

EE452: International Monetary Economics

7. Financial Crises

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Outline

- ☞ Gains and losses from well-behaved international lending
- ☞ International lending experiences
 - ☞ The Debt Crisis of 1982
 - ☞ The Mexican Crisis, 1994-1995
 - ☞ The Asian Crisis, 1997
- ☞ Major forces of financial crises
- ☞ Rescue packages and moral hazard
- ☞ Debt restructuring
- ☞ Bank regulation and supervision
- ☞ Capital controls
- ☞ Impossible trinity dilemma (“Trilemma”)

Objectives

Students should be able to:

- analyze the various types of international capital flows.
- illustrate and explain the welfare effects of allowing free international lending and borrowing.
- evaluate the case for taxing international capital flows.
- evaluate the role of defective property rights in recurrent sovereign debt crises.
- outline the causes and resolutions of financial crises.
- evaluate proposals to prevent future financial crises, particularly capital controls and banking reform.

Key categories of international flows of financial claims

- Private lending and investing
 - Long-term
 - Direct investment (lending to, or purchasing shares in, a foreign enterprise largely owned and controlled by investor)
 - Loans (to a foreign borrower, maturity more than one year, mostly by banks)
 - Portfolio investment (purchasing stock or bonds with maturity of more than one year, issued by a foreign government or a foreign enterprise not controlled by the investor)
 - Short-term (lending to a foreign borrower, or purchasing bonds issued by a foreign government or a foreign enterprise not controlled by the investor, maturing in a year or less)
- Official lending and investing (by a government or a multilateral institution like IMF or World Bank, mostly lending long-term and short-term)

