

Revenue Management: Update of the study

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Objective

- ❖ In the previous study, the impact of the implementation of the Fiscal Stability Law was assessed
 - The Law could lessen the de-industrialization effect of mining development
 - decrease fluctuations in macroeconomic variables
- ❖ In this study, we analyze sensitivity of economic performance to the changes in some of key requirements in the FSL.
- ❖ Specifically, we relax following two key benchmark parameters in the FSL in order to determine their impact on the budget as well as on the economy: ceiling on the growth of budget expenditure and restriction on the budget revenue.

Fiscal stability law requirements

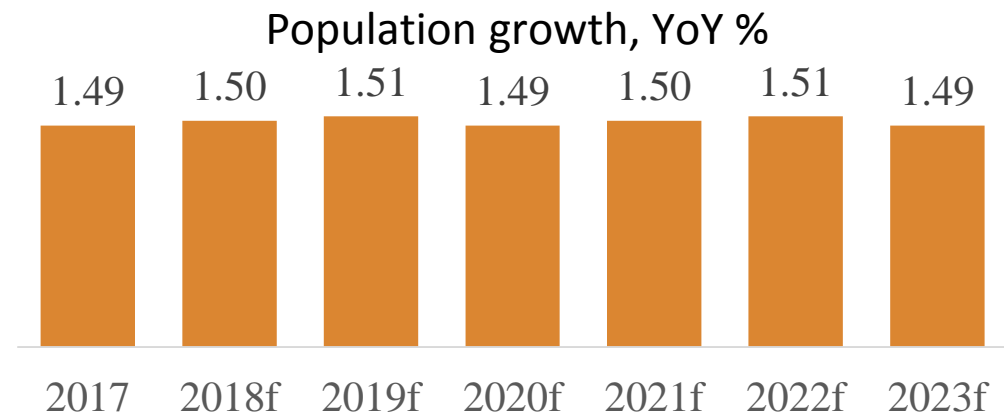
1. Total budget revenue must be calculated using an equilibrated method /using average prices of main minerals in last 20 years and in coming 3 years/
2. The budget deficit based on the equilibrated method must not exceed 2% of GDP in the same year
3. The growth rate of total expenditure must not exceed 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 past 12 years
4. The present value of government debt must not exceed 60% of GDP of the budget year

Fiscal stability law requirements

- ❖ There is no sensitivity analysis of these requirements
- ❖ There can be overlapped effects of these requirement. So which one is not important to stabilize the budget and the economy
- ❖ In this study, we relaxed only requirement 1 (ceiling on the growth of budget expenditure) and 3 (restriction on the budget revenue) to determine their impact.
 - ❖ Those requirements more reflect fiscal issues of resource dependent countries
 - ❖ The requirements on budget deficit and public debt are necessary elements for FSL. It is clear that the budget and economic performance is very sensitive to changes in these two requirements

