FOREIGN DEBT AND FINANCIAL CRISIS

EE 462 Development Macroeconomics

Semester 1/2020

Topics

- Patterns of Debt Flows to Developing Countries
- Advantages and Disadvantages of Foreign Borrowing
- Debt Indicators
- From Distress to Default
- The Debt Crisis in Low-Income Countries
- Emerging Market Financial Crises

Debt Flows to Developing Countries, 1980-2008

	1980	1990	1996	2000	2003	2008
Private debt finance	70.9	29.8	119.9	−0.4	71.8	107.9
Commercial Banks	28.7	3.2	30.7	−5.8	2.5	123.0
Bonds	1.1	1.1	49.5	17.5	26.6	10.5
Other	11.5	12.3	2.3	−4.3	−6.3	-9.3
Short-term debt flows (net)	29.5	13.2	37.4	−7.9	49.0	-16.3
Official debt finance	20.5	26.4	2.8	4.9	−14.3	-20.4
Bilateral	13.1	11.0	−10.4	−6.9	−16.0	2.4
Multilateral	7.4	15.4	13.1	11.8	1.8	18.0
Total	91.4	56.2	122.7	4.5	57.6	128.3

Sources: World Bank, *Global Development Finance 2005;* and IMF, *International Financial Statistics,* annual yearbook.

Advantages and Disadvantages of Foreign Borrowing

- Foreign borrowing can help support growth and development and yield attractive returns to lenders.
  - Prudent borrowing has been an important part of the development strategy for some developing countries.
  - Borrowing permits a country to invest more than it can save and import more than it can export.
- Some countries prefer foreign borrowing over FDI. Why might this be?
  - Think about tax holiday, ownership, etc.
- Question: How much aggregate debt can a country take before it begins to get into trouble?
  - As long as the country's loan can be serviced, the loan is *sustainable*.

Debt Sustainability

- Debt service: the amount due for principal and interest payments in a given year
- 3 measures of a country's capacity to pay: GDP, exports, and government tax revenues
- External transfer problem – the challenge of generating sufficient foreign exchange to transfer to external (foreign) creditors
- Internal transfer problem – the government's challenge of raising enough revenue from households and firms to enable the government to repay the nation's debt

Debt Indicators

- Debt/GDP (or NPV debt/GDP)
  - measures debt sustainability
- Debt/exports (or NPV debt/exports)
  - Compares total debt to the capacity to generate foreign exchange
- Debt/revenue (or NPV debt/revenue)
  - Focuses on government's ability to repay the loans (when government is the largest debtor)

Debt Indicators (2)

- Debt service/exports
  - Focuses on the amount owed in a single year relative to the export earnings
- Debt service/revenue
  - Govt's ability to generate tax revenues to make payments due in a single year
- Short-term foreign debt/foreign exchange reserves
  - The amount of debt due to be repaid within the next year compared to the available amount of foreign exchange reserves

Country's Capacity to Pay

- Debt difficulties: insolvency and illiquidity

➢ *Insolvent borrower* – lacks the net worth to repay outstanding debts out of future earnings

  ➢ Debt/GDP ratio measures overall solvency.

➢ *Illiquid borrower* – lacks the ready cash to repay current debt-servicing obligations, even though it has the net worth to repay the debts in the long term

  ➢ Debt service/exports, debt service/revenue, short-term debt/reserves are measures of liquidity.

Debt/Export Ratio (1)

- Assume all foreign saving is in the form of borrowing.
- The increase in debt in any year is:

$$\Delta D = iD + M - X$$

Where ΔD = change in the debt stock; i = average interest rate.

- Let g_x= the growth rate of export (X), and X and M grow at the same rate, and let $\Delta D = g_x D$.
- In the long run, the ratio of debt to exports can be written as:

$$D/X = a/(g_x - i)$$

Where $a = (M - X)/X$ = ratio of the current account deficits to exports.

➢ Debt/export ratio is determined by the current account deficit, the export growth rate, and the interest rate.

Debt/Export Ratio (2)

Example: Suppose a = 8%, i = 5%, and g_x = 9%.

- *Debt/Export = ?*
  - *$D/X = a/(g_x - i) = 200\%$*
- If g_x increases to 10%, what happens to *Debt/Export*?
  - *$D/X = 160\%$*
- If g_x decreases to 5.5%, what happens to *Debt/Export*?
  - *$D/X = 1600\%$*
- If $g_x - i < 0$, then $a = (M - X)/X < 0$.
  - Current account deficit turns to a surplus!

