

Optimal Target

- Suppose Emerging Markets choose, on average, the optimal inflation target
- Based on fiscal indicators, what would the suggested target for Brazil be?

Suggested target for Brazil is around 4%

| | | Optimal Target for a 90% Gross Debt/GDP | | | | | | | | | | |
|-------------------|-----|--|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|
| | | Revenue, %GDP | | | | | | | | | | |
| | | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 |
| Expenditure, %GDP | 30 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 | 2.1 | 1.9 | 1.7 | 1.5 |
| | 31 | 3.8 | 3.6 | 3.4 | 3.2 | 3.0 | 2.7 | 2.5 | 2.3 | 2.1 | 1.9 | 1.7 |
| | 32 | 4.0 | 3.8 | 3.6 | 3.4 | 3.1 | 2.9 | 2.7 | 2.5 | 2.3 | 2.1 | 1.8 |
| | 33 | 4.2 | 4.0 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 | 2.7 | 2.4 | 2.2 | 2.0 |
| | 34 | 4.3 | 4.1 | 3.9 | 3.7 | 3.5 | 3.3 | 3.0 | 2.8 | 2.6 | 2.4 | 2.2 |
| | 35 | 4.5 | 4.3 | 4.1 | 3.9 | 3.7 | 3.4 | 3.2 | 3.0 | 2.8 | 2.6 | 2.4 |
| | 36 | 4.7 | 4.5 | 4.3 | 4.0 | 3.8 | 3.6 | 3.4 | 3.2 | 3.0 | 2.7 | 2.5 |
| | 37 | 4.9 | 4.6 | 4.4 | 4.2 | 4.0 | 3.8 | 3.6 | 3.3 | 3.1 | 2.9 | 2.7 |
| | 38 | 5.0 | 4.8 | 4.6 | 4.4 | 4.2 | 3.9 | 3.7 | 3.5 | 3.3 | 3.1 | 2.9 |
| | 39 | 5.2 | 5.0 | 4.8 | 4.6 | 4.3 | 4.1 | 3.9 | 3.7 | 3.5 | 3.3 | 3.0 |
| | 40 | 5.4 | 5.2 | 4.9 | 4.7 | 4.5 | 4.3 | 4.1 | 3.9 | 3.6 | 3.4 | 3.2 |
| | 41 | 5.5 | 5.3 | 5.1 | 4.9 | 4.7 | 4.5 | 4.2 | 4.0 | 3.8 | 3.6 | 3.4 |
| | 42 | 5.7 | 5.5 | 5.3 | 5.1 | 4.8 | 4.6 | 4.4 | 4.2 | 4.0 | 3.8 | 3.5 |
| | 43 | 5.9 | 5.7 | 5.5 | 5.2 | 5.0 | 4.8 | 4.6 | 4.4 | 4.2 | 3.9 | 3.7 |
| | 44 | 6.1 | 5.8 | 5.6 | 5.4 | 5.2 | 5.0 | 4.8 | 4.5 | 4.3 | 4.1 | 3.9 |
| 45 | 6.2 | 6.0 | 5.8 | 5.6 | 5.4 | 5.1 | 4.9 | 4.7 | 4.5 | 4.3 | 4.1 | |

- Revenues and Expenditures were 38% and 32% according to the IMF in 2019
- If the medium-term gross debt level comes down to 90%, the suggested target would be 3.9%
- The suggested target is higher than the 2021 target of 3.5%

A 3% target would make Brazil an outlier among its peers from a fiscal perspective

Actual target X Suggested Target

| | Target (%) | | 2018 (% GDP) | | |
|--------------|------------|-----------|--------------|---------|------|
| | 2019 | Suggested | Expenditure | Revenue | Debt |
| Brazil | 4.25 | 4.2 | 38 | 31 | 87 |
| Chile | 3 | 2.7 | 25 | 24 | 26 |
| Colombia | 3 | 3.4 | 35 | 30 | 54 |
| Indonesia | 3.5 | 3.3 | 17 | 15 | 30 |
| Mexico | 3 | 3.2 | 26 | 23 | 54 |
| Phillipines | 3 | 3.1 | 22 | 20 | 39 |
| Poland | 2.5 | 2.0 | 42 | 41 | 49 |
| Thailand | 2.5 | 2.8 | 21 | 21 | 42 |
| South Africa | 4.5 | 3.8 | 35 | 29 | 62 |

