April 3rd: Financial Crises of the 1990s
The 1990s was a decade of disruptive financial crises

- Mexico in 1994
- Thailand, Indonesia, Korea and other Asian countries in 1997-8
- Brazil and Turkey in 1999
- Argentina in 2001-2
  - (OK, not exactly the 1990s, but widely seen as another in this stream.)
The feeling was that we had entered a new era

- This was a new era of financial instability, in that crises were more frequent than before.
- There was also the feeling that these crises were more alarming than those that had preceded them.
  - Earlier episodes had been crises of inadequate growth and macroeconomic imbalance (large deficits, overvaluation, high inflation).
  - The countries suffering these crises, on the other hand, generally grew acceptably well and displayed few macroeconomic imbalances.
  - Rather, these crises seemed to be associated with capital flows ("capital account crises" rather than "current account crises") and weaknesses in domestic financial systems (weak regulation, inadequate transparency – recall earlier cartoon).
  - But what exactly caused them was disputed.
    - Michel Camdessus, then head of the IMF, referred to the Mexican crisis in 1994-5 as "the first financial crisis of the 21st century," indicating this awareness.
And yet the period since 2003 has been calmer (at least in the developing world)

- No major banking or currency crises have occurred in this period.
  - At least in the developing world.
  - And this appears to be true even in the face of the U.S. subprime crisis (encouraging talk of decoupling).
Leaving the obvious iClicker question:

How do we interpret this new situation?

A) Is the improvement permanent, reflecting reforms and stronger policies in previously crisis-prone countries?

B) Or is the respite only temporary, reflecting strong growth worldwide, ample liquidity, and favorable commodity prices?
As you anticipated, one can argue that there is some truth to both views

- Emerging markets have strengthened their policies.
  - They have stable macroeconomic policies.
  - They are no longer running budget and current account deficits as a group.
  - They have accumulated massive amounts of foreign reserves to bullet proof their economies.
  - Many but not all have moved to more flexible exchange rate regimes, limiting financial vulnerability.
  - There has also been progress in strengthening bank regulation and building securities markets, but this has been more limited.

- But vulnerabilities remain.
  - If global growth slows, financial conditions tighten, and commodity prices decline, crises could be back.
It is important to recall that currency and banking crises are not new

- They were not infrequent before 1913 in the first age of globalization (as we studied earlier in the course).
- And what was the Great Depression if not one big banking and currency crisis?
- Yet there was the feeling that reforms of domestic and international financial systems put in place in response to the Depression had solved the crisis once and for all. These included:
  - Stricter regulation of domestic financial systems
  - Deposit insurance to buttress confidence
  - Controls on international capital flows
  - A more stable international monetary framework
- Hence there were essentially no banking crises in the third quarter of the 20th century.
- Then things changed…
Recall this table on crisis frequency

<table>
<thead>
<tr>
<th>Year</th>
<th>Banking Crises</th>
<th>Currency Crises</th>
<th>Twin Crises</th>
<th>All Crises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880-1913</td>
<td>2.30</td>
<td>1.23</td>
<td>1.38</td>
<td>4.90</td>
</tr>
<tr>
<td>1919-1939</td>
<td>4.84</td>
<td>4.30</td>
<td>4.03</td>
<td>13.17</td>
</tr>
<tr>
<td>1945-1971</td>
<td>0.00</td>
<td>6.85</td>
<td>0.19</td>
<td>7.04</td>
</tr>
<tr>
<td>1973-1997 (21 countries)</td>
<td>2.03</td>
<td>5.18</td>
<td>2.48</td>
<td>9.68</td>
</tr>
<tr>
<td>1973-1997 (56 countries)</td>
<td>2.29</td>
<td>7.48</td>
<td>2.38</td>
<td>12.15</td>
</tr>
</tbody>
</table>

Iclicker Question: Why did crisis incidence increase in the last quarter of 20th century?

A) Governments deregulated domestic financial institutions and markets.
B) Capital controls were relaxed and removed as part of this process.
C) Political democratization made it harder for governments to privilege currency stability over all other goals.
D) All of the above.
While both advanced and developing countries were affected, developing countries faced special challenges

- Governments had enlisted their banking systems as instruments of development policy, encouraging them to engage in development lending.
  - Recall our discussion of South Korea and Taiwan.
- Supervision and regulation were underdeveloped.
- Bank owners were connected politically.
- Financial systems were bank based, making banks too important to fail and thus creating moral hazard problems.
- These countries were small relative to global financial markets and flows.
- Most of them operated fragile pegged exchange rate regimes.
  - Moving to a more flexible rate backed by inflation targeting requires considerable capacity building.)
- Finally, they came under pressure to liberalize and open their capital markets from their lenders: commercial banks, the IMF, the U.S. government.
The result was an upsurge in banking, currency and debt crises, especially in emerging markets (defined as developing countries connected to international capital markets).

