



Risk analyses on the IMF's EFF program in Mongolia

Research team leader: Ragchaasuren Galindev Team members: Delgermaa Begz Nyambaatar Batbayar Oyunzul Tserendorj Unurjargal Davaa Tsolmon Baatarzorig

Developing PEP standard CGE models in Mongolia



Institutional Support project (2017-2019 он)







Mongolian Social Accounting Matrix (SAM)

Fundamental data for CGE models
General picture of the economy

Accounts

	Sector (22)		Commodities(25)	Agents (3)
1	Agriculture	1	Agriculture	Private/Households
2	Livestock	2	Livestock	Government
3	Domestic coal	3	Domestic coal	Rest of the world
4	Coal export	4	Coal export	Tax (3)
5	Crude Oil	5	Crude Oil	Income taxes
6	Metal Ore	6	Metal Ore	Import duties
7	Other mining	7	Other mining	Taxes on commodities
8	Food	8	Food	Factors (2)
9	Coke	9	Beverage	Labor
10	Other manufacturing	10	Tobacco	Capital
11	Electricity	11	Coke	Savings-Investment(3)
12	Water supply	12	Fuel	Private investment
13	Construction	13	Transport equipment	Public investment
14	Trade	14	Other manufacturing	Changes in inventories
15	Accommodation	15	Electricity	Total accounts (58)
16	Transportation	16	Construction	
17	Information	17	Trade	
18	Financial activities	18	Accommodation	
19	Public administration	19	Transportation	
20	Education	20	Information	142
21	Health	21	Financial activities	
22	Other service	22	Public administration	
		23	Education	
		24	Health	
		25	Other service	

Macro SAM 2014 (% of GDP)

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Labor								0.4%	44.8%					45.3%
2	Capital								0.03%	45.3%					45.3%
3	Households	43.9%	39.1%		10.4%				2.4%						95.7%
4	Government			4.7%		13.3%	1.6%	7.7%	0.3%	0.5%		0.001%			28.2%
5	Direct tax			13.3%											13.3%
6	Imp. duties										1.6%				1.6%
7	Taxes on comm.										7.7%				7.7%
8	Rest of the world	1.4%	6.3%	1.5%	0.8%						56.4%				66.4%
9	Sector										137.7%	48.1%			185.8%
10	Commodities			56.6%	13.0%					95.1%	16.7%	3.5%	28.6%	6.6%	220.1%
11	Export								51.6%						51.6%
12	Investment			19.6%	4.1%				11.6%						35.3%
13	Changes in inventories												6.6%		6.6%
14	Total	45.3%	45.3%	95.7%	28.2%	13.3%	1.6%	7.7%	66.4%	185.8%	220.1%	51.6%	35.3%	6.6%	

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Production structure (%)

Sector	Labor	Capital	Value added
Agriculture	1.3	1.7	1.5
Livestock	23.7	3.2	13.4
Domestic coal	0.3	0.5	0.4
Coal export	0.8	1.4	1.1
Crude oil	0.1	4.3	2.2
Metal ore	6.6	19.6	13.1
Other mining	0.9	1.1	1.0
Food	1.2	7.1	4.2
Coke	0.2	3.2	1.7
Other manufacturing	3.5	4.2	3.8
Electricity	1.8	1.3	1.6
Water supply	0.5	0.3	0.4
Construction	4.2	5.7	4.9
Trade	17.5	8.0	12.7
Transportation	6.2	4.7	5.5
Accommodation	1.2	0.7	1.0
Information	1.7	3.3	2.5
Financial activities	3.0	7.3	5.2
Public administration	7.3	1.8	4.5
Education	8.0	1.9	5.0
Health	3.5	0.6	2.1
Other service	6.2	18.4	12.3
Total	100%	100%	100%





BAU scenario

- 2016 2017: observed values
- 2018 2023: IMF projections for macro variables (IV review)
 - GDP
 - Fiscal variables
 - Current account balance
 - Gross national savings
- 2024 2025: the previous tendencies continue.

IMF projections

	Interest payment	Capital expenditure	Government expenditure	Current account	GDP	Private savings
2017	1,006,269	1,383,621	2,867,868	-2,616,301	25,156,798	5,911,857
2018	977,339	2,113,166	2,826,359	-2,113,166	26,414,634	6,947,020
2019	895,982	2,463,951	2,883,943	-2,323,954	27,999,445	7,643,847
2020	762,929	2,347,474	2,993,029	-2,259,443	29,343,414	8,333,527
2021	647,022	2,064,310	3,142,680	-1,448,098	30,810,599	9,489,696
2022	648,255	2,009,590	3,306,100	-421,366	32,412,735	11,506,519
2023	583,527	2,128,156	3,501,160	-484,017	34,325,103	13,627,075
2024	726,034	2,255,845	3,620,199	-493,697	36,181,878	14,312,355
2025	725,021	2,391,196	3,743,286	-503,571	38,014,395	14,804,421

BAU assumptions

- The EFF program will be implemented as planned (2017 2020).
 - Fiscal discipline will improve.
- World prices of commodities will remain high.
- Production of OT underground mine will start in 2021.

