

# **The Fiscal and Monetary History of Bolivia, 1952–2012**

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- Bolivia is by far the poorest and the country with some of the lowest rates of growth in GDP per capita (only Venezuela has lower)

### Average annual per capita GDP growth (1990 GK dollars)

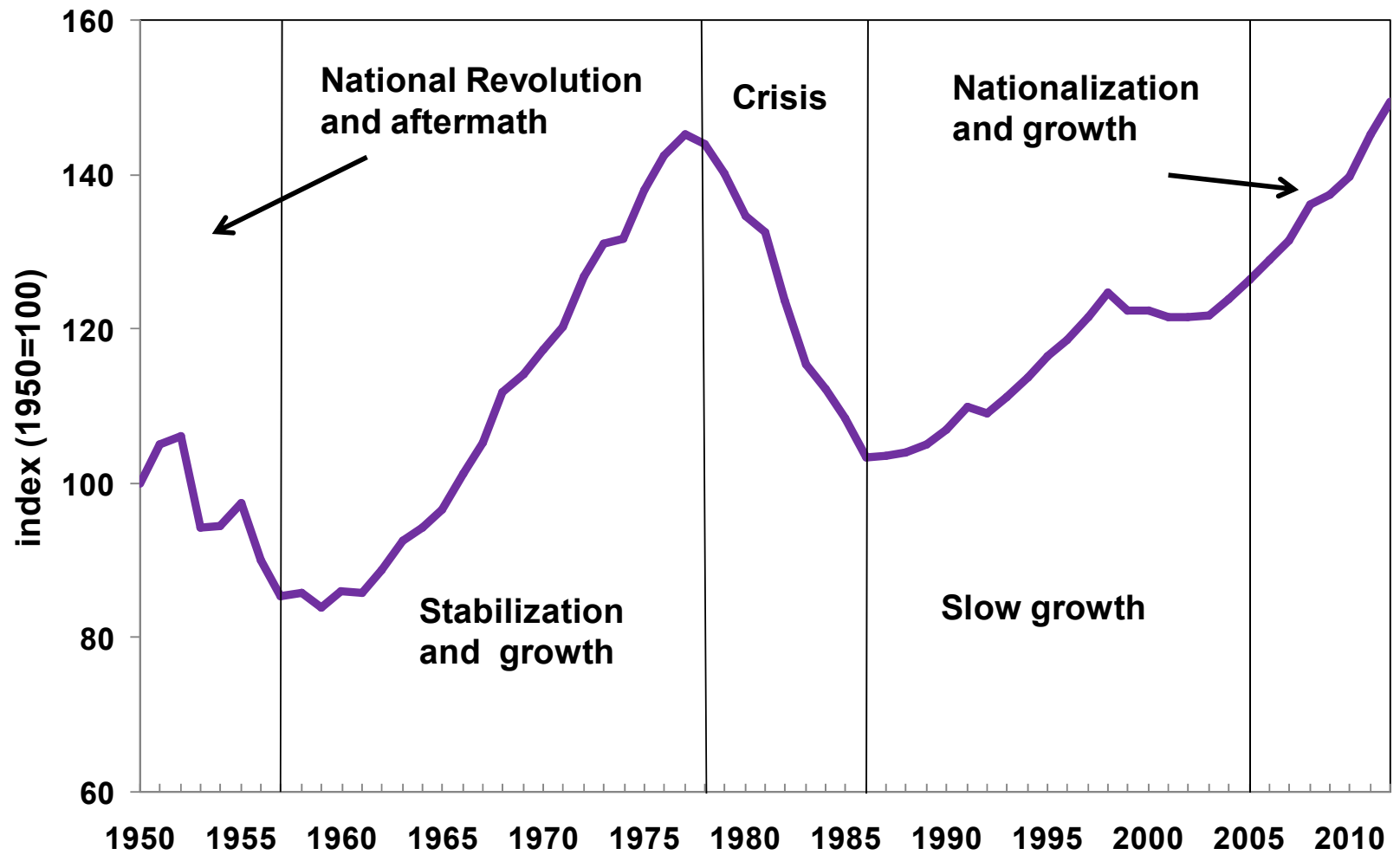
	50–59	60–69	70–79	80–89	90–99	00–10	1950–2010
Argentina	0.7	3.1	1.6	-2.2	3.0	2.3	1.4
<b>Bolivia</b>	<b>-2.0</b>	<b>3.0</b>	<b>2.3</b>	<b>-2.1</b>	<b>1.8</b>	<b>1.7</b>	<b>0.8</b>
Brazil	3.2	2.6	5.5	0.8	0.1	2.3	2.4
Chile	1.2	2.6	0.5	1.9	4.8	2.7	2.3
Colombia	1.6	1.9	3.5	3.6	1.1	2.8	2.4
Ecuador	2.0	2.2	4.0	-0.3	-0.1	2.4	1.7
Mexico	2.8	3.3	3.6	0.0	1.7	1.0	2.0
Peru	1.7	3.3	1.3	-2.2	1.3	4.0	1.6
Venezuela	3.4	0.3	0.7	-2.9	0.3	2.0	0.6

- Bolivia had also the largest drop in GDP per worker during the debt crisis of the 1980s and the highest annual rate of inflation.

## Drop in GDP per worker and Inflation

	1975 GDP per WAP (2005 USD)	Percent drop in GDP per WAP	Highest annual CPI inflation rate 1978–1990
Argentina	6,782	14.5 (1980–1985)	3,079 (1989)
<b>Bolivia</b>	<b>1,879</b>	<b>25.4 (1978–1986)</b>	<b>11,750 (1985)</b>
Brazil	5,660	13.5 (1980–1983)	2,947 (1990)
Chile	4,573	20.0 (1981–1983)	40 (1978)
Colombia	3,971	4.5 (1980–1983)	29 (1990)
Ecuador	3,798	8.0 (1981–1983)	76 (1988)
Mexico	10,899	17.3 (1981–1988)	131 (1987)
Peru	5,120	14.9 (1981–1985)	7,481 (1990)
Uruguay	5,284	17.0 (1981–1984)	112 (1990)

## Modern economic history of Bolivia: Real GDP per working age person



## **National Revolution and aftermath (1952–1957)**

- National Revolution: Nationalization of the three large tin mining companies and an agrarian reform (end of feudalistic regime).
- High inflation driven by large fiscal deficit, mostly generated by the state mining company (COMIBOL, *Corporación Minera de Bolivia*)
- Dual exchange rates: Government bought expensive dollars from exporters, sold cheap dollars to importers.
- External support needed to finance the fiscal deficit.
- United States was the major supporter.

## **Stabilization and growth (1958–1978)**

- First stabilization plan implemented in end of 1956: included the deficit of public enterprises in the government budget, established a mining royalty and new tariffs, and restructured the tax system.
- GDP per working age person grew on average 2.5 percent per year 1958–1978 (rapid growth)
- External debt increased, mainly to finance the expenditures of public enterprises.
- Period characterized rising prices of exports: tin and oil.

## **Crisis (1979–1985)**

- Large external shocks: increase in world interest rates, cutoff from borrowing on international markets, drop in export prices.
- Hyperinflation: CPI increased by 11,750 percent in 1985.
- 1979–1982: Internal political chaos coincided with the onset of high international interest rates and world recession.
- 1982–1985: Democratic opening accompanied by economic crisis.
- Government decided to honor external obligations for fear of punishment by the international creditors.

## Slow growth (1986–2008)

- New Economic Policy (NPE, *Nueva Política Económica*): Second stabilization plan: reduce inflation and external debt.
- Priority of NPE: reduction of accumulated foreign debt, both by paying it off and by renegotiating it — Paris Club, Heavily Indebted Poor Countries (HIPC) initiative, debt-equity swaps.
- Structural reforms: liberalization of goods and financial markets, capitalization (Bolivian scheme of privatization), tax reform, commercial policies in favor of exports and FDI, and fiscal decentralization (municipalities).
- GDP per working age person grew on average 1.1 percent per year — a slowdown in 1999–2003 due to credit crunch and Brazilian crisis.



## **Nationalization and growth (2006–...)**

- State playing the leading role in the economy.
- Owner of companies in strategic sectors: Oil, electricity and telecommunications.
- Extremely favorable international context (high commodity prices).
- Average rate of growth of 2.9 per year of GDP per capita (2006–2012).

# Questions

- Did government policies during the rapid growth period of 1957 through 1978 plant the seeds of the severe crisis of 1978 through 1986?
- Did the Bolivian government's policy of paying off its foreign debt after the crisis have large social costs? In particular, did this policy dampen growth during the period 1986 through 2005?

# Growth accounting

Kehoe and Prescott (2007).