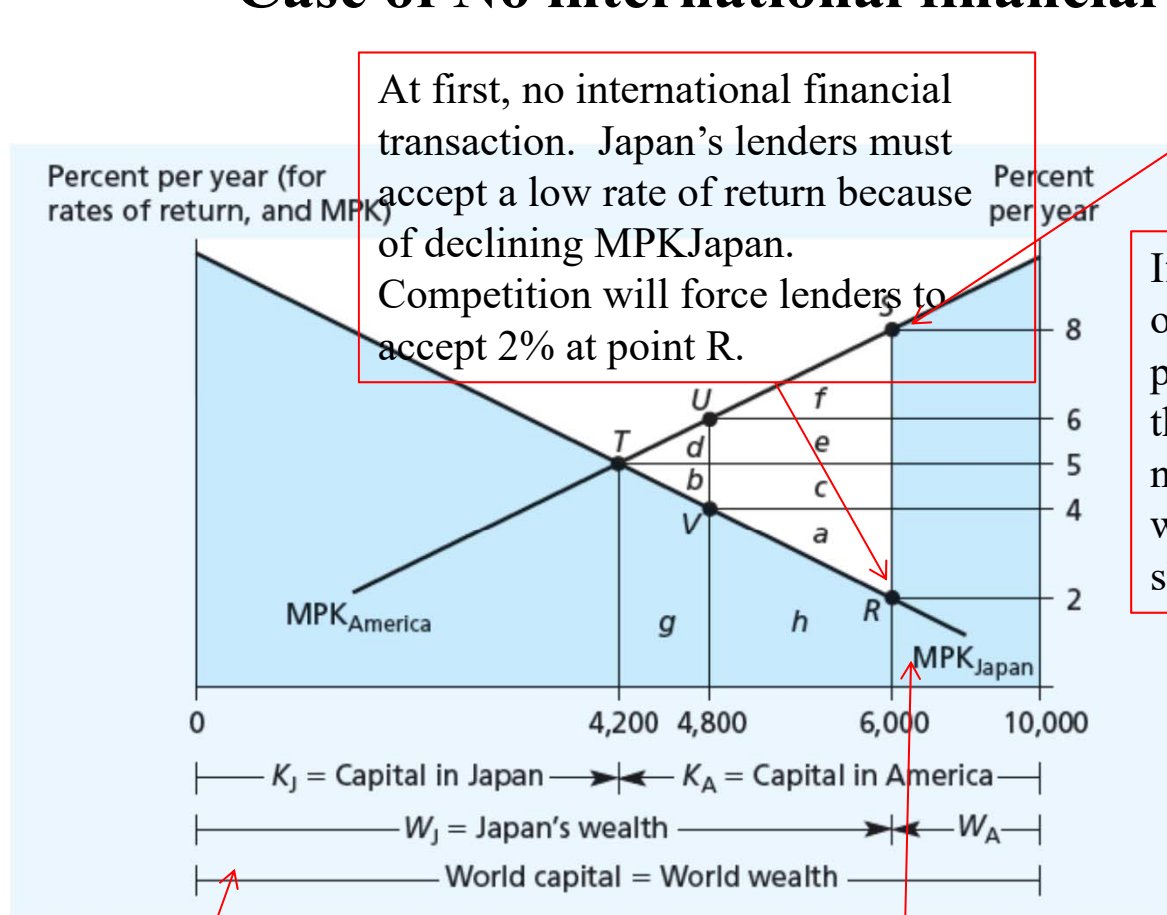
Benefits of international lending

- Inter-temporal trade- lender gives up resources today in order to get more in the future; borrow gets resources today but must pay back more in the future.
- Lenders and investors can diversify their investments more broadly.

International lending

- If the world is stable and predictable, and if borrowers fully honor their commitments to repay, then international lending can be efficient from a world point of view, bringing gains to some that outweigh losses to others.
- In such a world, the welfare effects of international lending are exactly parallel to the welfare effects of opening trade or those of allowing free labor migration.

Gains and losses from well-behaved international lending: Case of No international financial transaction



At first, no international financial transaction. Japan's lenders must accept a low rate of return because of declining MPK_{Japan}. Competition will force lenders to accept 2% at point R.

Since US only has WA wealth. Competition for borrowing bids the interest rate in US to 8% at point S.

If we add up the product of each unit of capital (MP), we get the total production by all capital, equal to the area under the MPK curve. With no international financial flows, the world's product equals the blue shaded area.

Total world wealth = $W_j + W_A$. This financial wealth is used to finance capital investments

Capital investment opportunities in Japan are shown as the Marginal product of capital curve, MPK_{Japan}. For US, the opposite side.

Source: Pugel (2012), p. 515

Phijaisanit (2019)

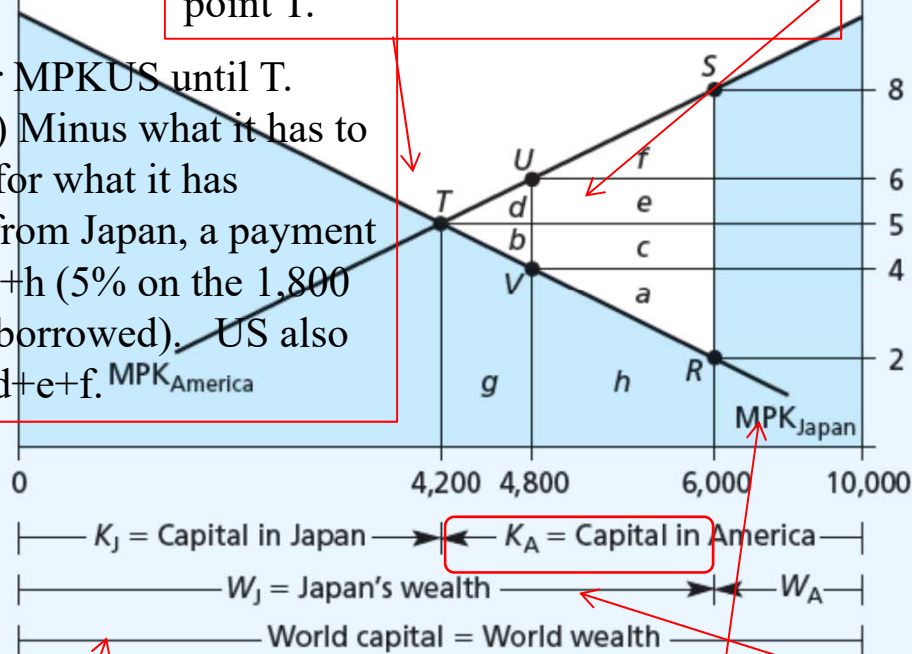
Gains and losses from well-behaved international lending: Case of international financial transaction

Percent per year (for rates of return, and MPK)

We allow for international transaction. The worldwide rate should be between 5-8%. Say 5%, at point T.