Methodology and simulation assumptions

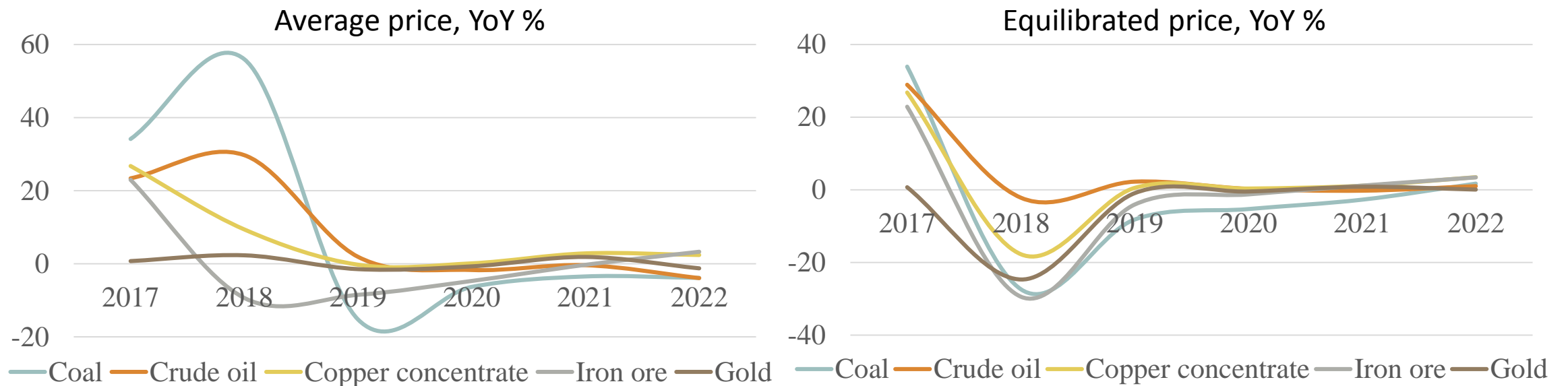
- In order to study the economic effects of implementing the FSL using an in-house Computable General Equilibrium Model (CGE).
- Population will be consistent with the IMF's forecasts
- The real GDP growth will follow the IMF's forecasts, which takes into consideration the repayments of public debt
- Main mineral commodity production levels will be the same as the previous study
- Mineral commodity prices will be based on estimates made by the World Bank and other international institutions



Simulation assumptions

Average price is the mean of the 5 commodity price forecasts made by the World Bank and other international institutions

Equilibrated price is the average of moving average price of the commodity of the last 20 years and the average price of the subsequent 3 years (including current year) forecasted



Base simulation: With all 4 restrictions

Macroeconomic variables with the implementation of all four requirements of the FSL

Macro variables, %	2018*	2019*	2020*	2021*	2022*	2023*	2024*	2025*
Inflation	5.44	7.18	4.77	4.32	6.45	3.94	2.91	2.26
Real GDP growth	6.20	6.30	4.90	5.00	5.20	5.70	5.00	4.50
Real exports growth	8.23	9.63	10.74	9.39	8.57	6.31	5.43	4.55
Real imports growth	3.38	6.27	5.76	5.61	4.73	4.44	3.87	3.25
Mining sector output growth	11.43	13.38	9.52	16.06	17.18	15.43	15.15	13.55
Non-mining sector output growth	4.71	4.26	3.42	1.52	1.91	2.89	2.16	1.90
Real wage growth	-1.55	-4.02	-0.35	-0.71	-1.11	0.70	-0.35	-0.43
Terms of trade (ToT)	1.18	3.96	-0.39	-0.69	2.19	0.42	-0.23	-0.25
Gov't spending growth	6.41	6.48	6.92	7.46	7.39	7.53	7.36	7.08

Simulation 1: No restriction on expenditure

As budget deficit is constrained to 2 percent of GDP, expenditure cannot grow at nominal GNP rate; thus, expenditures will grow at the highest possible rate within the budget deficit constraint

Macro variables %	2018*	2019*	2020*	2021*	2022*	2023*	2024*	2025*
Inflation	9.04	10.20	6.49	5.60	8.11	4.65	2.91	3.78
Real GDP growth	6.20	6.30	4.91	5.00	5.20	5.70	5.00	4.50
Real exports growth	5.75	8.78	11.30	7.12	8.84	5.97	4.77	3.79
Real imports growth	5.54	7.98	8.69	6.95	6.43	5.75	2.76	4.51
Mining sector output growth	11.32	13.75	9.02	16.83	17.02	14.34	16.53	13.02
Non-mining sector output growth	4.82	4.02	3.95	1.31	2.02	3.06	3.21	2.48
Real wage growth	-2.50	-4.73	-1.35	-0.94	-2.52	0.93	2.44	1.41
Terms of trade (ToT)	2.84	4.66	1.88	-0.69	1.19	0.42	-0.44	-1.22
Gov't spending growth	10.32	9.83	8.91	9.37	9.12	8.21	6.20	8.59

Simulation 2: No restriction on revenue

Revenues will be based on the maximum price of the price forecasts used to find the average price

