

Lecture Four

Exchange Rate Policies and Crisis

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Outline

1. Exchange Rate Regimes and Trilemma
2. Forecasts and Policy in Practice
3. Currency Crisis in History
4. Currency Crisis Today

The Nominal Anchor

- In the long run, all nominal variables – the money supply, interest rate, price level, and exchange rate – are interlinked.
- If a nation's economic policy is the desire to **keep inflation within certain bounds**, the policy makers be subject to (or subject themselves to) **some kind of constraint in the long run**. Such constraints are called **nominal anchors** because they attempt to tie down a nominal variable that is potentially under the policy makers' control.

Three Main Anchors

- **Exchange rate target:** Implication of relative PPP

$$\pi = \frac{\Delta E}{E} + \pi^*$$

- **Money supply target:** Equilibrium of money market

$$\pi = \mu - g$$

- **Inflation target plus interest rate policy:** the Fisher effect and RIP

$$\pi^e = i - r^*$$

Choice of Nominal Anchors in Practice

- One study found that the use of **explicit targets** grew markedly in the 1990s, replacing regimes in which there had previously been no explicit nominal anchor. The number with exchange rate targets increased from 30 to 47. The number with money targets increased from 18 to 39. The number with inflation targets increased most dramatically, almost sevenfold, from 8 to 54.
- Many countries had **more than one target in use**: in 1998, 55% of the sample announced an explicit target (or monitoring range) for more than one of the exchange rate, money, and inflation. As of 2010, there were still more than 50 inflation-targeting countries, and there were more than 80 countries pursuing some kind of exchange rate target via a currency board, peg, band or crawl type arrangement.

Conflict of Policy Goals

Suppose the Central Bank has three potential policy goals:

- Fixed exchange rate:

$$E^e = E$$

- International capital mobility:

$$\frac{E^e}{E} - 1 = i - i^*$$

- Monetary policy autonomy:

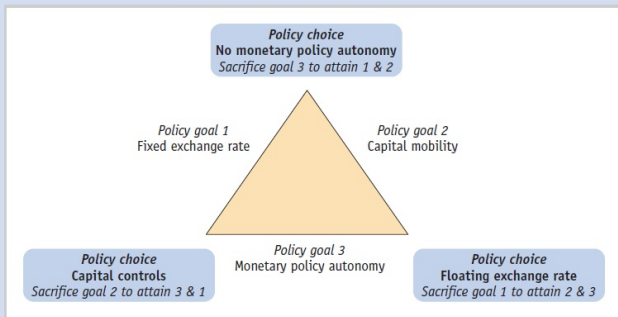
$$i \neq i^*$$

They are mathematically impossible to hold simultaneously!

Trilemma

The trilemma, one of the most important ideas in international macroeconomics, tells us that we cannot have all three goals at once.

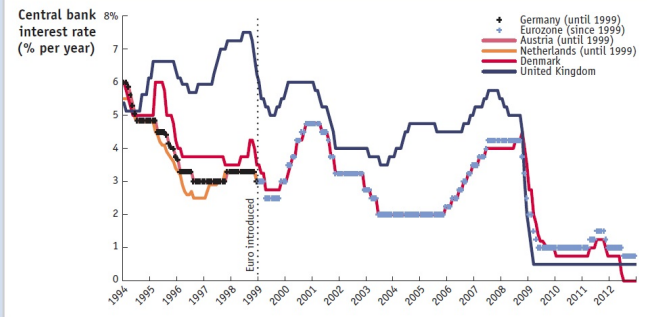
FIGURE 4-16



The Trilemma Each corner of the triangle represents a viable policy choice. The labels on the two adjacent edges of the triangle are the goals that can be attained; the label on the opposite edge is the goal that has to be sacrificed.