$$Y_t = A_t K_t^\alpha L_t^{1-\alpha}$$

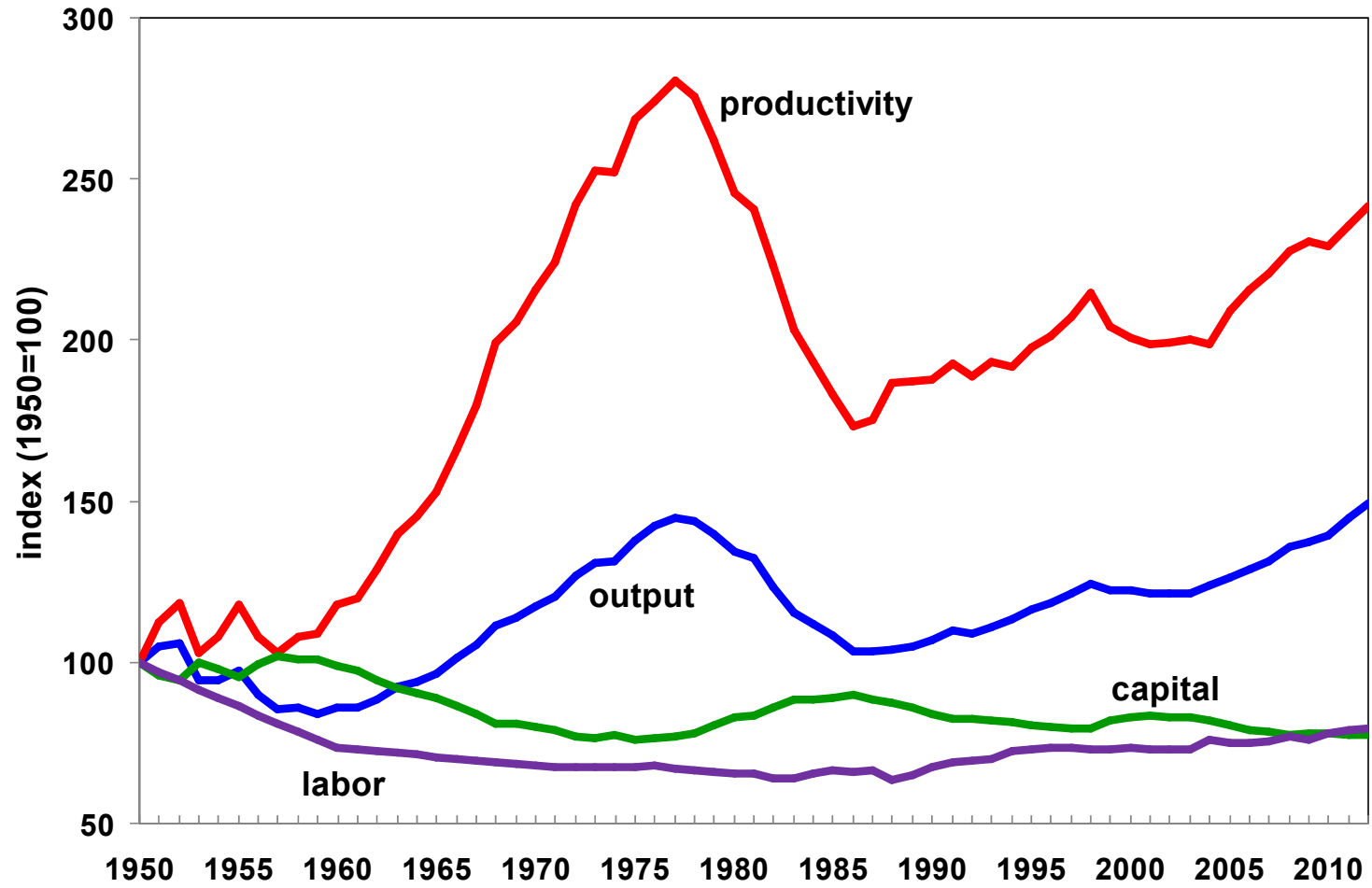
$$\frac{Y_t}{N_t} = A_t^{\frac{1}{1-\alpha}} \left( \frac{K_t}{Y_t} \right)^{\frac{\alpha}{1-\alpha}} \left( \frac{L_t}{N_t} \right)$$

$N_t$  is the number of working age (15–64 years) persons.

Advantage of this growth accounting:

On a balanced growth path,  $(K_t / Y_t)^{\alpha/(1-\alpha)}$  and  $L_t / N_t$  are constant, and growth in  $Y_t / N_t$  is driven by growth in  $A_t^{1/(1-\alpha)}$ .

## Growth Accounting for Bolivia

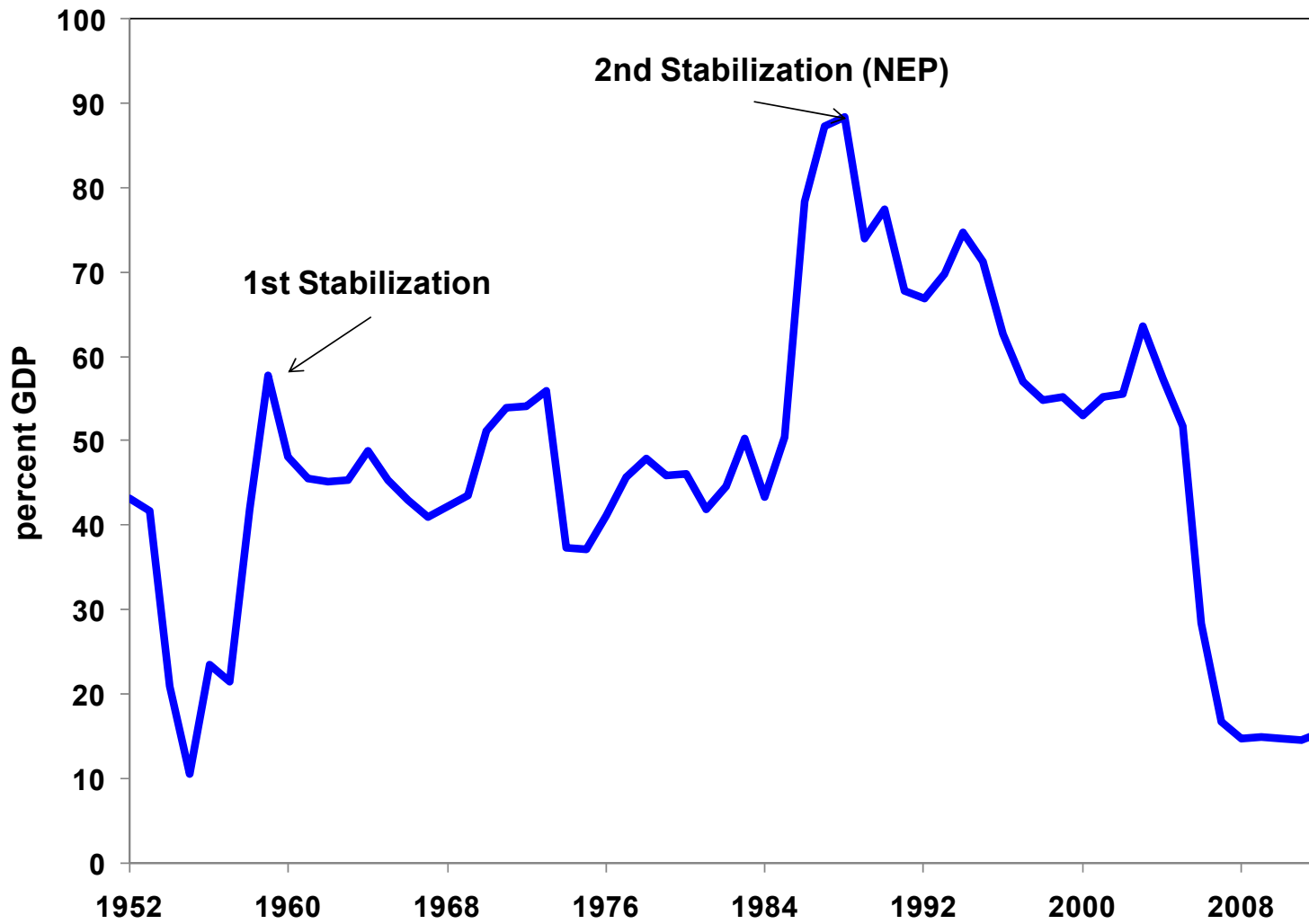


- Our goal is to relate deviations from balanced growth in Bolivia to shocks — external and internal — and to government policies.
- Notice the importance of TFP fluctuations in determining GDP.

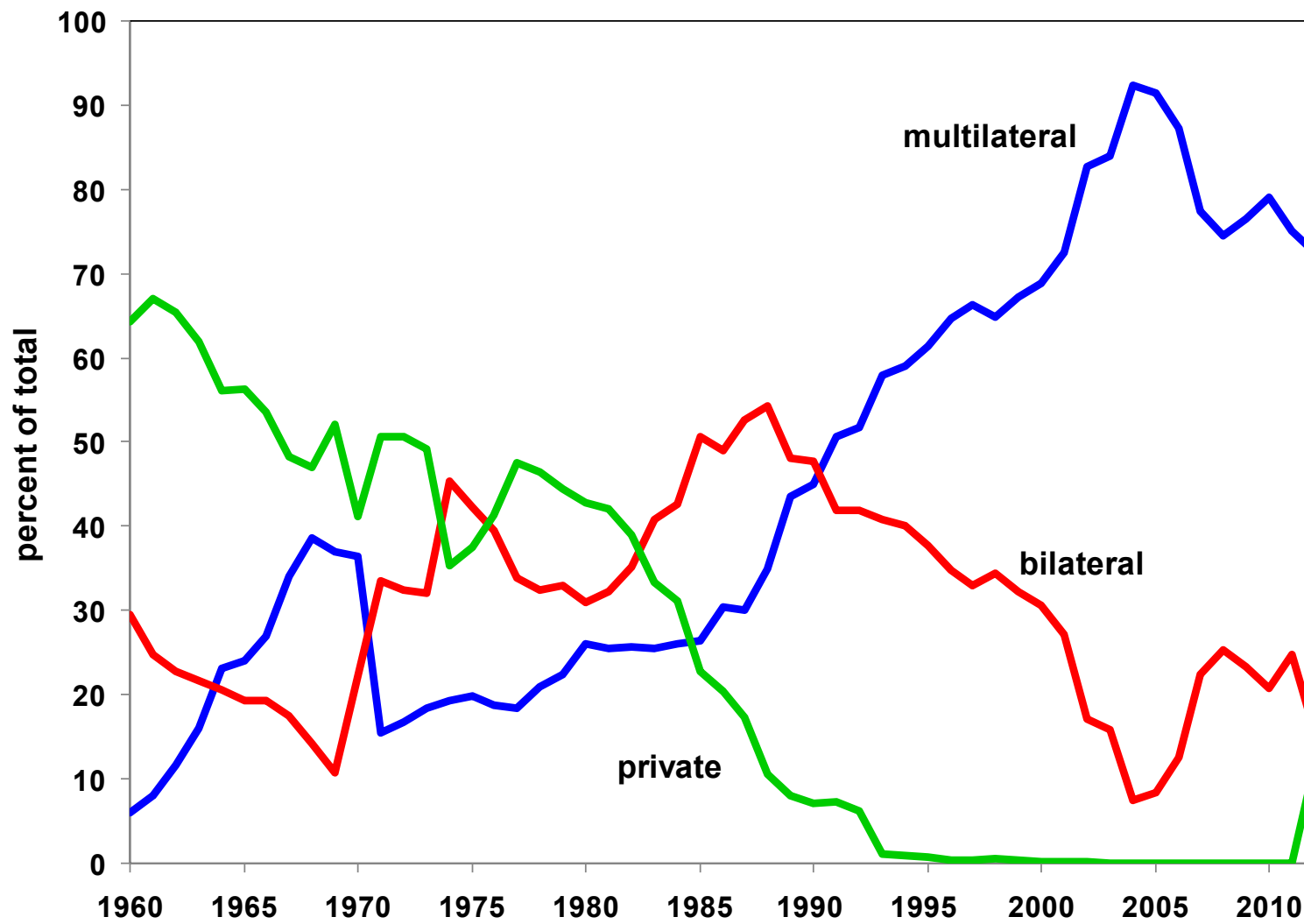
## **Debt Evolution**

- The ability of the government to borrow in domestic and foreign markets and to negotiate the payment of the debt determines the way fiscal and monetary policies interact.
- Focus on medium and long external debt.
- Debt mainly in dollars.
- Large jumps in external debt/GDP occurred as part of the two stabilization programs in 1956 and 1986.

