal Stability Law (FSL) was adopted in 2010 and a Fiscal Stability Fund (FSF) was established in 2011 to prevent economic fluctuations and to promote sustainable economic growth instead. However, the implementation of these fiscal policies has been delayed and amended a number of times.

Figure 6. Public debt, billion USD

2014	2015	2016	2017	2018-II
3.50	3.76	4.87	7.32	6.91
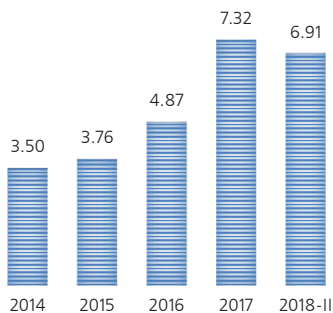
Source: Bank of Mongolia

Figure 7. Debt/GDP, percent

2014	2015	2016	2017e	2018f	2019f	2020f
57.9	60.1	87.2	84.4	79.3	76.3	72.4

Source: World Bank

In the previous study, the impact of the implementation of the FSL on the economy was assessed. The simulations conducted in the study indicated that the FSL could counteract and lessen the de-industrialization effect of mining development.

The FSL set ceilings on four key budget indicators such as budget revenue, budget expenditure, deficit and public debt. Thus, in this study, the sensitivity of economic performance to changes in some of the key requirement of the FSL were analyzed. Two key benchmark parameters of the FSL were relaxed: ceiling on the growth of budget expenditure and restriction on the budget revenue.

Main findings:

◀ The FSL contributes significantly to the reduction of economic fluctuation; however, the implementation of the law needs to be stricter.

◀ When not implementing provisions related to budget revenue or expenditure or both from the law, the greatest impact on the economy was observed when the government expenditure restriction was not in place. In other words, when budget expenditures significantly increase, the economy becomes more destabilized and prone to fluctuations. Another notable observation was that the FSF played a key role in limiting economic fluctuations caused by revenue.

◀ The simulations ran in the study does not reflect the fluctuations observed in real life as the impacts of revenue fluctuations are subdued by the implementation of the FSF. Thus, economic fluctuations may be more amplified if budget revenue forecasts are high and expenditures rise significantly similar to previous years. Additionally, even though the fund stabilizes the impacts of revenue fluctuations during periods of high volatility, the economy remains fragile.

Contracting

Most foreign direct investment into Mongolia are directed into the mining sector due to the investment attractiveness of natural resources. Projects in the mining sector has several impacts on the host country. First of all, due to the sheer size of large mining projects, the socio-economic impacts pertaining to social responsibility, management of displacement, issues of water and land usages and provisions of local employment opportunities are significant. Secondly, mining projects spillovers into other sectors such as energy, infrastructure and transportation which requires additional investments. Third, due to the complex nature of mining project financing and magnitude, the repercussions on the country's finances are sizable. Therefore, it is crucial for the host country to enter into a well-developed contract which considers all direct and indirect effects.

This study aims to study the legal and policy framework of Mongolia, specifically the Oyu Tolgoi investment agreement, in entering into agreements with mining companies and to compare this with international practices of mining investment agreements. Part of the review process is identifying the ways to increase the benefits received by the host country, which includes analysis of the fiscal benefits to the government such as royalties and taxes, equity arrangement, local procurement of goods and services, infrastructure, maximization of employment opportunities, community engagement, social and environmental issues such as land, stakeholder groups, and water. By analyzing the advantages and disadvantages of the current contracts in Mongolia, it will assist in identifying the clauses needed for subsequent agreements as well as the changes that need to be made in Mongolia's mining sector and institutional environment.

Currently, the Oyu Tolgoi agreement is the only publicly available investment agreement for Mongolia and due to this transparency, the agreement is deemed as an example of a "good" contract in international literature. The agreement is also mindful of a number of crucial issues and includes most of the key elements of model contracts generated by international institutions. Due to the nature of mining projects, developing a standardized model contract is not possible and thus, every mining project contract is negotiated on a case-by-case basis. Thus, the Oyu Tolgoi agreement, like every mining contract, has its pros and cons.