Macro variables %	2018*	2019*	2020*	2021*	2022*	2023*	2024*	2025*
Inflation	6.12	7.83	7.35	6.36	5.77	3.49	3.39	2.65
Real GDP growth	6.20	6.30	4.90	5.00	5.20	5.70	5.00	4.50
Real exports growth	8.71	9.98	11.07	9.73	8.91	6.38	5.54	4.70
Real imports growth	3.18	6.04	5.58	5.41	4.54	4.39	3.79	3.15
Mining sector output growth	11.66	13.14	9.90	16.22	16.96	15.14	15.48	13.58
Non-mining sector output growth	4.61	4.33	3.29	1.51	1.94	2.95	2.12	1.90
Real wage growth	-1.49	-3.52	-0.28	-0.64	-1.31	-0.12	-0.33	-0.44
Terms of trade (ToT)	1.50	3.77	1.58	0.32	-1.00	-0.75	-0.61	-0.23
Gov't spending growth	6.41	6.48	6.92	7.46	7.39	7.53	7.36	7.08

Simulation 3: No restrictions on both expenditure and revenue

Both the budget revenue and expenditure requirements are omitted in this simulation; in other words, Simulation 3 is a combination of both Simulation 1 and 2

Macro variables %	2018*	2019*	2020*	2021*	2022*	2023*	2024*	2025*
Inflation	13.30	15.34	10.31	10.11	8.74	6.62	5.30	5.10
Real GDP growth	6.20	6.30	4.90	5.00	5.20	5.70	5.00	4.50
Real exports growth	4.24	8.21	9.15	6.70	7.25	3.62	2.51	2.54
Real imports growth	6.24	8.12	9.20	7.91	6.43	5.75	2.76	4.51
Mining sector output growth	10.50	14.05	8.11	16.79	12.00	15.40	14.72	13.06
Non-mining sector output growth	4.56	5.78	3.90	2.32	3.02	3.05	3.16	2.45
Real wage growth	-3.68	-7.11	-2.14	-1.70	-2.72	1.32	4.45	1.91
Terms of trade (ToT)	4.17	7.01	2.98	-1.25	1.28	0.59	-0.79	-1.65
Gov't spending growth	18.84	16.22	14.16	12.83	11.13	13.56	11.77	12.81

Comparison of simulations

	Mean (2018-2025)				Standard deviation			
	Base	Sim-1	Sim-2	Sim-3	Base	Sim-1	Sim-2	Sim-3
Inflation	4.66	6.35	5.37	9.35	1.57	2.43	1.82	3.45
Real GDP growth	5.35	5.35	5.35	5.35	0.61	0.61	0.61	0.61
Real exports growth	7.86	7.04	8.13	5.53	2.05	2.32	2.16	2.45
Real imports growth	4.66	6.08	4.51	6.37	1.06	1.77	1.03	1.95
Mining sector output growth	13.96	13.60	14.01	13.08	2.37	2.48	2.25	2.63
Non-mining sector output growth	2.85	3.11	2.83	3.53	1.10	1.08	1.09	1.09
Real wage growth	-0.98	-0.91	-1.02	-1.21	1.30	2.23	1.05	3.40
Terms of trade (ToT)	0.77	1.08	0.57	1.54	1.50	1.86	1.52	2.81
Gov't spending growth	7.08	8.82	7.08	13.92	0.41	1.17	0.41	2.36

Simulation 1 and 3: expenditure growth was limited by budget deficit constraint which slightly dampened the economic impact otherwise

Simulation 2 and 3: fluctuations in revenue barely impacted the economy due to the FSF

Conclusions

- FSL significantly reduces economic fluctuation. The law needs to be fully implemented and strictly adhered to
- The greatest impact on the economy was observed when expenditures were not limited – increased expenditures made the economy more destabilized and prone to fluctuations
- However, the limitation on budget revenue planning is still important and would decrease the economic fluctuations.
- The impacts of revenue fluctuations were limited due the FSF and the limitation on budget deficit; without which, the economic fluctuations would have been amplified.