## Evolution of the External Debt

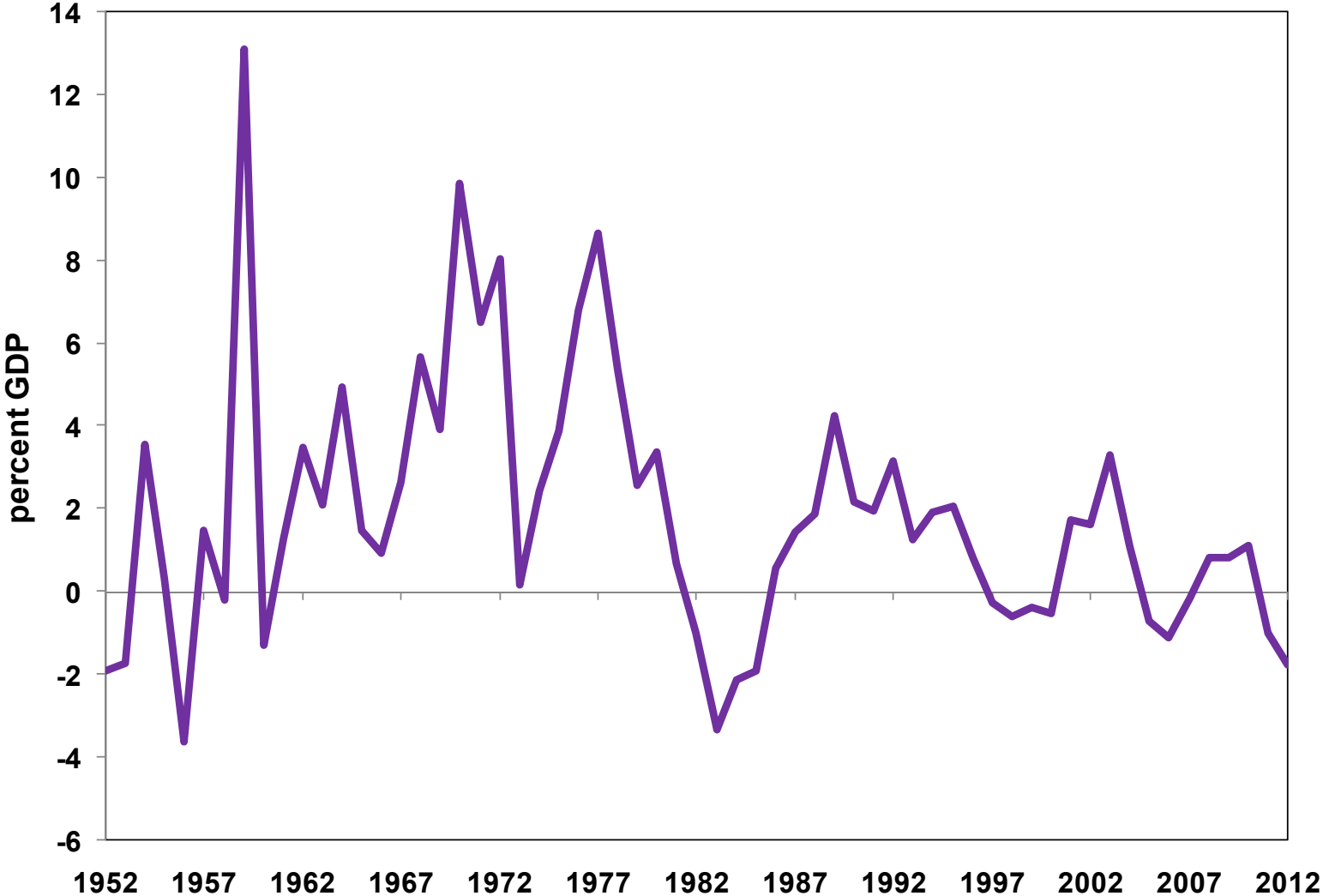


### Composition of external creditors



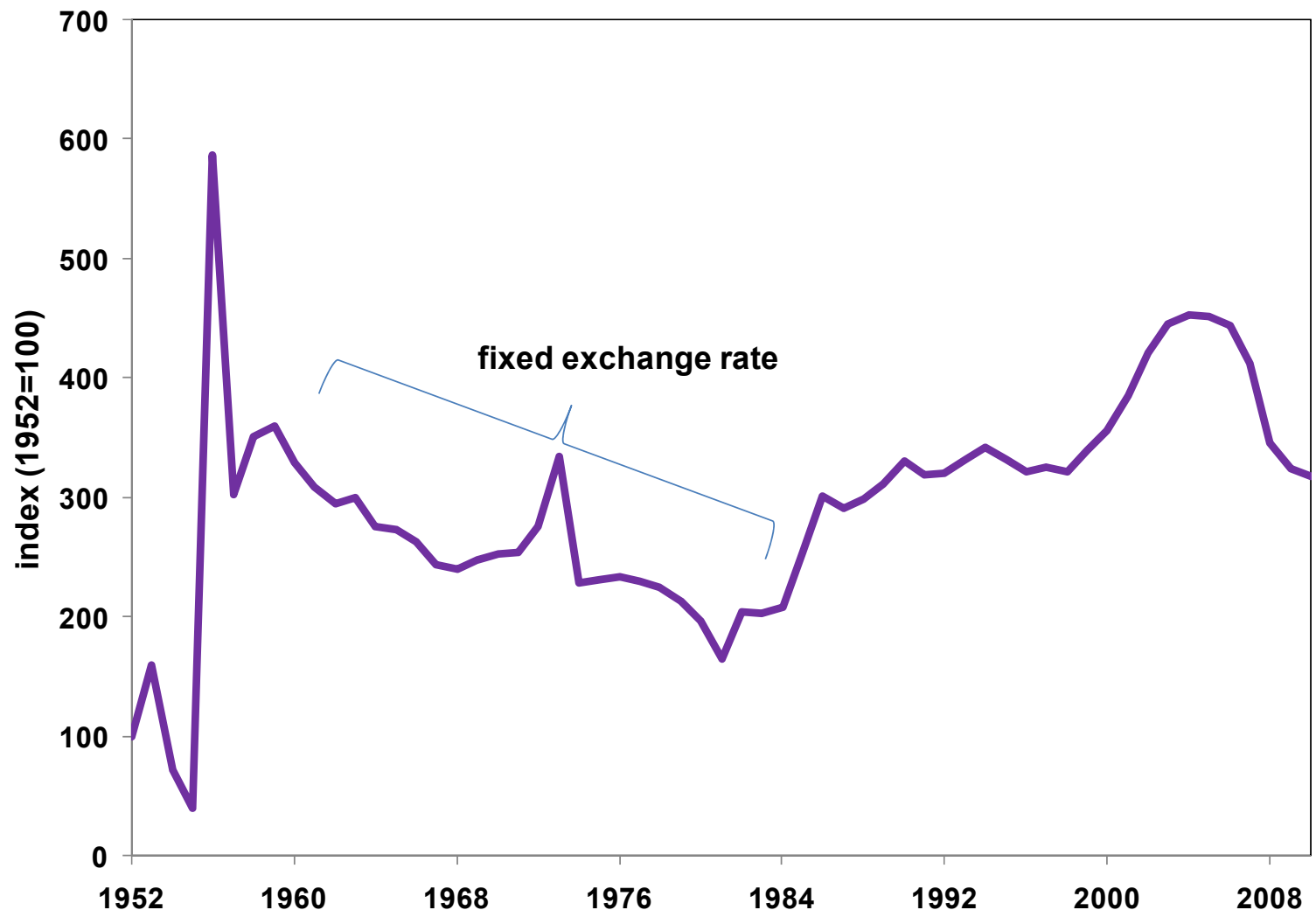


### Net transfers from external lenders

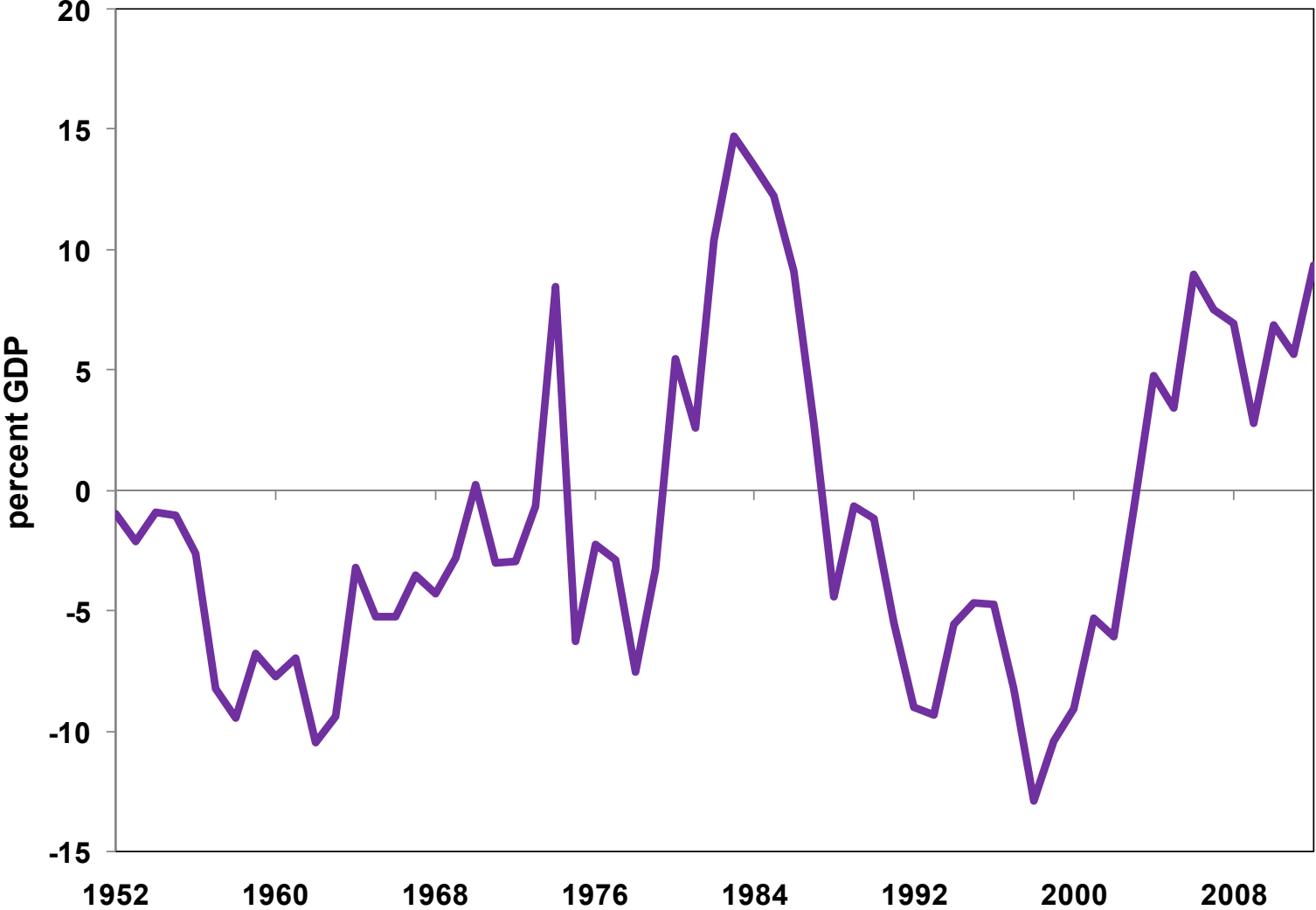


- Increases in external debt/GDP in 1956 and — to a lesser extent — 1985–1986 were due to real exchange rate depreciation.