- The suggested inflation target for Brazil in 2019, based on fiscal indicators from 2018, was 4.2%
- There does not seem to be room for further inflation target reductions
- A 3% target would make Brazil a clear outlier

A 3% target requires important fiscal improvements

Optimal Target
for revenues fixed at 32% of Gross Debt/GDP

| | | Gross debt, %GDP | | | | | | | | | | |
|-------------------|----|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | 70 | 75 | 80 | 85 | 90 | 95 | 100 | 105 | 110 | 115 | 120 |
| Expenditure, %GDP | 30 | 2.3 | 2.4 | 2.5 | 2.5 | 2.6 | 2.6 | 2.7 | 2.8 | 2.8 | 2.9 | 3.0 |
| | 31 | 2.5 | 2.6 | 2.6 | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.1 | 3.1 |
| | 32 | 2.7 | 2.7 | 2.8 | 2.9 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 |
| | 33 | 2.8 | 2.9 | 3.0 | 3.0 | 3.1 | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.5 |
| | 34 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6 | 3.6 |
| | 35 | 3.2 | 3.2 | 3.3 | 3.4 | 3.4 | 3.5 | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 |
| | 36 | 3.4 | 3.4 | 3.5 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 3.9 | 4.0 |
| | 37 | 3.5 | 3.6 | 3.7 | 3.7 | 3.8 | 3.8 | 3.9 | 4.0 | 4.0 | 4.1 | 4.1 |
| | 38 | 3.7 | 3.8 | 3.8 | 3.9 | 3.9 | 4.0 | 4.1 | 4.1 | 4.2 | 4.3 | 4.3 |
| | 39 | 3.9 | 3.9 | 4.0 | 4.1 | 4.1 | 4.2 | 4.2 | 4.3 | 4.4 | 4.4 | 4.5 |
| | 40 | 4.0 | 4.1 | 4.2 | 4.2 | 4.3 | 4.4 | 4.4 | 4.5 | 4.5 | 4.6 | 4.7 |

- Given high debt levels, a tremendous fiscal effort including 1) debt reduction and 2) spending reductions is necessary to sustain a 3% target

BACKUP SECTION

Data and Strategy

- Variables:
 - Gross debt, expenditure and revenue (%of GDP) from IMF
 - Inflation targets from respective central banks
- Panel data for 2005-2018 for countries with at least over 10 years of inflation targeting
- Strategy:
 - Project the inflation target on gross debt, expenditure, revenue and a constant
 - Correct for global trends by including time dummies

Results are directionally similar when excluding global trends

Optimal Target
for a 90% Gross Debt/GDP

| | | Revenue, %GDP | | | | | | | | | | |
|-------------------|-----|---------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|
| | | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 |
| Expenditure, %GDP | 14 | 3.2 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.6 | 2.5 | 2.4 | 2.4 | 2.3 |
| | 16 | 3.3 | 3.2 | 3.2 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.6 | 2.5 | 2.4 |
| | 18 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.6 | 2.5 |
| | 20 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.0 | 2.9 | 2.8 | 2.7 | 2.6 |
| | 22 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.1 | 3.0 | 2.9 | 2.8 |
| | 24 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.0 | 2.9 |
| | 26 | 4.0 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 | 3.0 |
| | 28 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 | 3.2 | 3.1 |
| | 30 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 | 3.3 |
| | 32 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 | 3.4 |
| | 34 | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.6 | 3.5 |
| | 36 | 4.6 | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 | 3.7 | 3.7 |
| | 38 | 4.7 | 4.6 | 4.5 | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 | 3.8 |
| | 40 | 4.9 | 4.8 | 4.7 | 4.6 | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 | 3.9 |
| | 42 | 5.0 | 4.9 | 4.8 | 4.7 | 4.6 | 4.5 | 4.4 | 4.3 | 4.2 | 4.1 | 4.0 |
| 44 | 5.1 | 5.0 | 4.9 | 4.8 | 4.7 | 4.6 | 4.5 | 4.4 | 4.4 | 4.3 | 4.2 | |

- Inflation targets have on average decreased over time due to global changes such as lower inflation due to globalization. Motivating the inclusion of time dummies
- Excluding time dummies does not directionally change the conclusion