Pro	Con
◂ Detailed articles on maximizing employment opportunities such as capacity building and trainings ◂ Community engagement is facilitated through a special council which aims to assist in regional development and dialogue ◂ Oyu Tolgoi is often cited as an example of good sustainable water usage in arid areas	◂ Double tax treaties ⇨ loss of revenue for Mongolia ◂ Equity and financing arrangements ⇨ high interest rate on loan used for 34 percent stake ◂ Issues surrounding infrastructure is mentioned in the contract in an unclear and/or broad manner

General recommendations and findings:

◂ The spillovers from the mining project to infrastructure, regional development and social issues are all governed by different laws, thus, a unified approach is needed

◂ Government should develop an integrated form of agreement with an integrated project delivery platform

◂ When negotiating an investment agreement, consensus from all stakeholders should be received

◂ Include international standards and requirements in model contract which remain unchanged despite changes in commodity prices and economic conditions

◂ Set limitations and ranges in certain provisions, such as taxes, of the model contracts during the negotiation process to allow for changes depending on the circumstances

Taxation and Financial Reporting

For certain countries, their natural resource endowment constitutes a significant portion of national wealth. On one hand, mineral resources can drive economic development, while on the other, mineral resources are exhaustible and nonrenewable. In light of these characteristics, maximizing the benefit from mineral resources is crucial for stakeholders in the mining industry. Most mining projects continue for decades or longer and require significant sunk costs during the initial period of the project on exploration and construction. Mining industry production requires expansive technologies and machineries as well as highly skilled technical and managerial human capacity. Due to the immobile aspect of natural resources and the scarcity of the technology and workers required, most resources are explored and extracted by the private sector through domestic and foreign direct investment. Therefore, governments are usually responsibile for maximizing the economic benefits of mining to not only the state and local governments, but to the broader community through its fiscal regimes as well.

Considering the importance of the mining sector taxation regime in collecting and distributing the benefits of mining, striking an appropriate balance between promoting private mining sector activity on one hand while reaping its due benefits on the other is key. Therefore, the objective of this report lies in comparing the Mongolian taxation scheme in the mining industry to other countries in order to identify its challenges and opportunites. In particular, at the request of the Ministry of Mining and Heavy, the research team focused on whether there is a need to use taxation as a tool to incentivize the mining industry, what measures or instruments are available to promote the mining industry and in this regard, what we can learn from the experiences of other countries.

In light of the specific characteristics of the mining sector, its taxation scheme can differ significantly from those of other sectors. As defined by the Natural Resource Governance Institute (NRGI), the fiscal regime of the mining sector can be understood as the set of interrelated legal, regulatory and contractual instruments through which the state shares revenues generated by extractive projects. While these instruments can differ from country to country, when designing the fiscal regime, they are generally utilized to reach the following 4 goals.

1. Maximizing the economic return to the state from its resource endowment

2. Sharing risks and expected returns between the state and the investor

3. Consistency with national development context and strategy

4. Ease of administration and compliance

While a multitude of varying fiscal instruments are utilized, they can also be broadly categorized into the following three divisions: fixed fees (license fees, signature bonuses), per-unit charges (Royalties, Import tariffs, VAT, Land rents, Property taxes), and shares of measured profits (Profit taxes, dividends, profit shares, production sharing arrangements, resource rent taxes, windfall taxes).

Research team then looked into the international practices concerning mining taxation and incentives in resource rich countries such as Chile, Peru, Australia, Canada, Tanzania and South Africa.

Overall, the research team found that while some mining specific regulations are detailed in legislation such as the Minerals Law, Investment Law as well as the Corporate Income Tax Law, the majority of the elements between the government and mining projects are fleshed out through investment and stabilization agreements. Considering the overall generality of mining taxation legislation in Mongolia, there is room for legislative improvement in order to promote the mining sector.