Trilemma for Denmark and UK

FIGURE 4-17



The Trilemma in Europe The figure shows selected central banks' base interest rates for the period 1994 to 2012 with reference to the German mark and euro base rates. In this period, the British made a policy choice to float against the German mark and (after 1999) against the euro. This permitted monetary independence because interest rates set by the Bank of England could diverge from those set in Frankfurt. No such independence in policy making was afforded by the Danish decision to peg the krone first to the mark and then to the euro. Since 1999 the Danish interest rate has moved almost exactly in line with the ECB rate. Similar forces operated pre-1999 for other countries pegging to the mark, such as the Netherlands and Austria. Until they joined the Eurozone in 1999, their interest rates, like that of Denmark, closely tracked the German rate.

Sources: Websites of the central banks.

Three Methodologies of Forecast

- 1 **Economic fundamentals according to theories.** Example: “The exchange rate will depreciate because a looser monetary policy is expected.”
- 2 **Political shocks.** Example: “The exchange rate will depreciate because a conflict with a neighboring state raises the probability of war and inflation.”
- 3 **Technical methods.** Example: “The exchange rate has hit this level three times this year but never gone further; it will not go further this time.”

Exchange Rate Forecasts in Practice

- A recent survey of U.K. forex traders shows that one-third described their trading as “technically based”, and **one-third** said their trades were “fundamentals-based”; others were jobbing or trading for clients.
- Do you believe exchange rate movements accurately reflect changes in the fundamental value?
 - Within one day: fully 97% of the traders responded no and only 3% yes.
 - Within six months, 58% responded yes.
 - **more than six months, 87% thought that changes reflected fundamentals.**

News: FOMC Press Conference June 19, 2019

What are the main factors influencing FED's decision of monetary policy?



SOURCE: TRADINGECONOMICS.COM | FEDERAL RESERVE

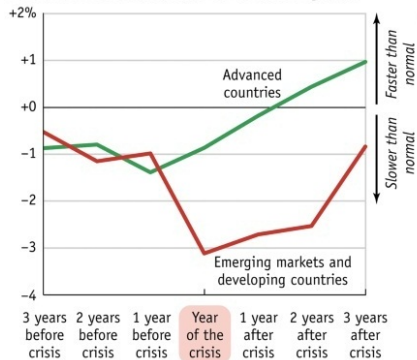
Note: United States Fed Funds Rate.

What is the Currency Crisis?

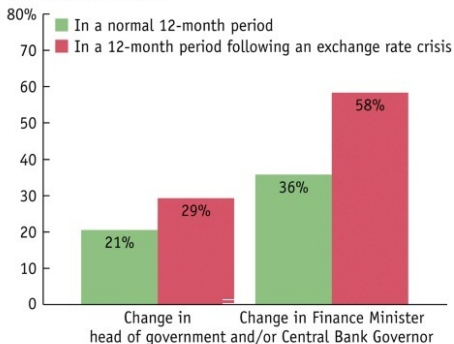
- A simple definition of an exchange rate crisis, or currency crisis, would be a “big” depreciation that occurs after a peg breaks.
- In practice, in an advanced country, a 10% to 15% depreciation might be considered large. In emerging markets, the bar might be set higher, say, 20% to 25%.
- The currency crises can occur in advanced countries as well as in emerging markets and developing countries. The magnitude of the crisis, as measured by the subsequent depreciation of the currency, is often much greater in emerging markets and developing countries.