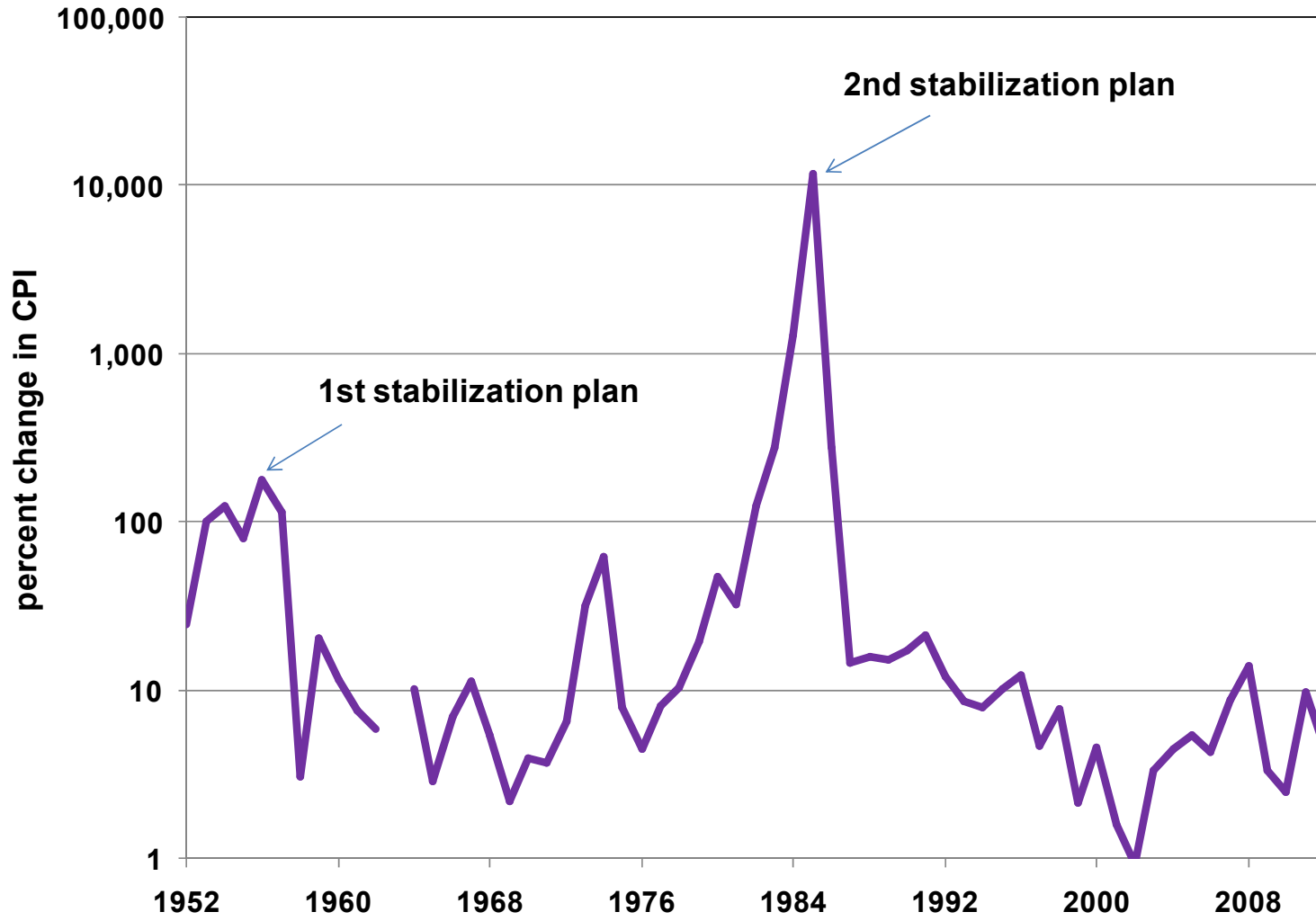
# Real exchange rate



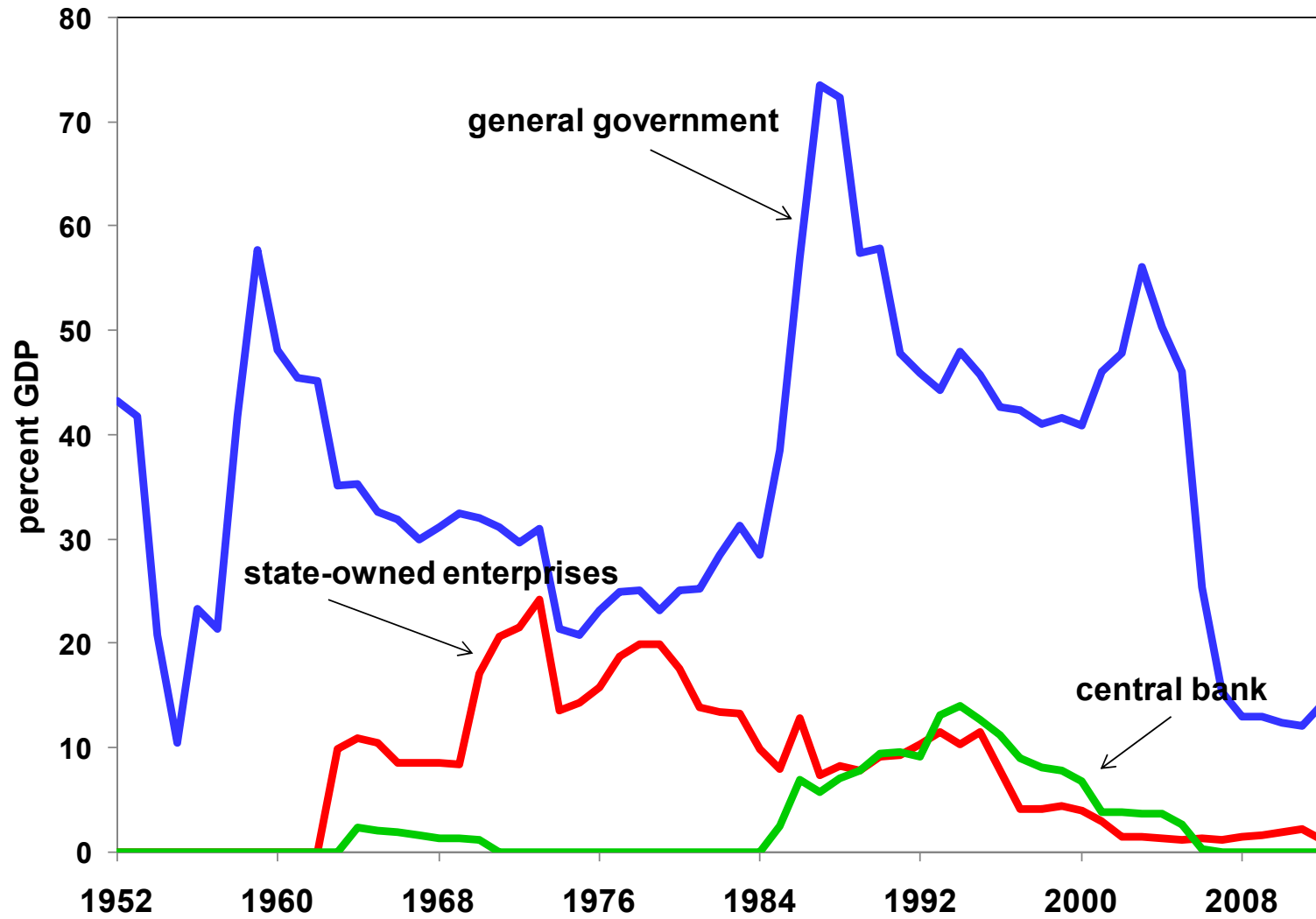
# Net exports



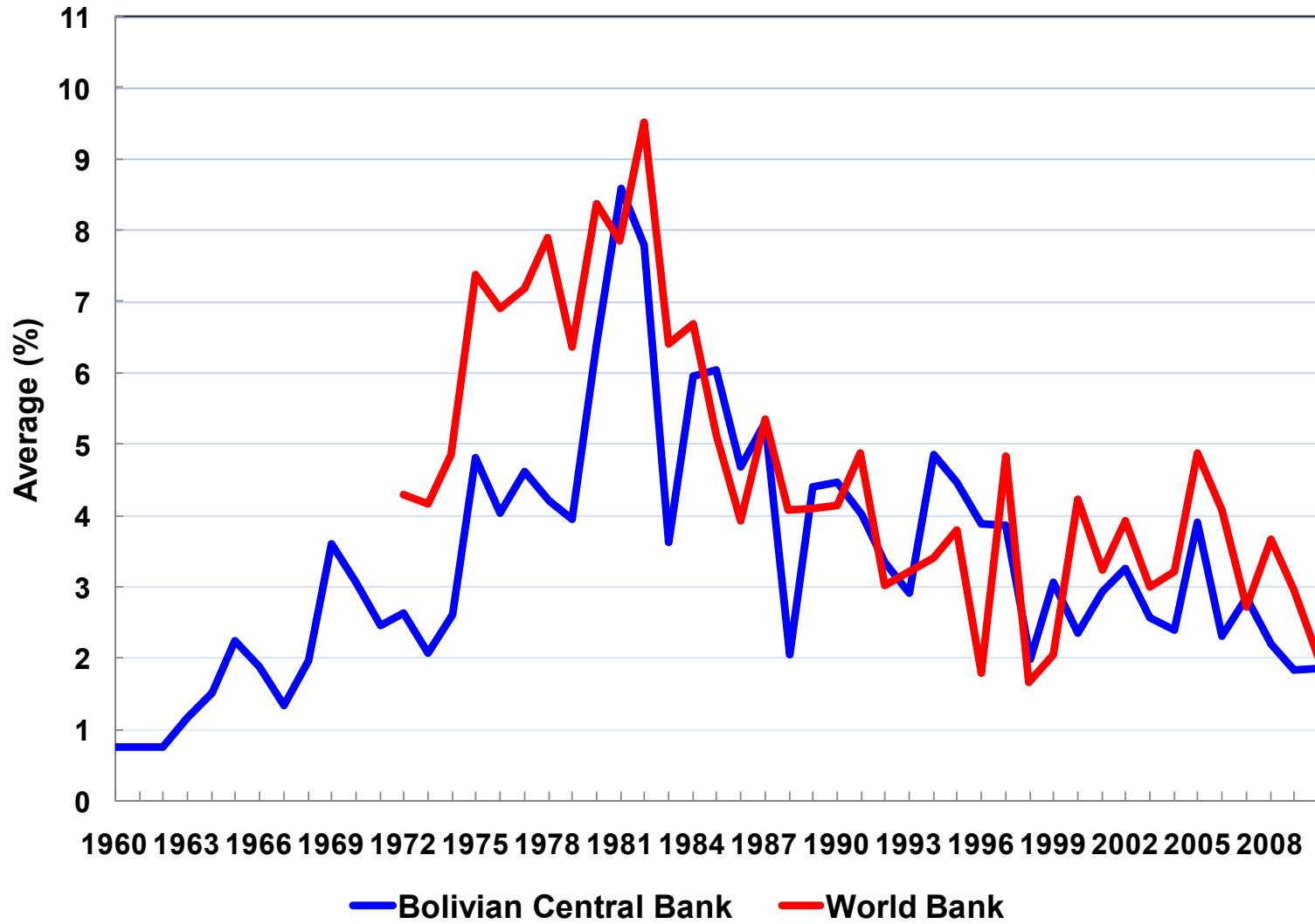
# Inflation



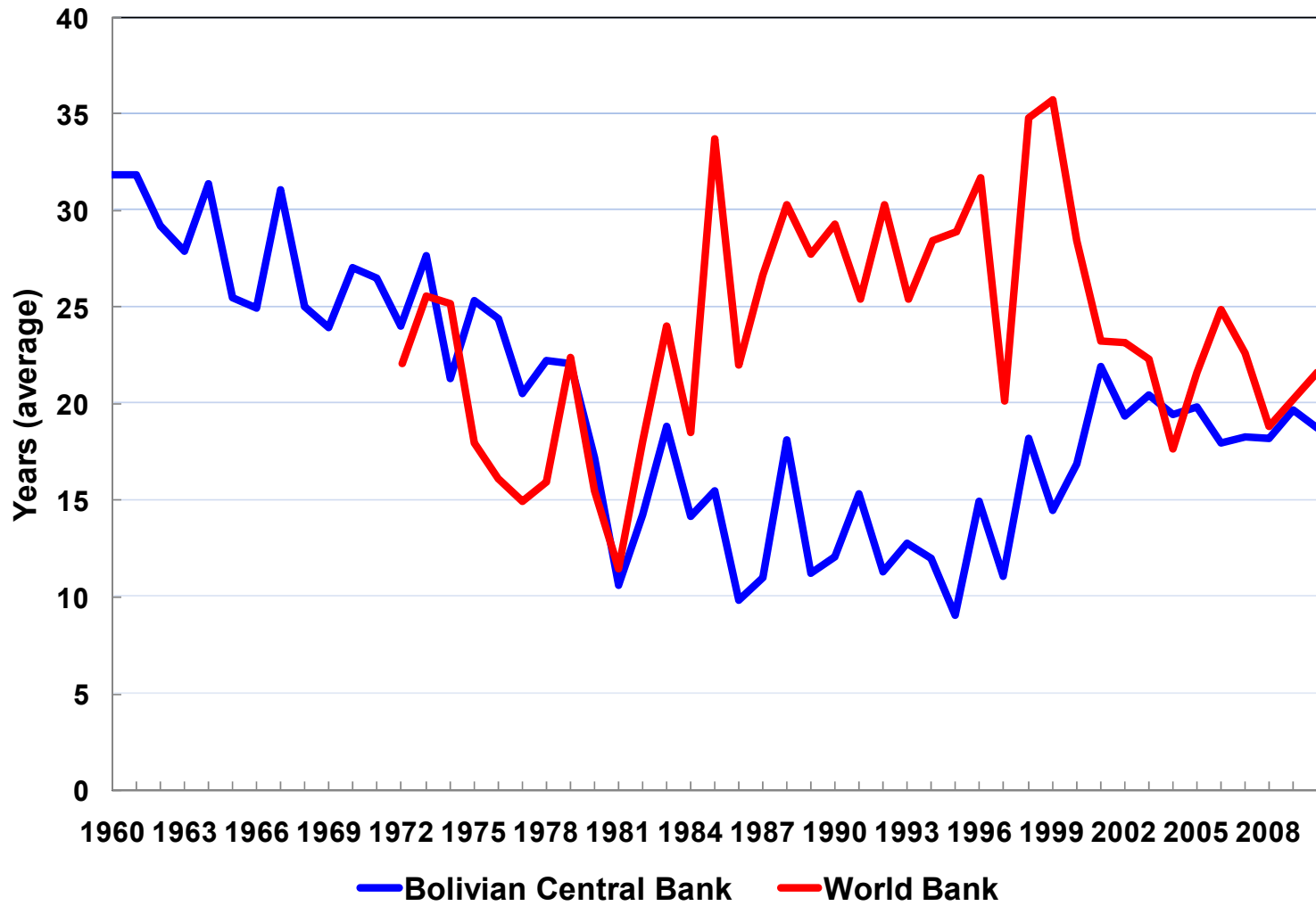
### Composition of borrowers



# Interest Rate

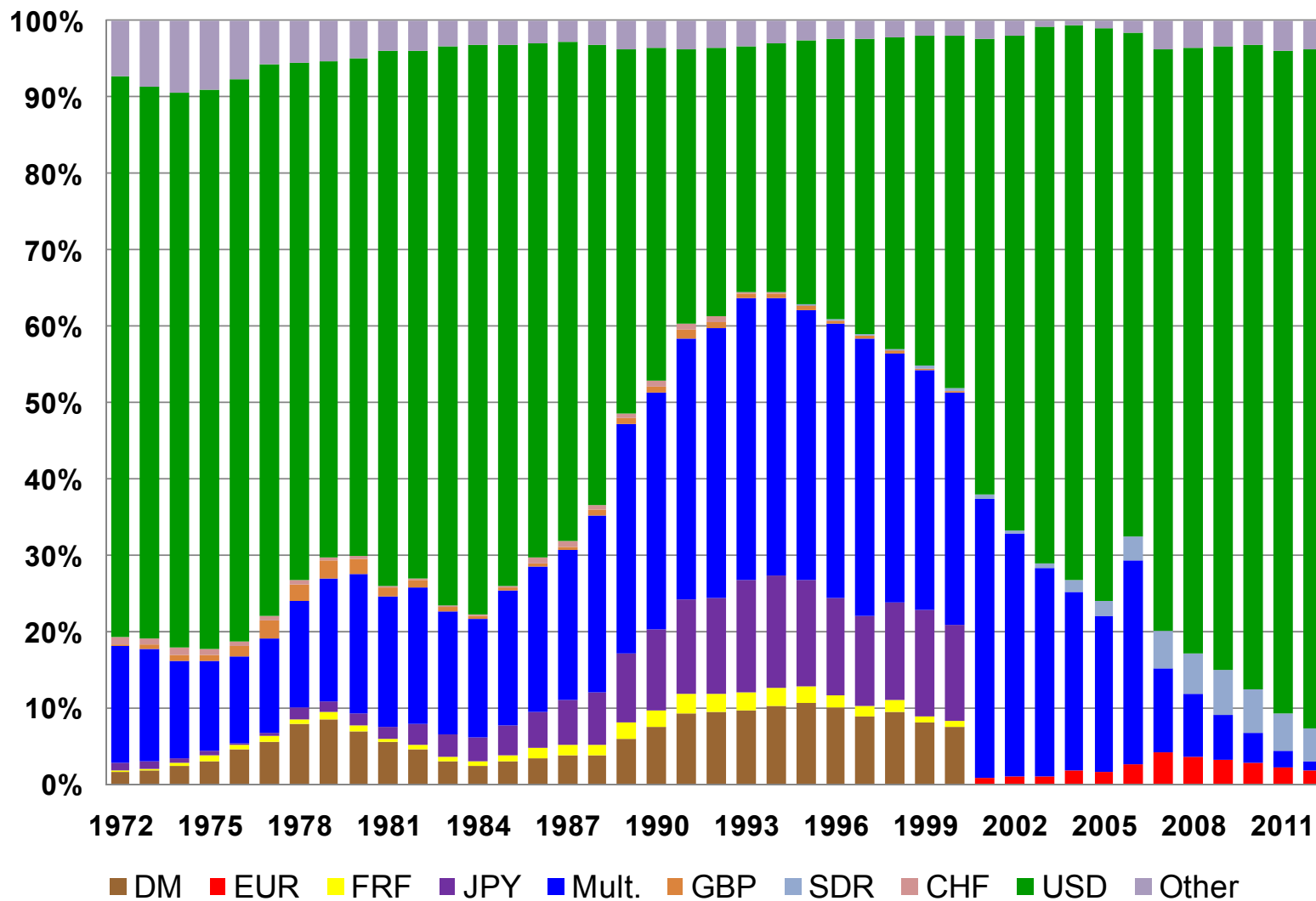