US income:

(1) Area under MPK_{US} until T. (6,800). (2) Minus what it has to pay Japan for what it has borrowed from Japan, a payment = $a+b+c+g+h$ (5% on the 1,800 that it had borrowed). US also gained by $d+e+f$.



World product is maximized. It equals shaded area plus RST. Japan's national income: (1) Japan's domestic product is the area under MPK_{Japan} to T. (4,200 invest at home). (2) Plus foreign source income on its investments in America = $a+b+c+g+h$ (5% return on 1,800 that Japan invested in US). Japan gains $a+b+c$ through foreign investment.

In this case, the wealth of Japan exceeds its stock of domestic real assets by the same amount ($W_J - K_J$) that America has to borrow to finance its extra real assets ($K_A - W_A$)

Total world wealth = $W_J + W_A$. This financial wealth is used to finance capital investments

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Source: Pugel (2012), p. 515

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**SOMETIMES INTERNATIONAL LENDING IS
NO WELL BEHAVED...**

Financial crisis in developing countries

- Usually the borrowing country experiences difficulties in servicing its debts, and it often defaults- that is, fails to make payments as specified in the debt agreements.

Surge in international lending, 1974-1982

- Before WWI, Britain was the main creditor and US Canada, Argentina, Australia are the main borrows.
- During 1920s, US became major creditor, foreign governments issued foreign bonds in New York.
- By 1930s, Great Depression led to massive defaults in developing countries, which frightens lenders through the 1960s.
- The oil shocks of 1970s led to a surge in private international lending to developing countries.
- In 1970-1980, developing country debt outstanding increased more than 7 times, arising from 11.3% of the country's national product in 1970 to 21.4% in 1980.
- However, in 1970s oil shocks also caused recessions and high inflation in industrialized countries. So how did shocks also revive lending?

Surge in international lending, 1974-1982

- Four forces combined to create the lending surge:
 1. High short-run propensity to save out their extra income in rich oil-exporting nations.
 2. Widespread pessimism about the profitability of capital formation in industrialized countries. This encouraged banks to look for borrows elsewhere aside from industrialized nations.
 3. In developing countries, the 1970s was an era of peak resistance to FDI. To gain access to higher returns offered in developing countries, banks had to lend outright to governments and companies in these countries.
 4. “Herding” behavior meant that the lending to developing countries acquired a momentum of its own once it began to increase. However, much of the lending went to poorly planned projects in mismanaged economies, but everyone was doing it!

Debt Crisis of 1982

- In Aug 1982, Mexico declared that it was unable to service its large foreign debt. This was followed by other developing countries.
 - Sharp interest rate rise in US, FED shifted to tighter monetary policy to reduce US inflation. (Recession-> exports declined while real interest rate remained high).
 - Bank creditors rescheduled loan payments
 - Bank creditors gave smaller amounts of new money to assist debtors to grow so they can repay.
- The debt crisis wore on through the 1980s, it became clear that the debtor countries were suffering low economic growth and lack of access to international finance.
- In 1989, through Brady Plan (named after US Treasury Secretary Nicholas Brady), each debtor country could reach a deal in which its bank debt would be partially reduced, with most of the remaining loans repackaged as “Brady bonds”.
- In 1994, most of the bank debt had been reduced and converted into bonds.
- In 1990s, lending to and investing in developing countries began to increase again.

Resurgence of Capital Flows in 1990s.

- Four major forces drove this new lending:
 1. The size and scope of the Brady Plan led investors to believe that the previous crisis was being resolved.
 2. Low US interest rates again led lenders to seek out higher returns through foreign investments.
 3. Developing countries were becoming more attractive places to lend as governments reformed their policies. - more outward-oriented trade policies in developing countries.
 4. Individual investors, as well as growing funds, were looking for new forms of portfolio investments that could raise returns and add risk diversification.