However, previous research has found that the effectiveness of tax incentives is largely dependent on the level of institutional quality. According to the "Doing Business" report published by the World Bank, the "Economic Freedom Index" created by the Heritage Foundation as well as the "Policy Perception Index" made by the Frazier Institute, Mongolia's institutional quality is deemed weak. While Mongolia's mineral potential is quite high, and its tax challenges are not as pronounced as other similar countries, political and policy stability remains a concern for investors.

Although there is room for tax incentives, given Mongolia's quality of institutions, it would not be the primary contributor to increasing the attractiveness of investing in mining in Mongolia. Instead, as long as political and economic stability remains a concern, policies should be targeted towards ensuring stability, improving the business environment and providing consistency.

Dynamic CGE model of Mongolian economy: Risk analyses on the IMF's EFF program in Mongolia

This study was conducted by Economic Research Institute (ERI) and Gerege Partners LLC in the context of an Institutional Support Project, with financial and scientific support from the Partnership for Economic Policy (PEP).

This study assesses the impacts of three possible risks on the Mongolian economy from 2018 to 2025 using a dynamic CGE model.

Within the scope of the "Institutional Support Project," the research team developed the PEP-1-t standard CGE model in conjunction with the Mongolian Social Accounting Matrix (SAM) 2014 to construct a long-term baseline projection of the impacts of the IMF's Extended Fund Facility (EFF) program. SAM was built using the Supply and Use Table (SUT) and macroeconomic projections made by the IMF. The IMF projections used in the model's assumptions are from the fourth review under the EFF arrangement to provide a reliable benchmark case given the collaboration between the IMF and the Mongolian government. The baseline study assumes that the Oyu Tolgoi (OT) underground mine development is completed as planned and that the prices of coal and copper are around approximately 80 USD and 6500-6800 USD, respectively.

The economy has been recovering since the implementation of the EFF in 2017, increased production and price of mineral production and investment into the OT underground mine development. However, this recovery may not last due to large internal and external risks. In this study, the impact of the three major risks mentioned by the IMF on the macroeconomy and its various sectors are assessed. Below is a brief description of the risk simulations and their outcomes:

◂ The parliamentary and presidential elections in 2020 and 2021 coincide with the conclusion of the EFF program. There is a historical trend where government expenditure increases significantly during election years. Therefore, we considered the impact on the economy if government expenditure increased in 2021 in such a way that current expenditure increased by 20%, capital expenditures by 15% and transfers to private sector by 20%. Expansionary fiscal policies promoted domestic demand by increasing household income and public sectors; however, negatively affected investment in the economy. Due to this, from 2021 to 2025, real GDP would be 0.25-1.25% lower than the baseline.

◄ Another risk is lower commodity prices and demand due to global economic slowdown, especially in China, which would cause a decline in exports for Mongolia. In the second section of the study, impact of coal prices and export declining by 10% and 30%, respectively, from 2019 is examined. Based on the simulation results, the decline in coal sector production would reduce production and investment of other sectors through intermediate consumption. Relative to the baseline, total exports declined by 7-10% and real GDP by 5-6%.

◄ The third risk considered in the study is the continuation of the OT underground mine which may be delayed due to tax disputes with the state. This risk assessment may also be seen as an assessment of the impact of the OT underground mine on the Mongolian economy. If the underground mine development is stopped, foreign direct investment also declines and total investment into the economy is 20-30% lower than baseline. Additionally, the decline in investment and copper productions also negatively affects the production and import of other sectors. Copper is one of Mongolia's main export commodities and based on the simulation, total exports will be 25% lower than baseline by 2025. Furthermore, real GDP is projected to be 8% lower than baseline assumptions.