Economic and Political Costs of Currency Crisis

Deviation from normal rate of economic growth

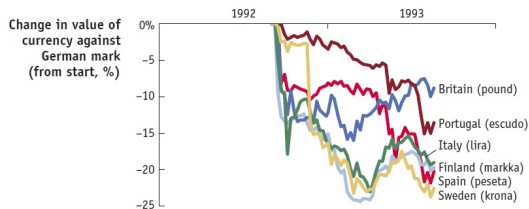


Probability of change

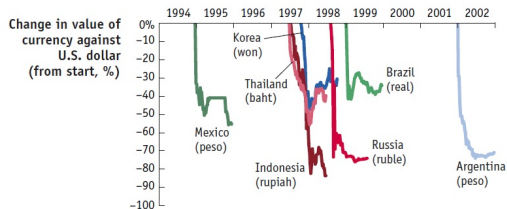


Episodes of Currency Crisis

(a) Depreciation in Year after 6 European Exchange Rate Crises in 1992



(b) Depreciation in Year after 7 Emerging Market Crises in 1994–2002



Background of the Sterling Crisis in 1992

- The European Exchange Rate Mechanism (ERM) was established in 1979 with the DEM as the base currency, and other currencies pegged with Mark.
- The United Kingdom joined ERM in 1990 hope to strengthen economic cooperation with other EU countries.
- In 1989, the Berlin Wall collapsed, and the Mark began to appreciate against USD strongly and steadily.

Sterling crisis in 1992

Exhibit 15.7 The Mark-Pound Exchange Rate (Marks per Pound) from January 1991 to December 1992

Changes in economic conditions during 1992 implied that the British pound had become overvalued. British authorities spent their foreign currency reserves trying to defend their overvalued currency, leading to a sharp decline in their reserves in August and especially in early September 1992. On September 16, they gave up on their attempts to prop up the British pound, allowing a sharp depreciation.

Mark-pound exchange rate








Source: Acemoglu et al.(2016).

Asian Crisis in 1997



Source: "1997 Asian financial crisis" in Wikiwand.

Currency	Exchange rate (per US\$1) ^[56]		Change
	June 1997	July 1998	
 Thai baht	24.5	41	▼ 40.2%
 Indonesian rupiah	2,380	14,150	▼ 83.2%
 Philippine peso	26.3	42	▼ 37.4%
 Malaysian ringgit	2.48	4.88	▼ 45.0%
 South Korean won	850	1,290	▼ 34.1%

Country	GNP (US\$1 billion) ^[56]		Change
	June 1997	July 1998	
 Thailand	170	102 ▼ 40.0%	
 Indonesia	205	34 ▼ 83.4%	
 Philippines	75	47 ▼ 37.3%	
 Malaysia	90	55 ▼ 38.9%	
 South Korea	430	283 ▼ 34.2%	

Did George Soros “Make” the Crisis?



George Soros, the founder of Quantum Fund.

- George Soros in Wikiwand.
- Nightmare for Bank of Thailand.

If He Did, How?

We summarize the article “Former Soros Fund Trader: How to Make The Asian financial crisis” as the following example. Suppose that:

- The spot exchange rate is $E = 10$;
- The speculator believes that the local currency (¥) is overvalued against foreign currency (\$) and will depreciate at least 20%, e.g. $E^e = 12$;
- The spot exchange rate after 30 days is $E^f = 16$.

Battlefield 1: The Spot and Future Markets

- Suppose the speculator has ¥10 at hand. Today, he will:
 - ① Convert ¥10 to \$1 in spot market;
 - ② Sell local currency in the futures market at $F = 16$ to make a strong signal for the market, which might trigger the depreciation.
- After 30 days:
 - ① Sell \$1 unit in the spot market to get ¥16;
 - ② Fulfill the future contract by selling ¥16 for \$1;
 - ③ Resell \$1 in the spot market for ¥16. The profit is ¥6.

Battlefield 2: The Money Market and Spot FX Market

- If the speculator has no fund at hand today, he could:
 - ① Borrow ¥10 from the domestic money market with an interest rate less than 60% (20% for example);
 - ② Exchange ¥10 to \$1 in spot market.
- After 30 days:
 - ① Exchange \$1 to ¥16 in spot market;
 - ② Return ¥12 in the money market, with ¥4 as profit.