Net Financial Flows to Developing Countries, 1981-2009 (\$ Billions)

Source and Type	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Net long-term	82	77	60	54	44	42	50	56	56	68	75	111	161	165	178
Official Loans	23	24	23	22	20	21	23	19	22	26	26	22	23	14	22
Private debt	46	42	26	23	13	12	16	19	9	17	13	37	44	39	47
Bank and other loans	44	37	26	23	10	11	17	16	7	16	6	29	15	13	27
Bonds	1	5	1	-1	3	0	-1	2	2	0	7	8	29	26	21
Portfolio equity (stocks)	0	0	0	0	0	0	0	0	2	3	6	9	32	28	14
Foreign direct investment	14	12	10	9	12	10	10	18	22	22	30	43	62	84	95
Net short-term	20	8	-17	-6	2	2	12	10	14	14	20	35	34	11	54
Total net financial flows	102	86	43	48	46	44	62	67	70	82	95	146	195	176	232

Source and Type	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Net long-term	226	275	254	201	176	174	153	203	304	431	553	929	748	565
Official loans	3	10	22	16	5	11	-7	-14	-9	-24	-43	5	18	50
Private debt	78	80	74	12	9	-3	-2	38	70	113	145	283	196	53
Bank and other loans	29	43	37	-10	-11	-19	-13	15	36	65	113	195	172	2
Bonds	49	37	37	22	20	16	11	23	34	48	32	88	24	51
Portfolio equity (stocks)	26	29	3	10	14	7	8	26	37	67	108	133	-53	109
Foreign direct investment	118	156	156	163	148	159	154	152	207	274	343	508	587	354
Net short-term	33	17	-45	-18	-8	19	-13	57	53	74	84	184	-14	6
Total net financial flows	259	292	209	183	168	193	140	260	357	505	637	1,113	734	572

Bank loans from private long-term lending to developing countries in the early 1980s, declined in 1983 and 1984.

From 1986-1997, total net financial inflows increased every year. The majority of this money went to a small number of developing countries viewed as the major emerging markets – Mexico, Brazil, Argentina in Latin America, China, Indonesia, Malaysia, S. Korea and Thailand in Asia.

Stocks and bonds rose significantly. Bank lending also increased substantially from 1994-1997.

Developing Countries' External Debt Outstanding, 1970-2009 (\$ Billions)

Type of Debt	1970	1980	1985	1990	1995	2000	2005	2009
Long-term debt	61	393	708	1,032	1,470	1,777	1,965	2,759
Public and publicly guaranteed	45	325	623	973	1,261	1,287	1,283	1,407
Private nonguaranteed	15	68	85	60	208	490	682	1,352
Loans from the IMF	1	12	37	34	60	58	49	52
Short-term debt	9	112	125	187	331	287	475	734
Total debt	70	516	870	1,253	1,860	2,122	2,489	3,545
Debt/GNP ratio (percentage)	11.3	21.4	32.7	35.5	38.8	37.8	26.4	22.1
Debt service-exports of goods and services ratio (percentage)	16.2	20.6	26.2	21.5	18.0	20.9	13.2	11.3

Debt ratio also increased from 21% in 1980 to 33% in 1985, and the share of exports revenues that was committed to service the debt increased to 26%.

The long-term foreign debt of developing countries nearly doubled between 1980 and 1985

Developing countries' debt as percent of GNP rose from 36% in 1990 to 39% in 1995.

The Mexican Crisis, 1994-1995

- In early 1990s, Mexico received large capital inflows.
 - Impressive economic reforms
 - Entry into NAFTA
- Mexico inflation rate was higher than US, its major trading partner.
- Current a/c deficit financed by capital inflows.
 - However, Mexican banking system was weak, with inadequate bank supervision and regulation by the government.
- Bank lending grew rapidly, as did defaults on these loans.
- 1994 was an election year with some turmoil, including uprising and 2 political assassinations.
- Peso came under some downward pressure.
 - Government used sterilized intervention to defend its exchange-rate value, so its holding of official international reserves fell.
- Fiscal policy was modest government budget deficit. However, in early 1994, the government replaced peso-denominated government debt with short-term dollar-indexed government debt called “tesobonos”.
 - By the end of 1994, there were about US\$28 billion of tesobonos outstanding, most maturing in the first half of 1995!
- Later on there was capital flight in December. Investors refused to buy new tesobonos to pay off those coming due.
- US arranged a large rescue package that permitted Mexican government to borrow up to US\$ 50 billion, mostly from the US government and the IMF.
- Mexico economy went into severe recession and C/A deficit disappeared as imports decreased and exports increased.
- Overall capital flows to developing countries continue to increase in 1995-1996.