## Maturity of Debt





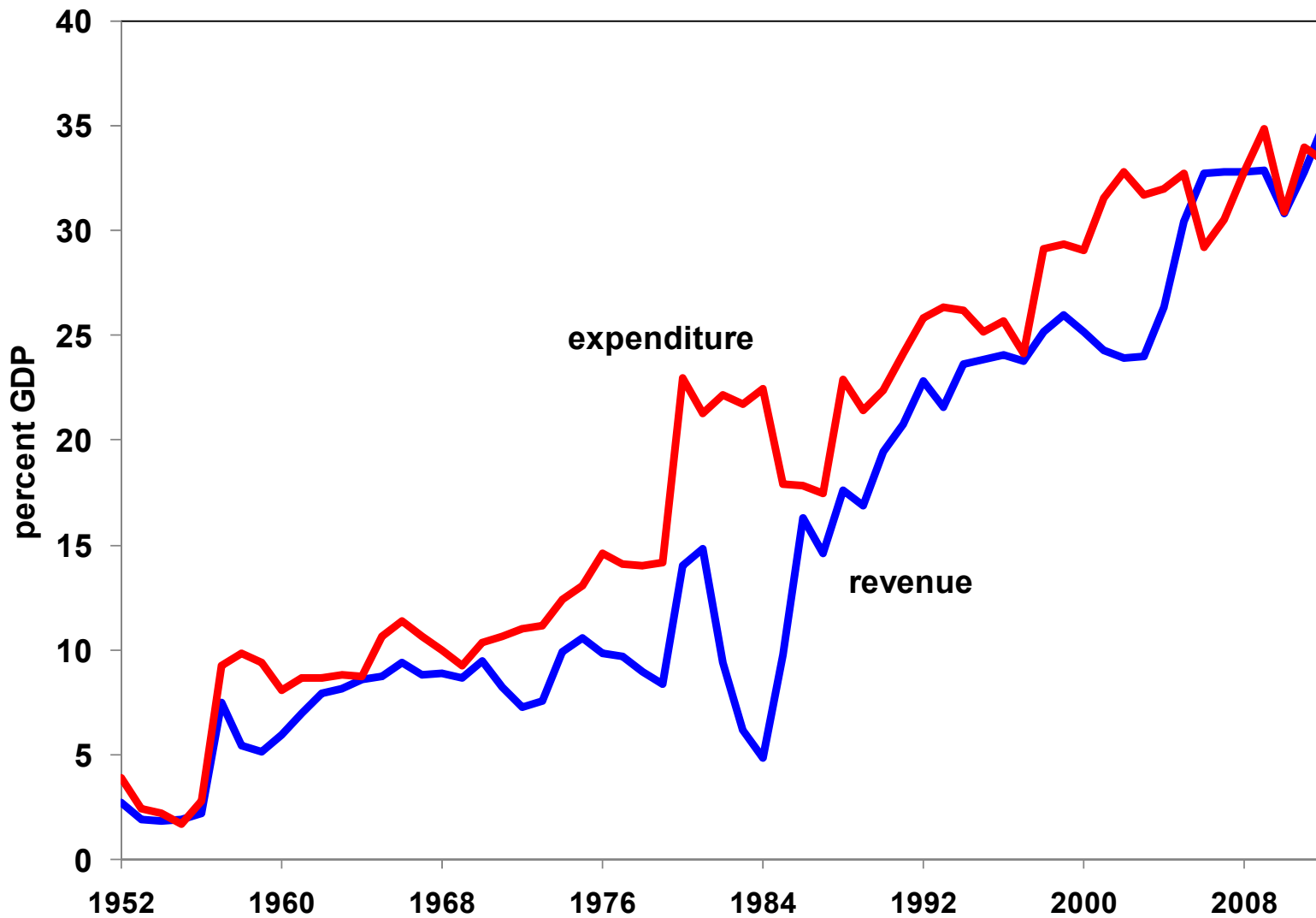
## Debt Denomination (PPG)



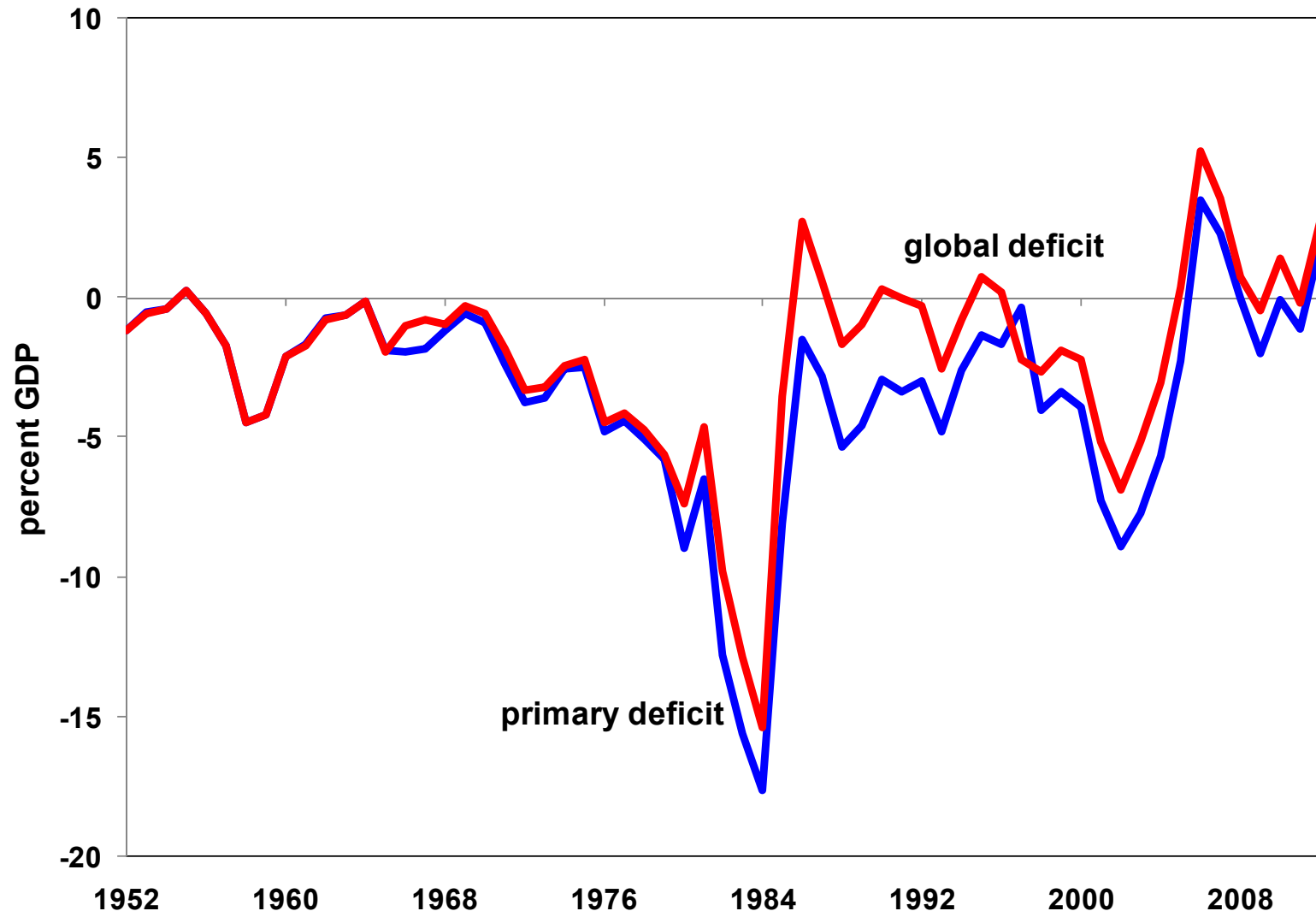
## **Fiscal Policy**

- The government ran chronic deficits.
- Data for the General Government (includes central and local governments but excludes public enterprises).