As risks arise in the economy, demand decreases which causes declines in budget revenue; this consequently creates budget deficit which is detrimental to the underlying assumptions. As budget deficit increase, government debt also increases (Figure 1).
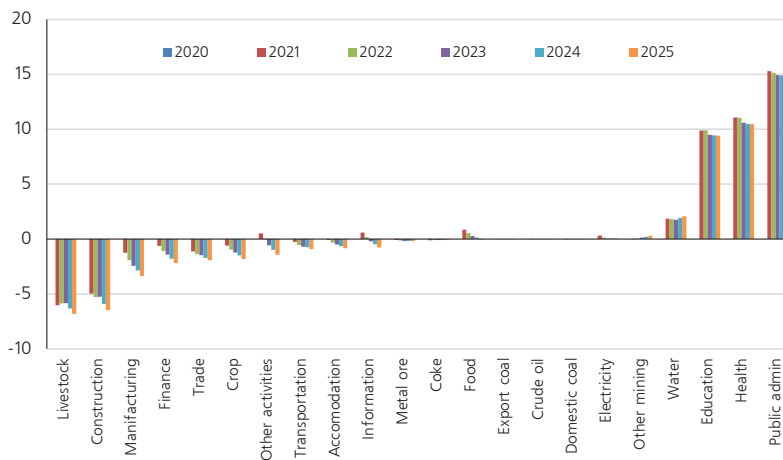
Figure 8. Government debt impact on GDP, %
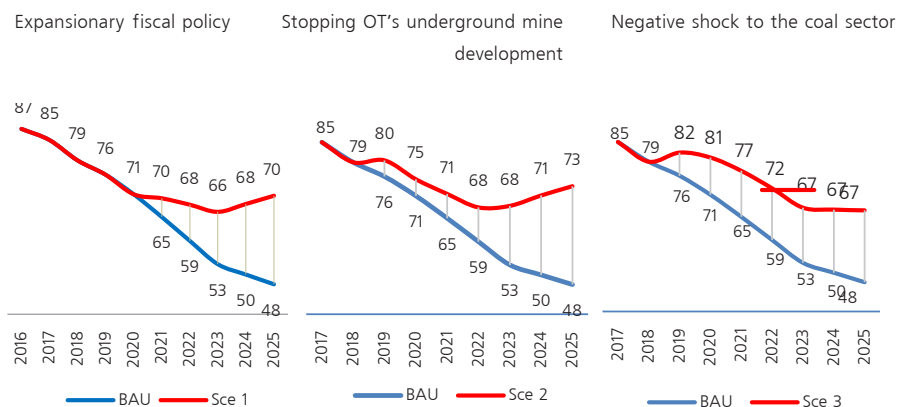
Source: Researcher's calculations

The CGE model studies the impact of macroeconomic policies on the economy and market, thereby allowing analysis of the impacts on the sectors, industries, demand and prices. For instance, the effects of the expansionary fiscal policies on various sectors is shown in the figure below. The expansionary fiscal policy promotes production of public services but negatively affects the production of sectors which attract investment.

Figure 9. Expansionary fiscal policy impact on sectors, %

Legend: ■ 2020 ■ 2021 ■ 2022 ■ 2023 ■ 2024 ■ 2025

Sectors (x-axis): Livestock, Construction, Manifacturing, Finance, Trade, Crop, Other activities, Transportation, Accomodation, Information, Metal ore, Coke, Food, Export coal, Crude oil, Domestic coal, Electricity, Other mining, Water, Education, Health, Public admin

Source: Researcher's calculations

This study analyzes the impact of potential risks on the economy in isolation. If the aforementioned risks occur simultaneously, it is clear that the negative repercussions on the economy would be greater.

The economic and environmental impact of FDI in the Mongolian coal export sector

This study was carried out by ERI and Gerege Partners LLC within the scope of the Institutional Support Project with financial and methodological support from the Partnership for Economic Policy (PEP).

Coal is one of the main export commodities of Mongolia. Additionally, the majority of exported coal is extracted from two major strategic reserves, Tavan Tolgoi and Nariin Sukhait. In particular, more than half of the total exported coal goes through the Gashunsukhait-Gantsmod border by gravel or paved roads totaling 276 km.

