



Budget Revenue Management

Economic Research Institute

March 2018

JICA

Contents

- Introduction
- Literature Review
- Budget Revenue Management and Modeling
 - Fiscal Stability Law
 - Fiscal Stability Fund
- Simulation
- Conclusion





Introduction

- Economic growth is expected to recover
 - mineral commodity prices are projected to be relatively high
- The state budget will be burdened with bond repayments
- Public debt increased from 1.7 trillion MNT to 15.8 trillion MNT (2010-2015).



Current state





Public debt has considerably grown

How should the state budget revenue be best allocated?

- In 2018, the GoM needs around 800 million USD to pay the repayments and interest payments of bonds such as the Chinggis and Dim Sum bonds.
 - issued Gerege bond in October 2017
- In 2021, 500 million USD of the Mazaalai bond, issued in 2016, would be paid

Set schedule of bond repayment





Current State



Source: Bank of Mongolia and Ministry of Finance





ECONOMIC RESEARCH INSTITUTE

Literature Review

- Fiscal Sustainability in Mongolia was calculated based on the IMF's program using forecasts of mineral commodity prices
 - The IMF's program was found to not have any impacts on the economy when commodity prices are decreased by 15 percent.

- Computable General Equilibrium models are widely used in the following kinds of assessments
 - Economic impact assessments of larger mining projects and programs (OT, TT, Iron ore sector, etc.)
 - Economic impact assessments of government issued bonds (Chinggis Bond, Development Bond, etc.)
 - Economic impact assessments of laws and changes in the legal environment



General Equilibrium Model



ECONOMIC RESEARCH INSTITUTE



General Equilibrium Model





Assumptions

Base Scenario without FSL and FSF Policy Scenario with FSL and FSF

- The real GDP growth will follow the IMF's forecast;
- Population and the number of household will be consistent with NSO's forecast;
- Mineral commodity productions will be consistent with the projections of Ministry of Mining and Heavy Industry;
- Their prices in the future will follow the average of international forecasts;
- Bond repayments will follow the set schedule and be funded by repayment loans;

 The policy scenario is the same with the base scenario, excluding implementation of the Fiscal Stability Law. In the policy scenario, the Fiscal Stability Law and Fiscal Stability Fund will implement in accordance with the schedule proposed by the GoM.





ECONOMIC RESEARCH INSTITUTE

6.1.1. Total budget revenue must be calculated with an equilibrated method;

6.1.2. The budget deficit derived from the equilibrated method must not exceed 2 percent of GDP in the same year or must become surplus;

6.1.3. The growth rate of total expenditure must not exceed the maximum of the growth rate of non-mining GDP in the same year and the average growth rate of non-mining GDP in the previous 12 years;

6.1.4. The present value of government debt must not exceed 60 percent GDP of the budget year;



Fiscal Stability Law

- This law was passed in 2010 and came into effect in 2013.
- Its implementation was partially postponed by the Parliament of Mongolia.
 - Articles 6.1.1 (budget revenue calculation) and 6.1.3 (budget expenditure growth) of the law are in effect.







Fiscal Stability Fund

- If major commodity prices are priced above the equilibrated price in the budget plan, the budget surplus will be deposited into the Fiscal Stability Fund.
- The government must aim to increase the Fiscal Stability Fund and the fund must equal at least 5 percent of the GDP.
- If the Fiscal Stability Fund is equal to more than 10 percent of the GDP, it can be used to fund economic activities that do not have a negative effect on economic stability.





Modeling the FSL

- Budget Revenue consists of tax and non-tax.
- Budget Expenditure: as defined by the law
- Public Sector Foreign Debt:

 $FDATTGF_F_t^{end} = FDATTG_F_t^{start} + (-SAVINGS_G_t + INVEST_G_t - GOVASSETSALE_t - DDEBTISSUE_t)*PHI_t$

Budget Revenue consists of tax and non-tax.