BAU assumptions

- Total factor productivity in the whole economy will increase by 1-2% each year.
- Investment in mining sector will increase
- Productivity will increase in coal and metal ore sectors.
- Other assumptions...

Commodity prices

World price of coal



• Stable after 2019

World price of copper



• Follows IMF projection

BAU: Macro variables

GDP, 2016-2025



- GDP growth is stable at about 5%
- Real GDP in 2025 will be 1.6 times that of 2016

Real GDP, trillion MNT (LHS) - Annual growth (RHS)

Investment



BAU: Fiscal variables (as % of GDP)



Debt-to-GDP ratio





- 1. Negative shock in the coal market
- 2. Government expenditure expansion
- 3. Delay in the production of OT underground mine



Impact of a negative shock in the coal market

Negative shock

World price of coal (\$/ton)



Results: Changes in macro variables, %

	2019	2020	2021	2022	2023	2024	2025
Real private consumption	-3.9	-5.3	-5.5	-5.3	-4.9	-5.1	-5.3
Real government consumption	6.7	8.8	9.0	8.4	7.0	6.9	6.9
Investment	-12.6	-15.5	-16.5	-16.6	-14.2	-14.6	-15.1
Export	-9.6	-11.5	-11.3	-9.9	-8.4	-8.3	-8.5
Import	-8.3	-9.9	-10.2	-9.7	-8.2	-8.4	-8.7
Real GDP (at market prices)	-5.2	-6.8	-6.9	-6.7	-6.1	-6.3	-6.6
CPI	-5.4	-6.6	-6.6	-6.0	-4.9	-4.7	-4.7
Real wage	-3.4	-5.0	-5.5	-5.5	-5.1	-5.1	-5.2
Employment	-1.0	-0.4	-0.1	0.0	0.1	0.0	0.0

Results: Budget deficit/GDP



Results: Debt-to-GDP ratio



Results: Production



Conclusion

There is negative effect on macro indicators, labor market, households and budget indicators.

Sectors are affected differently.



Impact of expansionary fiscal policy caused by political cycles

Government expenditure

2017-2020: EFF will be implemented

- Government salaries will not increase
- Pensions and allowances are targeted to vulnerable groups
- Fiscal expenditure will be under strict control

2021-2025: Government may increase its expenditure

- Political parties may make commitments
- Wages and pensions may increase
- Fiscal discipline may be loosened

Simulation: 3 types of expenditure will increase from 2021

Current expenditure: 20% higher than BAU

1

Capital expenditure: 15% higher than BAU

2

➢ Transfers to households: 20% higher than BAU

Results: Changes in macro variables, %

	2021	2022	2023	2024	2025
Real household consumption	1.8	1.5	1.1	0.9	0.7
Real government consumption	18.1	18.0	18.1	18.2	18.2
СРІ	0.5	0.6	0.6	0.6	0.7
Private savings	2.2	2.0	1.7	1.5	1.4
Government savings	-59.0	-66.8	-66.4	-68.2	-67.9
Investment	-7.0	-7.3	-7.0	-7.7	-8.1
Export	-0.1	-0.2	-0.2	-0.2	-0.2
Import	-0.4	-0.6	-0.6	-0.9	-1.1
Real GDP (at market prices)	-0.2	-0.5	-0.8	-1.0	-1.2
Real wage	0.1	-0.1	-0.3	-0.5	-0.7
Employment	0.03	-0.05	-0.05	-0.06	-0.05

Results: Deficit-to-GDP ratio, %



- BAU - Risk2

Results: Debt-to-GDP ratio, %



2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 - BAU - Risk2

Results: Changes in production, %



Conclusion

Household consumption and savings are promoted.

≻Government savings and total investment fall.

Economic growth is slowed down.

≻Public debt and fiscal deficit increase.

≻Government should be cautious.



Impact of OT underground mine on the economy

OT underground mine





Results: Changes in macro variables, %

	2019	2020	2021	2022	2023	2024	2025
Investment	-35.3	-20.9	-20.8	-13.6	-25.0	-27.7	-27.9
Export	1.5	1.3	-2.2	-11.3	-22.4	-23.9	-23.7
Import	-14.6	-8.9	-10.6	-11.9	-23.1	-25.0	-24.8

Real household consumption	-7.3	-4.4	-6.1	-9.4	-18.1	-19.7	-19.6
Real government consumption	9.5	5.6	6.7	10.0	20.6	23.3	23.0
СРІ	-5.8	-3.4	-4.3	-6.5	-12.7	-14.0	-13.7
Real wage	-7.0	-4.6	-4.9	-6.9	-12.2	-14.0	-14.2

Results: Real GDP (billion MNT)



Results: Government revenue (billion MNT)



Results: Deficit-to-GDP ratio (%)



Results: Debt-to-GDP ratio (%)



Results: Changes in production, %



Conclusion

≻Negative effects on macroeconomic variables.

- ➢GDP (9%) and government revenue (18%) are lower than BAU from 2022.
- ➢Deficit-to-GDP and debt-to-GDP ratios never reach the targets specified by the Fiscal Stability Law.







Thanks for attention!

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