The transportation cost of paved and gravel roads is 0.06 USD ton/km, with the transportation cost per ton between the mine and border averaging 17 USD. Given the observed price of coal (40-100 USD/ton), this is a significant cost which imposes a major constraint on the production and export of coal when the price of coal is low and hence deteriorates the competitiveness of Mongolian coal. When the price of coal is sufficiently high, the current road system creates a bottleneck problem. For instance, in 2017, the queue of dump trucks to the border is reported to be over 100 km long. In addition, the high utilization of road transportation has a major environmental impact, leading to dust, air and soil pollution. These issues have motivated investors and the government to build a railway system connecting the mine and border. The government of Mongolia has planned to build the railway system in order to solve prevailing issues and increase coal exports. However, currently, the plans have not been implemented. If the railway between Gashuunsukhait − Gantsmod is constructed and coal exports can reach 30 million tons per annum, railway transportation is expected to cost 5-7 USD per ton.

In the study, the research team constructed and utilized the Social accounting matrix (SAM)-2014 as the main database for the analysis. The research team then examined the impact of Foreign Direct Investment (FDI) aimed at increasing the export capacity of the coal sector on the Mongolian economy and environment by using a recursive dynamic Computable General Equilibrium model. FDI is assumed to expand the coal export sector and be used to construct a railway line connecting the main coal reserve in Mongolia and the Chinese border. The impact of FDI on the economy was estimated through its effect on macroeconomic variables, economic sectors and on the environment through greenhouse gas (GHG) emission. The simulation explored two scenarios over 10 years between 2014 and 2023.

Baseline Scenario

The research team first developed a baseline scenario that illustrated the Mongolian economy until 2023 in order to examine the impact of FDI aimed at expanding the export capacity of the coal sector on the economy and environment. In particular, the following assumptions were made when constructing the baseline scenario: GDP followed the IMF's projections until 2022 and grows at 4.5% per annum afterwards, 5.7 billion USD is expected to be invested into the underground mine of Oyutolgoi between 2016-2020 and the world export price of coal is 50% higher than its 2014 value for the simulation period.

FDI Scenario

In this scenario, in addition to the situation detailed in the baseline scenario, the research team considered a situation in which the coal export and railway sectors receive 1 billion USD in FDI to increase the export capacity of the coal export sector. 80% of this investment is assumed to be used to increase the production capacity of the coal export sector while the remaining 20% is used to establish the 276 km railway to transport export coal to the border. The investment is expected to be awarded in equal installments from 2017 to 2021 with the railway and other newly formed capital becoming fully operational in 2022.

Simulation Results

When comparing the Baseline and FDI scenarios, the following results were observed:

Figure 10. Price of transport services, % change with respect to the baseline scenario
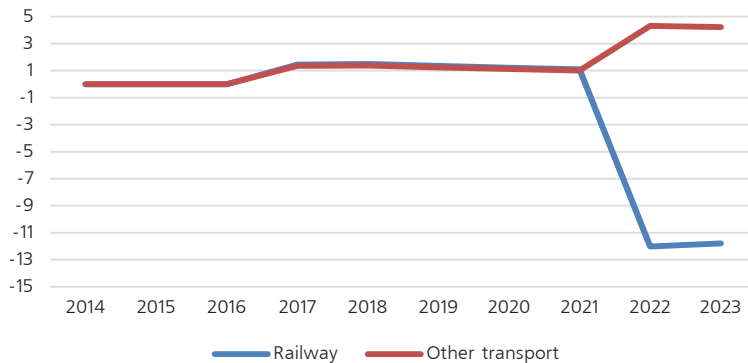
- ◄ The FDI has a positive impact on macroeconomic variables (real GDP, real household consumption, real exports and real imports) and employment.
- ◄ Price levels increased.
- ◄ Most sectors experienced the effects of Dutch disease. For instance, while the coal export, railway, construction and trade sectors expanded as a direct result of the FDI, production in other sectors decreased.
- ◄ Transportation costs decrease when coal is exported via railway.
- ◄ Utilization of the new railway decreases the negative environmental impact of coal transportation through reduced GHG emissions.
- ◄ Despite the overall economy expanding, GHG emission reductions from switching from road transportation to railway transportation results in an overall decrease in total GHG emissions.