- Government revenues were highly dependent on international prices of export commodities.
- Revenues were adequate when export prices of raw materials were large. Otherwise government had only two sources: External borrowing and printing money.

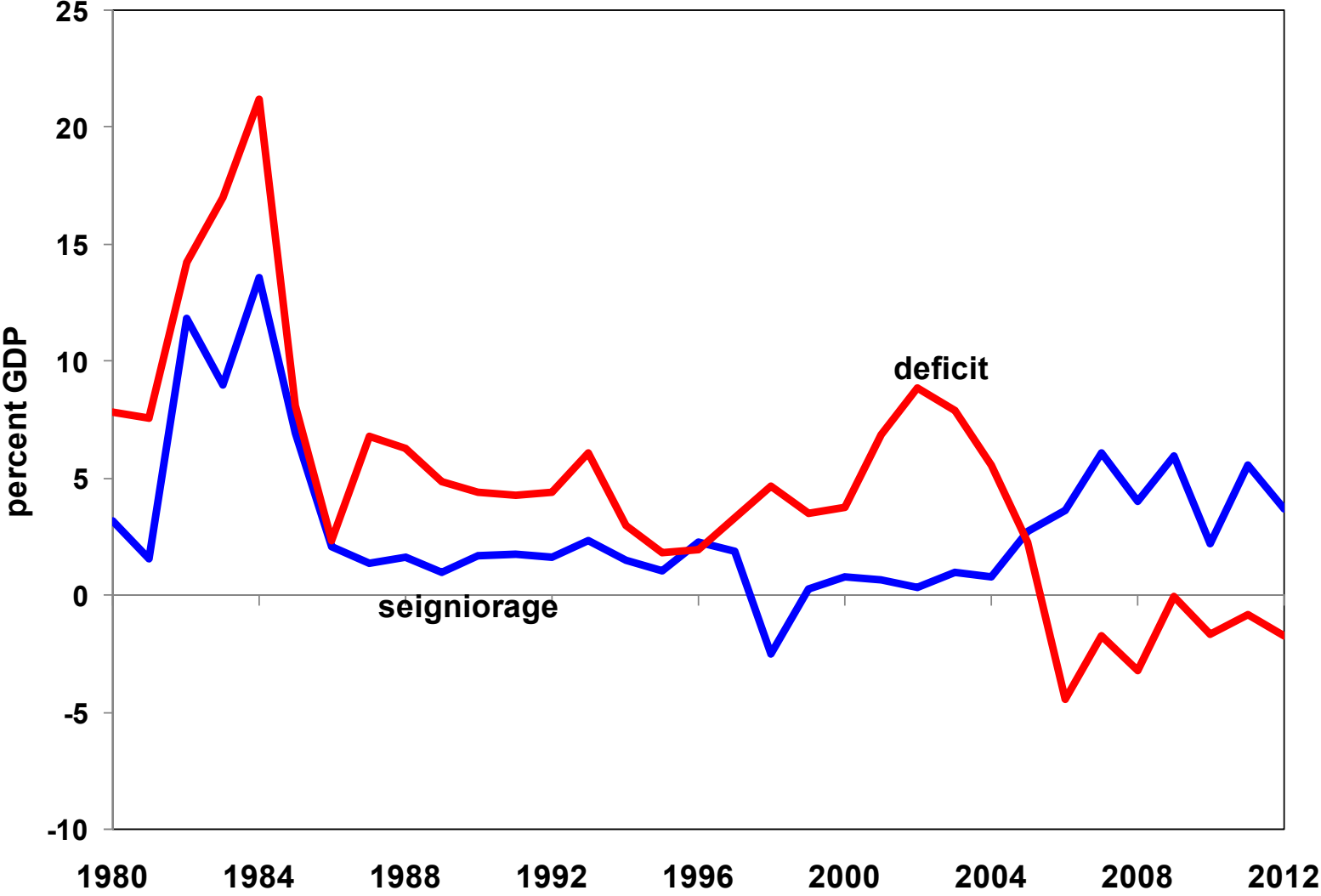
**General Government expenditure and revenue**