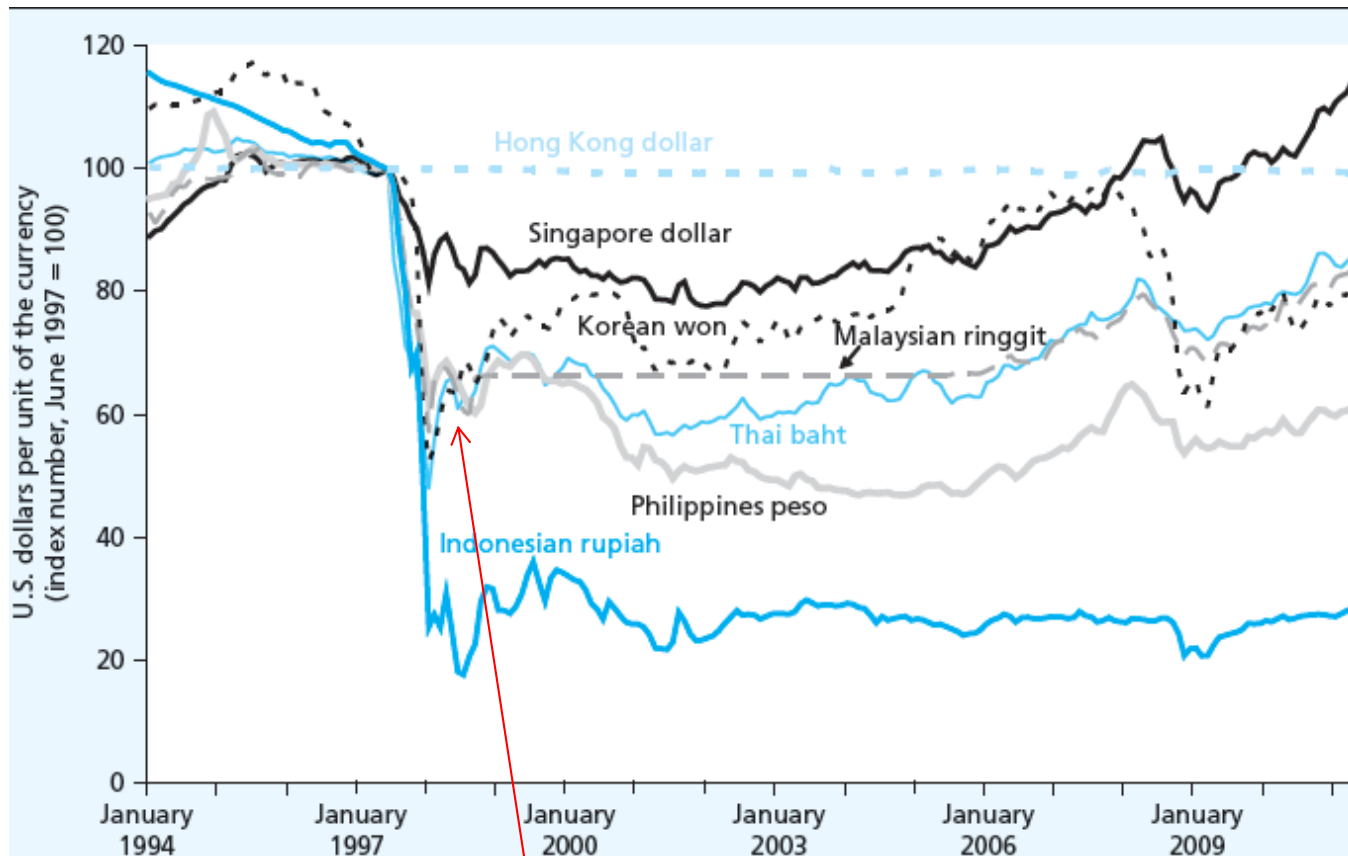
The Asian Crisis, 1997

- In early and mid-1990s, foreign investors looked favorably on SE and E Asia.
 - Solid macroeconomic policies
 - Fiscal budget surplus/ small deficit
 - Low inflation
 - Outward-oriented trade policies
- Problem: In Thailand and S. Korea, much of the foreign borrowing was by banks and other financial institutions.
 - Weak government regulation and supervision
 - The local banks took on significant exchange-rate risk by borrowing dollars and yen and lending in local currencies.
 - Lending boom led to loans to riskier local borrows and rising defaults on loans.
 - In Indonesia, much of the foreign borrowing was by private non-financial firms, which took on the exchange-rate risk directly.
 - Exchange rate of these countries' currencies seemed to be over-valued, and growth of exports slowed beginning in 1996.
 - Thailand's C/A deficit rose to 8% of GDP in 1996. Still, the strong capital inflow provided financing for the deficits.