Fiscal Policy Index

In 2016, the Mongolian economy nearly experienced a financial crisis when the fragile stability of the economy began to unravel due to low commodity prices and decreases in FDI. In response, authorities sought and received financial aid packages in early 2017, agreeing with the IMF on a three-year arrangement for Mongolia under the Extended Fund Facility (EFF) program for approximately 440 million USD. As a part of the EFF, the government of Mongolia (GoM) is required to follow through on a range of public financial management, fiscal, public expenditure, monetary and banking sector reforms with fiscal discipline being of the utmost importance.

In order to effectively implement these policies however, a number of economic instruments are necessary. The goal of this study is to develop a fiscal policy index (FPI) that looks at the current fiscal stance of a country based on a comparison of the government's specific target of the debt-GDP ratio for a given finite horizon with a forecast of the debt-GDP ratio. The FPI will provide the GoM with a useful and simple economic and public-sector management and monitoring tool in short and mid-term that can support public expenditure decisions and enhanced fiscal discipline.

When creating this index, a Bayesian VAR (BVAR) model was employed considering the relatively short series of data available for Mongolia as well as its ease of calculation. Utilizing the BVAR model, the research employed the methodology put forth by Polito and Wickens (2006) in order to create a forward looking measure of fiscal stance.

In calculating the FPI using a BVAR, the main objective is to compare a target level of debt-GDP ratio for a given set amount of time with a forecast of the debt-GDP ratio based on a BVAR that utilizes the government budget constraint. In the report, the target level of debt-GDP ratio will be heavily based on the Extended Fund Facility (EFF) program set forth by the International Monetary Fund (IMF) for the Mongolian government. As for calculating the forecasted index based on the budget constraint, the model employs the following variables: government revenue and expenditure, government foreign and domestic debt, average interest rate on foreign and domestic currency bonds, economic growth, current account and the exchange rate.

Quarterly data from 2006 onwards, collected from the National Statistics Office (NSO) of Mongolia, the Bank of Mongolia, and the Ministry of Finance was used when constructing the index. The index was calculating using the following equation.

In other words, the index value depends on discounted future primary surpluses and the targeted and the current debt-GDP ratios.

◄   If, the debt-GDP ratio is forecast to be below target.

◄   If, the debt-GDP ratio is forecast to be on target

◄   If, the debt-GDP ratio is forecast to be above target.

The index shows how close the government debt is to the ceiling by calculating the expected FPI or fiscal stability in the near future based on the most recent quarterly macroeconomic data available. The figure below shows the index as of the fourth quarter of 2018. An index value above the red line limit indicates a level of government debt that is not at the upper limit of the debt ceiling along with an expected fiscal balance surplus. On the other hand, a value under the red limit line implies that the government debt is at a level above the maximum debt limit and is deemed unsustainable.

Figure 11. Fiscal policy index at one-quarter horizon, 2013Q1-2019Q4
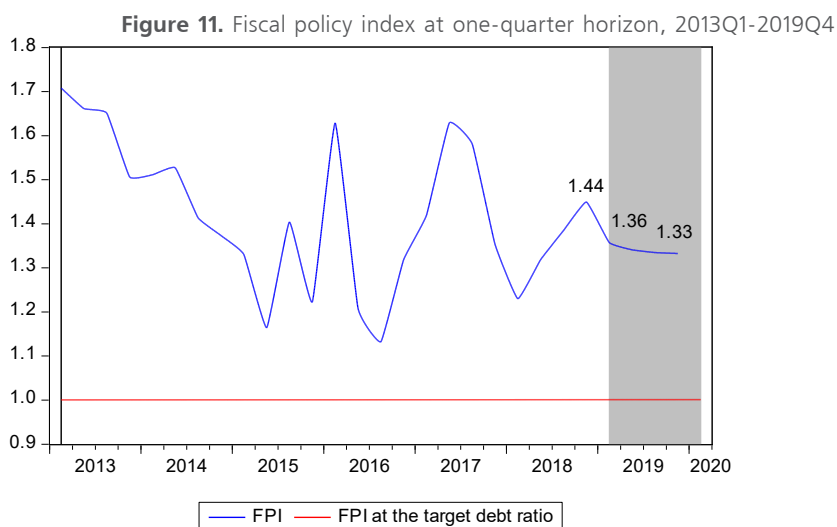
As illustrated by the figure above, the FPI has been declining since 2013 as fiscal deficit and debt to GDP increased. However, in 2016 when the debt requirement was not fulfilled, the Parliament of Mongolia made an amendment to the law increasing the debt ceiling from 60% to 88%, which caused the sharp increase in FPI. Thus, it should be noted that the increase was not due to improvements in the fiscal stance but rather because the debt ceiling was raised. As the economy began to recovery in 2017, an increase in FPI is also observed. The 88% debt ceiling in 2016 was tightened to 85% in 2017 and then 80% in 2018.