Debt/GDP Ratio (1)

- Recall $M - X = I - S_d$ (i.e. current account balance is equal to investment-saving balance).
- The increase in debt can be written as:

$$\Delta D = iD + M - X = iD + I - S_d .$$

- Suppose *v= investment share of GDP*, *s = saving share of GDP.* Then,

$$\Delta D = iD + vY - sY = iD + (v - s)Y.$$

- Assume that debt and GDP (Y) grow at the same exponential rate, g_Y.
- The long-run equilibrium ratio of debt to GDP is:

$$D/Y = (v - s)/(g_Y - i).$$

Debt/GDP Ratio (2)

Example: Suppose $v - s = 1\%$, $i = 5\%$, and $g_Y = 7\%$.

- Debt/GDP = ?
  - *$D/Y = (v - s)/(g_Y - i) = 50\%$*
- If g_Y decreases to 5.5%, what happens to Debt/GDP?
  - *$D/Y = 200\%$*
- If g_Y increases to 9%, what happens to Debt/GDP?
  - *$D/Y = 25\%$*

From Distress to Default

- When debt-service payment burdens grow, countries face some trade-offs:
  - Option 1: *Continue to raise taxes and cut spending to service debts*
  - Option 2: *Try to renegotiate the terms of the loans, or even consider outright default*
- Why would many countries avoid default?
  - Think about possibility to borrow in the future.
- Is there any situation where continued debt repayment might undermine a country's ability to make future payment?
  - **Debt overhang**: The debt creates such a drag on growth that it undermines the ability of the country to make repayments.
  - In this situation, both the debtor *and* the creditor would be better off with some *debt forgiveness*.

The 1980s Debt Crisis

- During 1970s, many developing countries, especially in Latin America, borrowed extensively and accumulated large amounts of debt.
- From 1983-1987, >$300 billion of debt repayments had be to rescheduled.
- *Causes of the Crisis*:
  - International economic shocks – high oil price, depreciation of US$ (which led to high interest rate)
  - Domestic economic policies – e.g. maintain overvalued exchange rate
  - Imprudent bank lending – banks believed that debt were "*sovereign*" (i.e. either contracted or guaranteed by govt)

Long-Term Debt, All Developing Countries, 1970-2009 (billion US$)

	1970	1983	1993	2003	2009
Stocks					
All sources	61	618	1,316	1,960	2,759
Official creditors	33	218	697	805	764
Private creditors	28	400	619	1,155	1,995
Of which, commerical banks	19	307	304	580	136
Net Flows					
All sources	6.8	50.3	72.6	4.3	
Official creditors	3.3	24.3	24.0	−14.3	
Private creditors	3.5	26.0	48.6	20.3	
Of which, commerical banks	2.4	17.9	4.7	2.5	

Source: World Bank, *Global Development Finance 2005.*

Impact on the Borrowers

- Recall from the balance of payments accounting:

  Net capital flows = $M - X = I - S_d$

- Before crisis, foreign borrowing allowed countries to finance the differences between *M* and *X*, and between *I* and S_d.
- After crisis, capital inflows were reduced, so countries had to run a surplus of *X* over *M* and of S_d over *I*, in order to service debt.
  - Increase saving → lower consumption
  - Govt needed to reduce spending and raise taxes.
  - Economic growth fell.

Mexico Before and After the 1982 Debt Crisis

	BEFORE THE CRISIS, 1977–81	AFTER THE CRISIS, 1982–86
Exports of goods and services (% of GDP)	9.6	16.9
Imports of goods and services (% of GDP)	11.5	10.6
Resource balance (% of GDP) = X-M	−2.0	6.3
Gross domestic investment (% of GDP)	24.7	20.4
Gross domestic savings (% of GDP)	22.7	26.7
Saving-investment gap (% of GDP)	−2.0	6.3
Gross domestic investment (real, average annual growth)	13.0	−12.2
GDP (real, average annual growth %)	7.6	−0.6
GDP per capita (real, average annual growth %)	5.0	−2.9
Inflation, consumer prices (average annual %)	23.7	73.2

Source: World Bank, *World Development Indicators.*

Escape from the Crises (1)