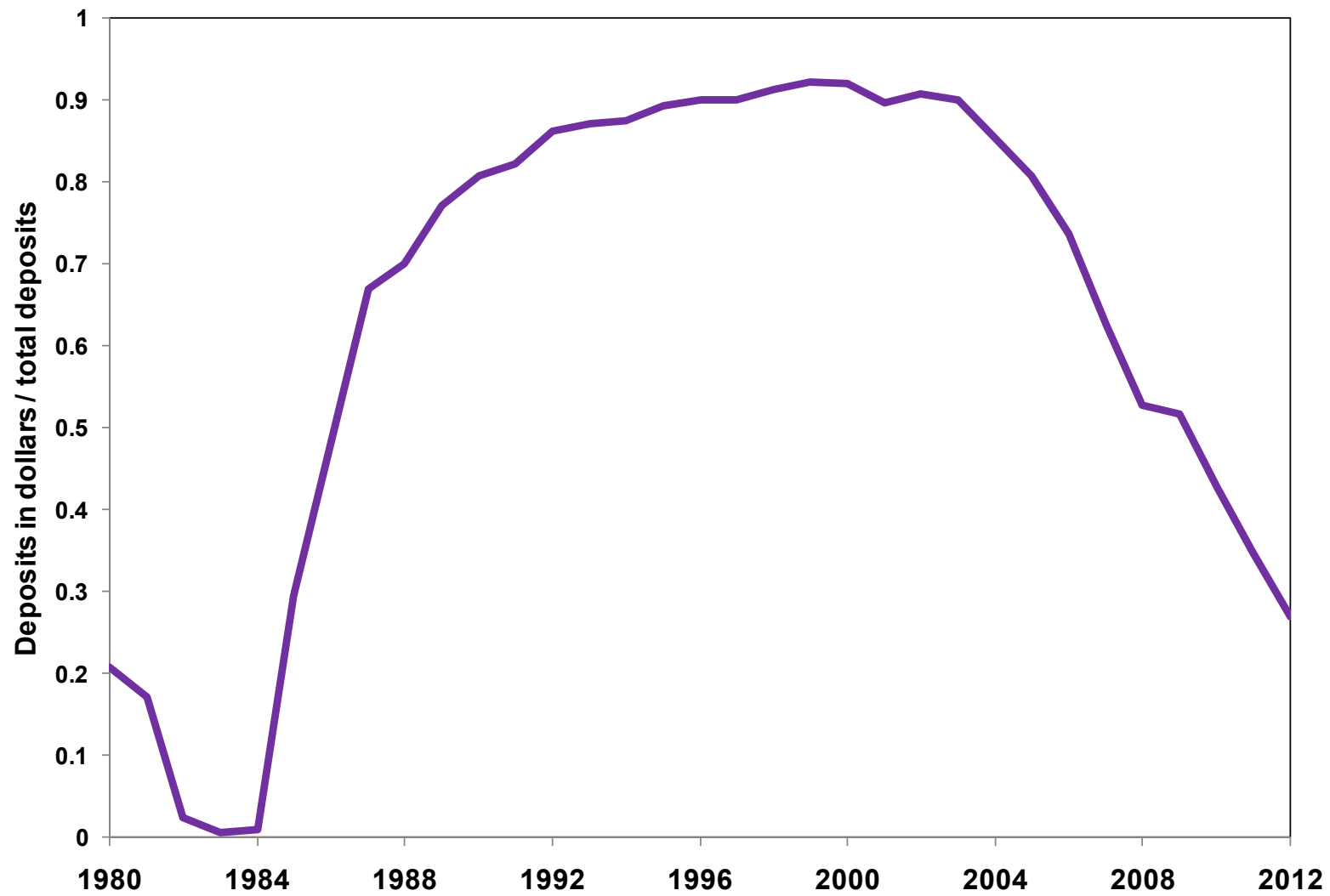
**Global and primary deficit of the General Government**



### Seigniorage and deficit of the NFPS



## Dollarization in Bolivia



## Budget Accounting Exercise

- Most debt in Bolivia is external debt denominated in dollars.
- We modified the budget equation:

$$M_t + b_t^* E_t = (DG_t + DPE_t)P_t + M_{t-1} + b_{t-1}^* r_{t-1}^* E_t$$

where  $DG_t + DPE_t$  is the deficit of the Non-Financial Public Sector.

- As we only have information of the General Government from 1952, we calculated  $DPE_t$  as a residual. In terms of GDP:

$$\xi_t (\theta_t^* - \theta_{t-1}^*) + (m_t - m_{t-1}) + m_{t-1} \left( 1 - \frac{1}{g_t \pi_t} \right) = dg_t + dpe_t + \xi_t \theta_{t-1}^* \left( \frac{r_{t-1}^*}{g_t \pi_t^W} - 1 \right)$$

## Accounting Results across Subperiods (Percent of GDP)

Period	1957–1978	1979–1985	1986–2005	2006–2012	1957–2005
<b>Sources</b>					
(1) External Debt	0.38	-0.95	0.10	0.36	0.08
(2) Money Issuing	0.22	-0.68	0.16	2.26	0.07
(3) Seigniorage	0.60	7.51	0.58	0.29	1.58
Total	1.19	5.89	0.84	2.91	1.72
<b>Obligations</b>					
(1) External Return	-3.24	-2.41	-1.28	-1.14	-2.32
(2) General Government Deficit	2.16	8.45	1.52	-1.87	2.80
(3) Public Enterprises Deficit	2.27	-0.15	0.60	5.93	1.24
Total	1.19	5.89	0.84	2.91	1.72



## **Stabilization and Growth (1957–1978)**

- Financing needs were an average of 1.2 percent of GDP and half of them were covered by seigniorage.
- External debt was also an important source of financing, covering around 32 percent of the financing needs.
- The general government deficit and the public enterprises deficit share an equal proportion and together they contributed 4.4 percentage points (p.p.) of the financing needs.
- These needs were highly balanced by negative returns to debt of 3.2 p.p.