However, since the beginning of 2018, the index increased due to a budget surplus and a decrease in public debt. As of the fourth quarter of 2018, the index had a value of 1.44 which was based on macroeconomic forecasts of one quarter horizon. From the first quarter of 2019 to the first quarter of 2020, the index is expected to decline slightly from 1.36 to 1.33. This is due to a decrease in the debt ceiling to 75% in 2019. Although the index is above the limit currently, the index is still vulnerable to sharp declines indicating unsustainable levels of debt if there are macroeconomic risks and the budget deficit is higher than expected.

Assessment of Export Promotion Policies in Mongolia

In the past 10 years, Mongolia's foreign trade has increased 2 to 3-fold, accounting for 85.9% of GDP in 2016. However, like many other developing countries, Mongolia lags behind in terms of export diversification. For instance, mineral commodities make up around 90% of Mongolia's total exports, with the majority of exports going to China. Since 2000, the export of mineral commodities rose significantly, decreasing the overall share of non-mining exports. In 2017, the share of non-mining exports amounted to a mere 11.4 percent of total exports.

Only a few key products make up the majority of non-mining export income. In particular, textiles, leather and leather products, basic metals, livestock, food products and plant attributed products made up 90% of non-mining export income. This further highlights the lack of diversification of Mongolian exports. In order to successfully diversify, government policies play an important role.

Figure 12. Non-mining exports, month, million USD
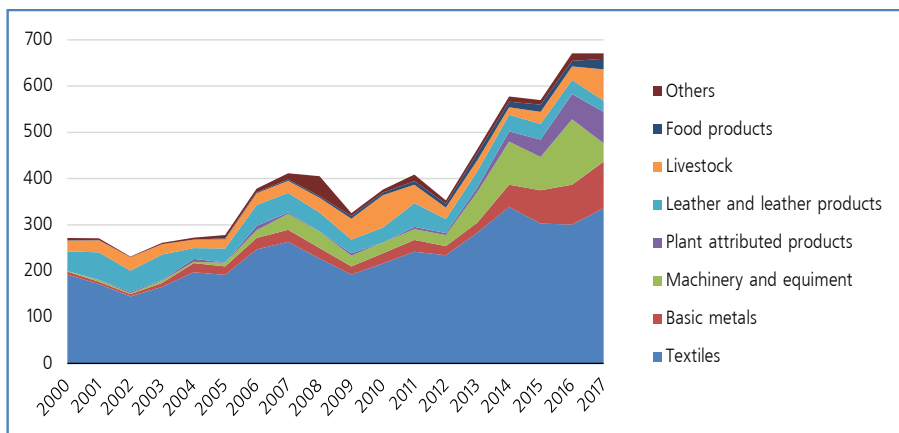
Source: NSO and Customs General Administration

In 1998, the first export-promotion policy attempt was carried out by the Mongolian government. However, this policy was more geared towards promoting mining exports. Since then, several separate small-scale actions to promote non-mining exports have been implemented. However, the first comprehensive national policy to promote and diversify non-mining exports, titled the "Export Promotion Program", was adopted in 2013. This program was then improved upon with the National Export Promotion Program" adopted in 2016.