Several forms of debt restructuring and reorganization:

- Refinancing – making new loans to repay the old
- Rescheduling – altering the payment schedule to allow longer repayment and possibly low interest
- Reduction – reducing the amount actually owed either partly (*write-down*) or completely (*write-off*)
- Buybacks – the debtor buys the loan from the creditor
- Debt-equity swaps – creditors are given equity in a company in return for eliminating the debt outstanding

Escape from the Crises (2)

- Two strategies to resolve the 1980s debt crisis:

1. The Baker Plan – provided new finance to the debtors and required them to undertake major economic reforms
   - Financing from IMF, World Bank, and other official aid agencies
   - Involved stabilization and structural adjustment programs
2. The Brady Plan – renegotiated debts on a case-by-case basis (e.g. lower the face-value of debt, reduce the interest rate)
   - Debtor countries issued new bonds to banks, called Brady Bonds, to replace the old debt.
   - Also included stabilization and structural adjustment programs

The Debt Crisis in Low-Income Countries

- During 1970s and 1980s, many low-income countries borrowed heavily and were hit by the same *international economic shocks.*
- Early debt reduction strategy (1980s – early 1990s):
  - Provide new finance in returns for significant economic reforms
  - Paris Club – an informal group of individual creditor governments who provide debt rescheduling and debt reduction
- By mid-1990s, it became clear that some of the poorest and most heavily indebted countries would not be able to repay their debts.
  - *Defensive lending* – a strategy in which, as the debt payment grows, the creditors lent the debtors new money so they could repay the old debt.

The Heavily Indebted Poor Country Initiative

- In 1996, the World Bank, IMF, and other multilateral agencies launched the Heavily Indebted Poor Country (HIPC) Initiative.
  - Include 38 countries with per capita income below $900 and with NPV debt/export ratios exceeding 150%.
  - 2 key features: *debt relief* from bilateral govt creditors and *partial write-downs* of debts owed to multilateral agencies
- Eligibility for debt reduction:

  1. Countries must establish a *track record* of good economic policies, and develop Poverty Reduction Strategy Papers.

  2. When reaching the decision point, creditors provide *interim relief* (i.e. forgive debt payments when they are due)

  3. At the *completion point*, the countries receive permanent debt reduction.

Emerging Markets Financial Crises (1)

- Financial crises during mid- to late-1990s in Argentina, Brazil, Ecuador, Indonesia, Korea, Mexico, Russia, Thailand, Turkey, Uruguay, and Venezuela.
  - Compared to the debt crisis in 1980s, these crises were more intense, sudden, and caused substantial economic and financial consequences.
- The main cause was sudden reversals of international private capital flows.
  - Before crisis, these countries were receiving large amounts of private capital.
  - After crisis, they were faced with withdrawals lines of credit, demand to repay debts, withdrawals of portfolio capital.
- The reversals of capital flows led to dramatic changes in trade balances, S-I gaps, and overall economic activity.

Five Asian Economies: Private External Financing before and after the Crisis (Billion US$)

	1994	1995	1996	1997	1998
Net private flows	40.5	77.4	103.2	−1.1	−28.3
Equity investment	12.2	15.5	19.7	3.6	8.5
Private creditors	28.2	61.8	83.5	−4.7	−36.8
Commercial banks	24.0	49.5	65.3	−25.6	−35.0
Nonbank private creditors	4.2	12.4	18.2	21.0	−1.7

Note: The economies of South Korea, Indonesia, Malaysia, Thailand, and the Philippines.
Source: Institute of International Finance, Inc. "Capital Flows to Emerging Market Economies," January, 1999.

GDP Growth Before and After the Crisis

		REAL ANNUAL GDP GROWTH (PERCENT)			
COUNTRY	YEAR OF CRISIS	YEAR PRECEDING CRISIS	YEAR OF CRISIS	YEAR AFTER CRISIS	TWO YEARS AFTER CRISIS
Argentina	1995	5.8	−2.8	5.5	8.1
Argentina	2001	−0.8	−4.4	−10.9	7.0
Brazil	1998	3.3	0.1	0.8	4.4
Indonesia	1997	7.6	4.7	−13.1	0.8
Korea	1997	6.8	5.0	−6.7	10.9
Malaysia	1997	10.0	7.3	−7.4	6.1
Mexico	1995	4.4	−6.2	5.2	6.8
The Philippines	1997	5.8	5.2	−0.6	3.4
Thailand	1997	5.9	−1.4	−10.5	4.4
Turkey	1994	8.0	−5.5	7.2	7.0
Turkey	2001	7.4	−7.5	7.8	4.8
Venezuela	1994	0.3	−2.3	4.0	−0.2

Source: World Bank, *World Development Indicators 2004.*

Emerging Markets Financial Crises (2)

Questions: How did the crises happen? Are there any similarities among these countries hit by financial crises?