The Asian Crisis, 1997

- Beginning in 1996, the expectation of declining exports led to large declines in Thai stock prices and real estate prices.
- The exchange rate value of Thai baht came under pressure.
- By mid-1997, the pressures had become intense.
 - Bank and other local firms that had borrowed dollars and yen without hedging rushed to sell baht to acquire foreign currency assets.
 - The Thai government could not maintain its defense, and the baht was allowed to depreciate beginning in July 1997.
- The crisis spread to other Asian countries, esp Indonesia, S. Korea, but also to Malaysia and Philippines, as foreign investors lost confidence in local bank borrowers and local stock markets.
- Next figure shows the declines of 40% or more in the exchange rate values of currencies of Thailand, Indonesia, Korea, Malaysia and Philippines during the second half of 1997.
- The IMF organized large rescue packages, with commitments to lend up to US\$17 billion to Thailand.

Exchange Rates, Asian Countries, 1994-2011



40% depreciation of Thai Baht!

Source: Pugel (2012), p. 526

MAJOR FORCES OF FINANCIAL CRISES

Major Forces of Financial Crisis

1. Waves of over-lending and over-borrowing
2. Exogenous international shocks
3. Exchange-rate risk
4. Fickle international short-term lending
5. Global contagion (spill-over effects)

RESOLVING FINANCIAL CRISES

Rescue packages

- From Asian financial crisis, the rescue package has been large.
 - For example, US\$17 billion for Thailand and US\$58 billion for South Korea.
 - Lenders generally included the IMF, World Bank and some national governments.
- Rescue packages can serve several purposes:
 - Loans in the package compensate for the lack of private lending during crisis.
 - The package can restore investor confidence by replenishing official reserve holdings.
 - Official lenders hope that the package will limit contagion effects.
 - IMF imposes conditions as part of its lending, to require the government of the crisis country to make policy changes that should speed the end of financial crisis.

Rescue packages and Moral hazard

- *How effective rescue packages actually are?*
- *Do they actually increase the likelihood of financial crises because they encourage over-lending and over-borrowing?*
 - A large rescue package provides a bailout for lenders and borrowers when a crisis hits.
- However, if lenders and borrowers expect to be bailed out, then they should worry less about the risk of a financial crisis.
 - This leads to some moral hazard – in which the insurance leads the insured to be less careful because the insurance offers compensation if bad things happen.

Debt restructuring

- Debt restructuring refers to two types of changes in terms of debt:
 - Debt rescheduling changes when payments are due, by pushing the repayments schedule further into the future. The amount of debt is effectively the same, but the borrower has a longer time to pay it off.
 - Debt reduction lowers the amount of debt.

Bank regulation and supervision

- Government regulation and supervision of banks in developing countries has often been weak.
- With weak regulation, banks engage in more risky activities.
- Banks make loans based on relationships – “crony capitalism” loans to bank directors, managers, friends of directors, managers, politically important people, etc.

Capital controls

- An outright limit or prohibition
- A tax that must be paid to the government equal to some portion of the borrowing
- A requirement that some portion of the borrowing be placed in a deposit with the country's central bank