This study aims to analyze the policy efforts undertaken by the Government of Mongolia and other non-governmental organizations in the country. In order to make an accurate assessment, the research team looked at the institutional set-up as well as instruments of export promotion policies in addition to analyzing official policy documents. The policy assessments were made at both the sectoral and national level.

The study utilized the "revealed comparative advantage" methodology used by Вйla Balassa (1965), in order to identify those sectors that constitute a comparative advantage for Mongolia. Using the methodology, Mongolia was found to have a comparative advantage in textiles and leather and leather products.

Additionally, the research team also used the "Gravity with gravitas model" (2003) developed by Anderson and Wincoop in order to estimate the impact of policies implemented by the Government of Mongolia using past panel data from 35 trading partner countries over a period of 7 years.

Research Findings

◄ The Mongolian export sector is not diversified with only a few key non-mining sector products accounting for over 90% of total non-mining export income. Of these, only two products have an exporting comparative advantage.

◄ The development of a comprehensive export promotion policy began in 2013 and has been continuously refined since. Despite this, export promotion policies are not cohesive, with too many implementing ministries and low cohesion between NGO's and international organizations focused export issues.

◄ There is an overall reliance on financial measures such as providing concessional loans, VAT exemptions and government subsidies when promoting exports. These measures seem to have a positive impact on the textiles and leather and leather products sectors. However, this impact has not been significant.

◄ Non-financial measures for export promotion are rarely implemented. Overall, the number of activities aimed at exports such as product fairs, insurance, certification, and workshops organized by NGO's and international organizations have been low.

◄ According to the Gravity analysis mentioned above, done using data from 35 trading partner countries from 2010 to 2016, concessional loans for export offered by the Government of Mongolia was found to have a positive impact and was statistically significant.

Policy Recommendations

◀ Moving forward, the creation and implementation of a unified promotion policy should be delegated to one ministerial portfolio in order to promote clarify and stability.

◀ As a comprehensive export promotion policy requires the participation of multiple stakeholders such as policy makers, government agencies, as well as the private sector, an organizational structure, such as a national export council, should be created in order to ensure the participation and coordination of various stakeholders.

◀ When implementing export promotion policies, both financial and non-financial instruments should be utilized concurrently.

Other commissioned studies

Study of the Development of Agricultural Value Chain

The study was commissioned by the Japan International Cooperation Agency. The purpose of the study was to identify the current situation and future challenges related to the production, distribution and sale of vegetable farming in Mongolia. The aim of the study was to provide valuable information and insight in constructing the master plan project and productive agriculture promotion policies in Mongolia. The survey covers domestic production of vegetable, production of farming households, vegetable imports, consumption, consumer sentiments, vegetable value-added chain, price formation, vegetable distribution, demand of restaurants and canteens, processed vegetable market, overview of sector policies, challenges and recommendations.

Study on Macro Economy of Mongolia

The study was commissioned by the Japan International Cooperation Agency. Its objective was to review the current state of the Mongolian macro economy, to analyze causes of the change and make forecasts. Within the project, the research team prepared professional analysis and provided detailed quarterly reports and brief monthly updates for the client. The detailed analysis covered progression of key macroeconomic indicators, changes in economic sectors, trends in aggregate demand, fiscal policy issues, balance of payment, debt sustainability and developments in the money and finance sector.

Annual Performance Assessment of Soums' Local Development Fund, 2017

Under the "Sustainable Livelihood-3" project of World Bank, ERI assessed the annual performance of the Local Development Fund (LDF). The assessment covered 113 soums of 9 provinces including Darkhan-Uul, Dornogovi, Dornod, Dundgovi, Govisumber, Khentii, Selenge, Sukhbaatar and Umnugovi. As for the assessment of the implementation of the LDF in 2017 and 2018, the following indicators are used: status of ensuring citizen participation, status of informing the public about budget transparently, status of planning and preparation of budget funded by the LDF and monitoring, evaluation and auditing of budget performance.