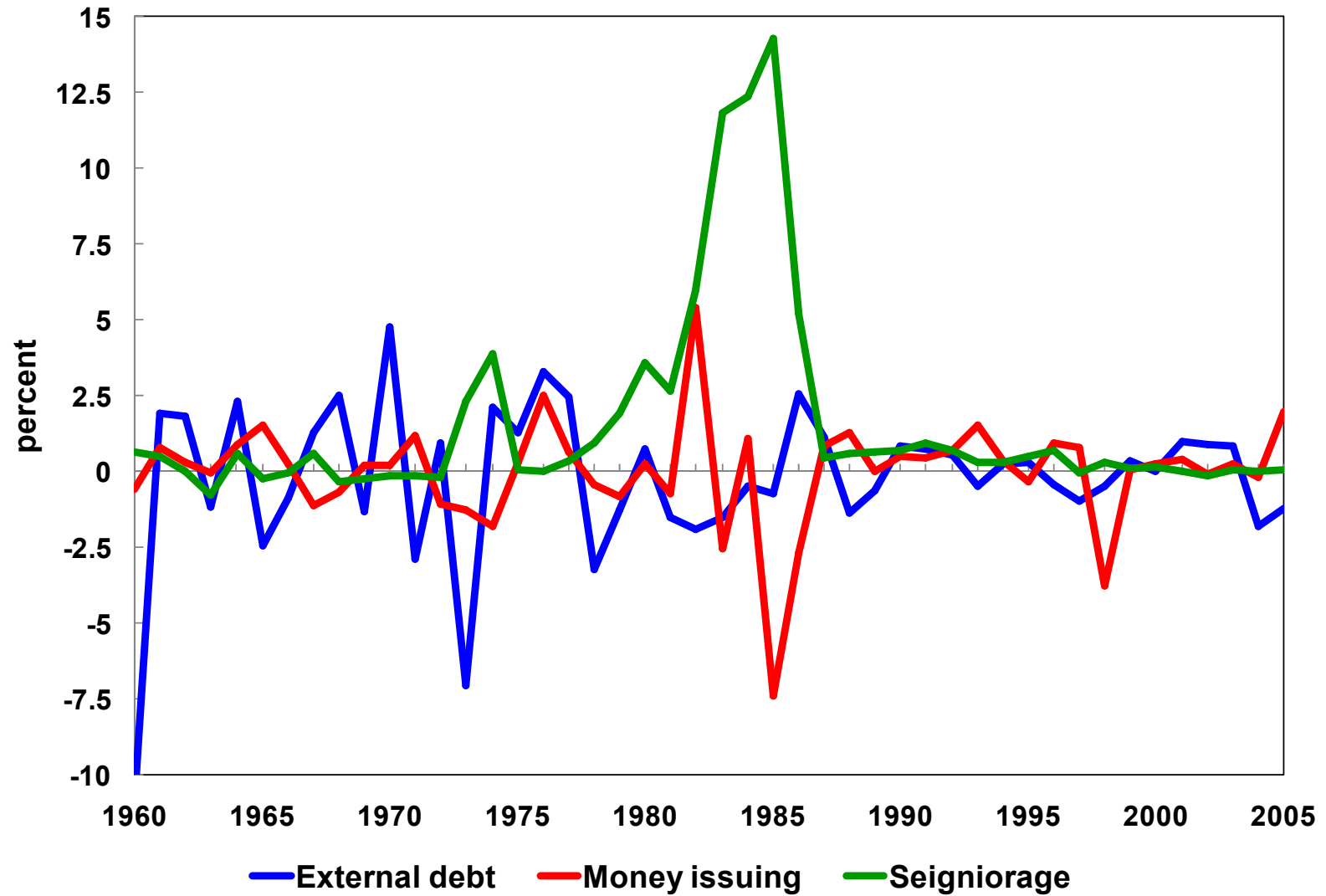
## **Crisis (1979–1985)**

- Financing needs increased up to an average of 5.9 p.p.
- The constraints on external financing made the government to finance the overall deficit with seigniorage. It increased to 7.5 p.p. on average, which is more than what was needed.
- The external debt represented a negative source of financing of approximately  $-1.0$  p.p., which is explained by the fact that the Bolivian government continued paying its external debt fearing of punishments by the international creditors.
- The main obligations came from the general government. The general government deficit represented 8.4 p.p. of the financing needs that were partially mitigated by a close 2.4 p.p. of negative returns to debt and a small surplus of public enterprises of 0.15 p.p.

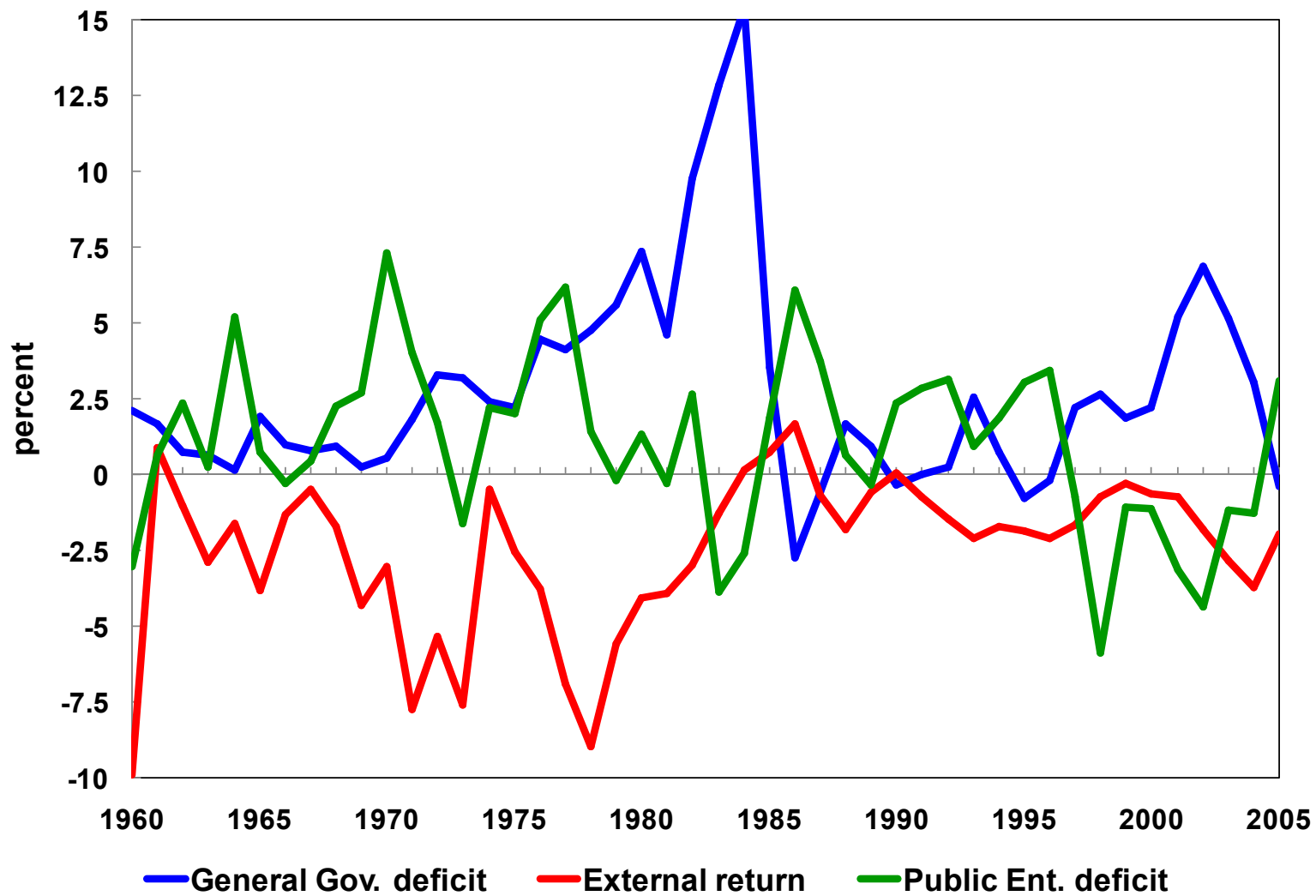
## **Slow Growth (1986–2005)**

- Displays the smallest financing needs (0.8 p.p.), because it is a period where important structural changes occurred in the fiscal balance.
- The much smaller financing needs are explained by a much smaller general government deficit of only 1.5 p.p.
- The public enterprises deficit contributed positively to the financing needs (0.6 p.p.) and that is the reason why almost all of the public enterprises were privatized or capitalized during this period.
- The main reforms that explain the reduction of the financing needs is the Tax Reform from 1986, reformulated in 1993. Government income and revenues increased, in part due to the expansion of the tax base and the implementation of the Value-Added Tax.

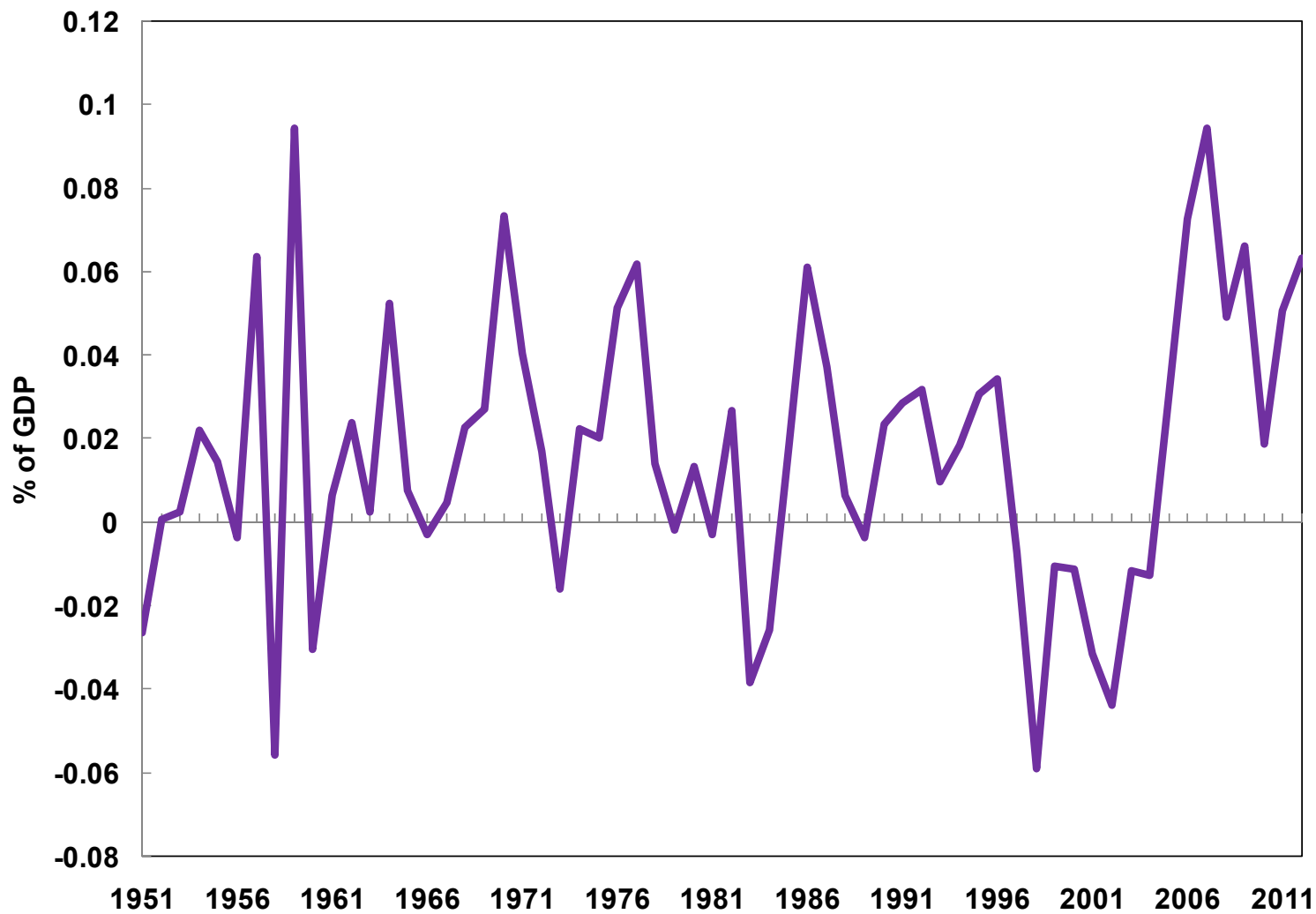
a) Sources of Government Funds



## b) Contributions to Government Obligations



Deficit of public enterprises (% of GDP)



## What is Next?

- Data collection: Archival research to obtain disaggregated data for government revenues and expenditures.
- New dataset of Bolivian public finances from 1882 to 2010 (Perez-Cajías, 2014):
  - Current revenues: direct taxes, internal indirect taxes, international trade taxes and non-tax revenues.
  - Total expenditures: general public services, public debt transactions, public order, defense, economic, education and rest of social expenditures.
- Model that could link this analysis to growth.