Capital controls can reduce the risk of financial crisis

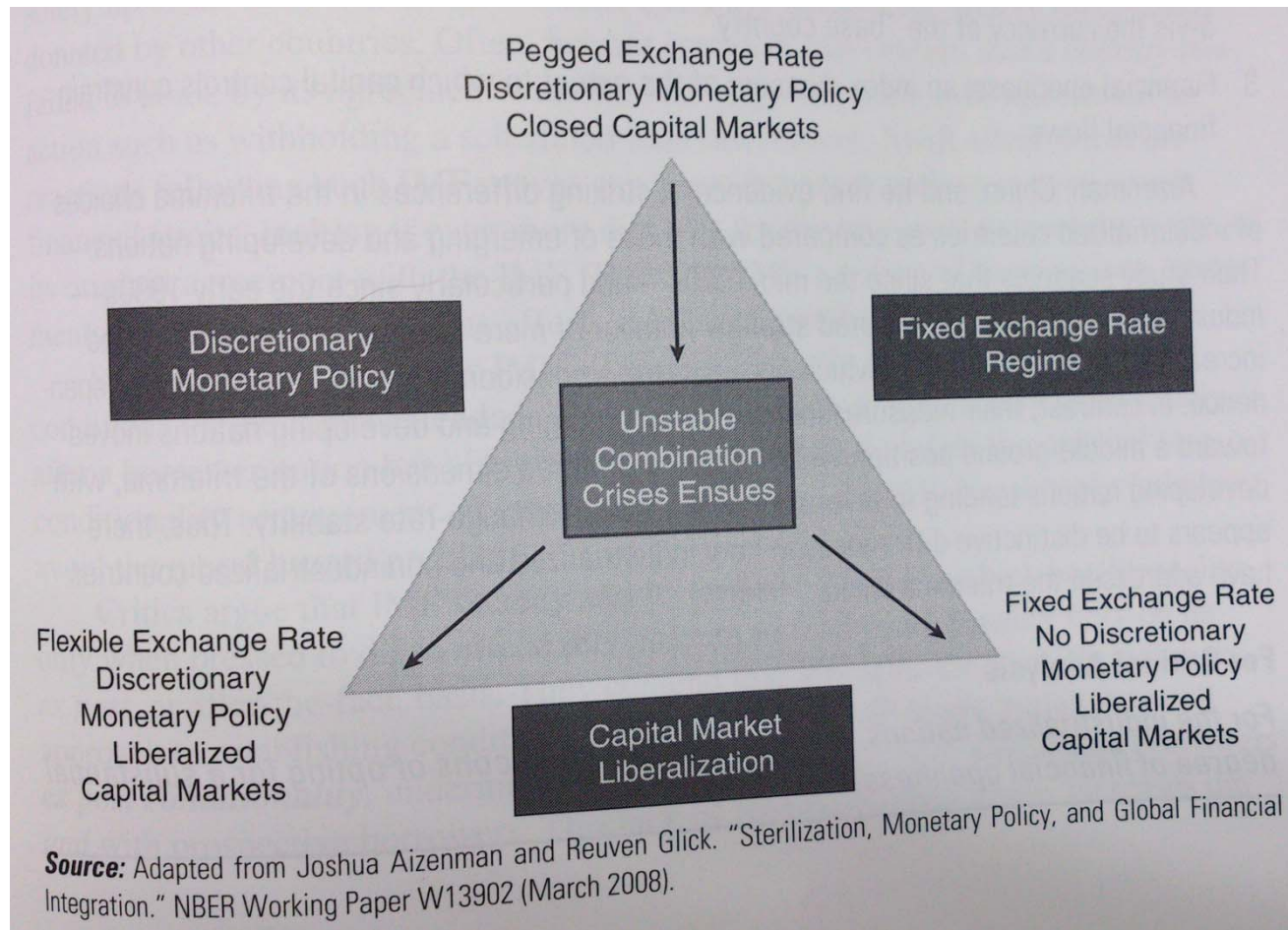
- Controls can prevent large inflows that could result in over-borrowing and over-lending.
- Controls can be used to discourage short-term borrowing.
- Controls can reduce the country's exposure to contagion by limiting the amount that foreign lenders could pull out of the country.

Impossible Trinity Dilemma (“Trilemma”)

(Daniels and Van Hoose, 2014, pp. 203-204)

- Trilemma is the idea that policymakers may choose a combination of two, but not all three of the following policy options: fixed exchange rates, discretionary monetary policy (นโยบายการเงินแบบดุลพินิจ ไม่ใช่แบบอัตโนมัติ), and liberalized capital markets.

Trilemma



As a country moves toward liberalized capital markets, a stable policy configuration requires that policy makers forego either discretionary monetary policy or fixed exchange rates.