- Domestic economic weaknesses
  - *Liberalization of financial systems* → too rapid expansion of bank lending and other financial activities
  - *Weak and poorly enforced bank regulations*
  - *Fixed exchange rate policy*:
    - Encourage short-term capital inflows
    - Overvalued currencies → trade deficits
    - Speculation against the local currency

Emerging Markets Financial Crises (3)

- Short-term capital flows (i.e., full payment due in 1 year or less)
  - Short-term loans *appear* to pose few problems.
  - But, once there *may* be trouble, creditors quickly withdraw their lines of credits and demand immediate repayment of loans
    - Short-term debt exceeds foreign reserves => economies become *illiquid* (i.e. there may not be enough foreign currency on hand to pay all the international debts falling due).
  - Note: Longer-term loans and FDI cannot be reversed as quickly, and hence are less vulnerable to rapid withdrawals.

Emerging Markets Financial Crises (4)

- Creditor panic
  - *Rational panic*: Creditors may have the incentive to quickly withdraw their money if they believe that other investors are about to do the same thing.
  - This panic could happen under some conditions:
    - (i) high level of short-term foreign liabilities relative to foreign assets
    - (ii) some event causing other to demand repayment (e.g. fall in property prices, fall in export prices, natural disaster, event in neighboring countries).
  - Simultaneous demand for repayment by all the creditors eventually depletes reserves and leads to crisis that all would rather avoid. ➔ These crises are *self-fulfilling*.

International Financing for Selected Crisis Countries

COUNTRY	IMF COMMITMENTS		BILATERAL COMMITMENTS		TOTAL COMMITMENTS		ACTUAL DISBURSEMENTS	
	BILLION $	%GDP	BILLION $	%GDP	BILLION $	%GDP	BILLION $	%GDP
Mexico (1995)	18.9	4.6	20	5.0	38.9	9.6	27.6	6.8
Thailand (1997)	4.0	2.2	10.0	5.5	14.0	7.7	11.2	6.2
Indonesia (1997)	11.3	5.0	15.0	6.6	26.3	11.6	10.8	4.7
Korea (1997)	20.9	4.0	20.0	3.8	40.0	7.7	19.4	3.7
Russia (1998)	15.1	3.5	0	0.0	15.1	3.5	5.1	1.2
Brazil (1998–99)	18.4	2.3	14.5	1.8	32.9	4.1	17.5	2.2
Turkey (1999–2002)	33.8	17.0	0	0.0	33.8	17.0	23.1	11.6
Argentina (2000–01)	22.1	7.8	1.0	0.4	23.1	8.1	13.7	4.8
Uruguay (2002)	2.7	14.5	1.5	8.0	2.7	14.5	2.2	11.8
Brazil (2001–02)	35.1	6.9	0	0.0	35.1	6.9	30.1	5.9

Source: Nouriel Roubini and Brad Setser, *Bailouts or Bail-Ins? Responding to Financial Crises in Emerging Economies* (Washington, DC: Institute for International Economics, 2004).

Stopping the Panic

There are four basic options.

1. Government can try to convince foreign creditors and citizens to stop withdrawing funds and even supply new funding.
2. Government can try to increase the supply of foreign exchange by borrowing from official sources (such as IMF or World Bank).
3. Government can try to stop the creditor rush for repayment by restructuring foreign debts to be paid over longer periods of time.
4. Government can do nothing and let the panic run its course.

Lessons from The Crises

- These crises serve as "cautionary tales" about rapid financial liberalization and the difficulties in building strong institutions in emerging markets.
- They reveal the vulnerabilities of relying on a fixed exchange rate regime.
- There are clear differences between FDI & long-term capital and short-term capital.
- Vulnerability to crises can be reduced by building up foreign exchange reserves.
- The severity of the crisis can be affected the operations of international financial markets and the immediate reactions by the official international community.