Budget Expenditure: as defined by the law

• Public Sector Foreign Debt: $FDATTGF_{t}^{end} = FDATTG_{t}^{start} + (-SAVINGS_{t}^{start} + INVEST_{t}^{start} + GOVASSETSALE_{t} - DDEBTISSUE_{t})^*PHI_{t}$



Measuring the impact of policy







Simulation result

| Macro indicators (%) | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|----------------------|-------|------|----------|---------|------|------|------|------|------|
| | | | BASE SC | ENARIO | | | | | |
| Real GDP growth | 0.2 | 1.8 | 8.1 | 5.3 | 6.1 | 8.5 | 8.0 | 7.0 | 6.0 |
| Mining output | 2.5 | 2.7 | 10 | 9.2 | 16.9 | 18.5 | 17.2 | 14.5 | 13.2 |
| Non-mining output | -1.4 | 1.2 | 7.2 | 3.7 | 1.3 | 3.9 | 4 | 6.8 | 7.3 |
| Real export | 2.5 | 4 | 9.7 | 11.5 | 13.7 | 7.5 | 6.2 | 6 | 5.7 |
| Real import | 0.3 | 1.5 | 3.5 | 4 | 5.3 | 2.8 | 1.4 | 1.1 | 1.3 |
| Real wage | -10.8 | 1.4 | 8.9 | -4.8 | -5.3 | 7.6 | 8.1 | 5.2 | 4 |
| Terms of Trade (ToT) | 10.2 | -1.3 | -7.2 | -0.6 | -1.1 | -1.8 | 1.3 | -0.9 | -0.8 |
| | | | POLICY S | CENARIO | | | | | |
| Real GDP growth | 0.2 | 1.8 | 8.1 | 5.3 | 6.1 | 8.5 | 8.0 | 7.0 | 6.0 |
| Mining output | 2.2 | 2.3 | 8.7 | 15.6 | 16.9 | 16.1 | 15.0 | 12.6 | 11.5 |
| Non-mining output | -1.5 | 1.3 | 7.6 | 3.9 | 1.4 | 4.1 | 4.2 | 7.2 | 7.7 |
| Real export | 2.4 | 4.3 | 9.5 | 11.3 | 13.4 | 6.8 | 6.1 | 5.6 | 5.2 |
| Real import | 0.3 | 1.3 | 3.0 | 5.7 | 3.4 | 3.2 | 2.1 | 1.5 | 1.6 |
| Real wage | -9.4 | 1.3 | 8.3 | -5.0 | -5.7 | 6.5 | 7.2 | 4.5 | 4.3 |
| тот | 8.9 | -1.4 | -7.6 | -0.6 | -1.0 | -1.7 | 1.3 | -0.8 | -0.8 |





Simulation result

| | | Mea | an | Standard deviation | | |
|-----------------|--------|-------|--------|--------------------|--------|--|
| | | Base | Policy | Base | Policy | |
| Real GDP growth | | 5.67 | 5.67 | 2.72 | 2.72 | |
| Mining | output | 11.63 | 11.21 | 5.66 | 5.36 | |
| Non-mining | output | 3.78 | 4.00 | 2.85 | 3.02 | |
| Real export | | 7.42 | 7.18 | 3.39 | 3.33 | |
| Real import | | 2.36 | 2.46 | 1.54 | 1.49 | |
| Real wage | | 1.59 | 1.34 | 6.60 | 6.08 | |
| ТоТ | | -0.24 | -0.40 | 4.28 | 4.01 | |











2017 2018 2019 2020 2021 2022 2023 2024 2025

— Суурь — Бодлого





Conclusion

- Our research mainly focused on the impact of implementing of the law on the economy.
- The law is able to make the Mongolian economy more stable. With the help of law, standard deviations of macro indicators are reducing.
- Our next research will be possible to assess whether budget expenditure growth, shares of budget deficit and public debt in GDP, based on the law, are appropriate for the Mongolian economy.



Example: Industries



Example: Industries



- An industry can produce multiple types of products
 - can supply to domestic market or
 - can export to foreign market
- Prices at domestic and foreign markets are vital

Example: Household