Battlefield 3: The Money Market and The Stock Market

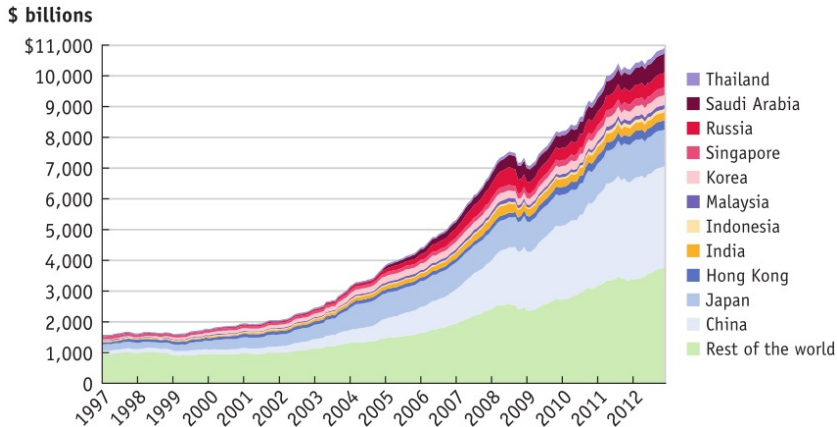
- If the speculator has no fund at hand today, he could:
 - ① Borrow ¥10 from the domestic money market with interest rate at 20%, for example;
 - ② Short stock index futures in the stock market.
- After 30 days:
 - ① When the central bank raise interest rate to stabilize the exchange rate market, the stock index will drop dramatically. The short-selling of stock index futures will be profitable.
 - ② Return ¥12 in the money market, taking the left fund as profit.

Trilemma and Adjustment of Policy Regimes

Since the beginning of the 1990s, many countries in Southeast Asia pegged their currencies to US dollar. During the Asian financial crisis, the currencies of most countries depreciated sharply. After that, the countries have adopted different exchange rate regimes:

- The Bank of **Thailand** abandoned the pegged exchange rate system to allow capital flow;
- The central bank of **Indonesia** maintained capital flow and pegged exchange rate;
- The Bank of **Malaysia** used capital controls to maintain fixed exchange rate and autonomy of monetary policy.

Keep Huge Reserves as Self-insurance



Reflections on Capital Control

- Wikiwand: Capital controls
- Data: “Capital Control Measures: A New Dataset”, by Andrés Fernández, Michael W. Klein, Alessandro Rebucci, Martin Schindler, Martín Uribe
- Academic Paper:
 - Barry Eichengreen and Andrew Rose, 2014. “Capital Controls in the 21st Century”, *Journal of International Money and Finance*, Vol.48, P1-16
 - Jonathan Heathcote and Fabrizio Perri, 2016. “On the Desirability of Capital Controls,” *IMF Economic Review*, Vol.64(1), P75-102

Will George Soros Come Baaack?



Source: South China Morning Post, 27 January, 2016.

- Communist mouthpiece accuses billionaire investor George Soros of 'declaring war against China'
- Chinese media's war of words with billionaire investor George Soros goes on as Premier Li Keqiang calls shorting of economy 'absurd'.

Is the RMB Crisis Coming?



Data Source: Wind database. Future rate is NDF(Non-deliverable Forwards) in Hongkong interbank market. Spot rate is from CFETS.

Currency Crisis in Argentina and Turkey

- BBC News: “MF boosts bailout for crisis-hit Argentina”
- The Guardian: “Why has Turkey’s currency collapsed?”

Country	Last		Previous	Range	
Argentina	60.80	Jul/19	61.38	1390 : 1.2	%
Turkey	24.00	Jun/19	24	500 : 4.5	%
Mexico	8.25	Jun/19	8.25	9.25 : 3	%
Brazil	6.50	Jun/19	6.5	45 : 6.5	%
China	4.35	May/19	4.35	10.98 : 4.35	%
United States	2.50	Jun/19	2.5	20 : 0.25	%

Note: Policy Rate of G20.

Discussion

- What are the main facts of currency crisis in Argentina and Turkey?
- What are the main causes of the crisis for each country?
- What are the solutions for the crisis?