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Of these crises, Asia’s crisis did most to challenge the conventional wisdom

- The crisis was unexpected (Asian countries had been growing robustly)
- The kind of macroeconomic imbalances typically associated with crises were not prominent.
  - Hence, this Asian episode challenges standard notions of the causes of such problems.
  - It pointed up importance of structural and financial weaknesses.
  - It directed attention to their historical roots (and institutional embeddedness).
  - It posed a challenge to mainstream arguments about the advantages of international capital mobility
  - Its forced us to rethink structure of the international financial architecture (including the role for the IMF as an international lender of last resort, something that we will consider next time)
What causes financial crises?

- For present purposes, we can usefully distinguish “first-generation” and “second-generation models” of financial crises.
  - Here I am focusing on currency crises (although one can take a similar approach to understanding banking and debt crises).
  
First-generation models

- First generation models explain crises in terms of the incompatibility of internal and external economic policies. (Here I focus on currency crises.)
- Externally, pegging the exchange rate requires maintaining the demand in general, and the stock of money in particular (money being one determinant of aggregate demand), at levels consistent with the exchange rate commitment.
- We can see this most easily with the following model (actually, equation):

$$m - p = \kappa y$$

- can be rewritten as $$m = ep^* + \kappa y$$.
  - where this is a conventional money demand function ($\kappa$ is the income elasticity of money demand).
  - Note that I have imposed the simplifying assumption of purchasing power parity (that $p=ep^*$, which is easily relaxed.

- If output $y$ and foreign prices $p^*$ are exogenous, then pegging the exchange rate $(e)$ ties down $m$. In the absence of capital controls, there is no scope for monetary independence.
But the authorities may also have other motives for managing the money supply: to finance budget deficits, encourage investment as part of their growth strategy etc.

They may therefore pursue a monetary policy that is, in the long run, incompatible with their stated commitment to peg the exchange rate.

Krugman’s contribution was to build a model that could pin down the precise time when the currency peg collapsed.

But the key insight (actually, assumption) remained that crises are caused by the incompatibility of internal and external commitments and excessively expansionary domestic policies.
This framework in turn points to standard “leading indicators” of crises

- Long experience (particularly in Latin America, where earlier crises had been centered) and these theoretical models point to a handful of leading indicators of crisis risk.

- Most crises, they suggest, reflect unsustainable demand stimulus, sometimes superimposed on negative supply shocks. Leading indicators are thus things like:
  - Excessively rapid money creation and chronic inflation
  - Persistent budget deficits (which provide a motive for that money creation)
  - Inflation that leads to currency overvaluation/disappointing export growth
  - Low interest rates that limit the incentive to save, resulting in savings inadequate to finance investment.
These were the kind of indicators used by, inter alia the IMF, to forecast and warn of crises.

They seemed to work relatively well in the 1970s and 1980s, and in Latin America, where the risk was centered.
But Asia showed few of these warning signs

- Growth had been rapid (ranging from 8% in Indonesia to 6% in Thailand in 1996). In many cases, miracle growth had been underway for 25 years and more.
- Savings rates were high (up to 40%)
- Investment rates were high
- Budgets were balanced
- Export growth was rapid (30-40% per annum!)
- Inflation was moderate
Still, there were some disquieting indications

- Deceleration in export growth in 1996
  - (due to slowdown in global semiconductor industry and growing Chinese competition)
- Mounting current account deficits
- Large amounts of short-term debt
- Overheating economies and property markets
- Rising dollar against the yen (which aggravated problems of overvaluation due to the maintenance of dollar pegs in the region)
We see here the slowdown in export growth as an illustration.
But This Was Wisdom After the Fact

- No one saw the crises in Korea, Indonesia, and elsewhere in Asia coming
- Investor sentiment remained buoyant
- The IMF issued no serious warnings
  - With one exception…. 
The one exception was Thailand

- Thailand’s was a classic “first generation” crisis.
- IMF repeatedly warned the government that it was skirting danger (the IMF could see it coming because of the familiar nature of the problem)
  - Current account deficit was alarmingly wide
  - Export performance was disappointing
  - Currency was increasingly overvalued (due to $ peg). Pressure on baht already in late 1996
- We see this in the following slides....
Thai real exchange rate (notice growing overvaluation before July 1997)
Thai equity prices (notice them trending downward well before the crisis)
Thus, Thailand exhibited classic pre-crisis symptoms of the “first generation” variety

- But none of this explains why the crisis spread to other Asian countries
- Another analytical perspective is needed to understand this phenomenon
  - This brings us to the second-generation model.
Second-generation models

- Second generation model had been developed prior to the Asian crisis but was regarded as a theoretical curiosity. Suddenly its relevance became obvious.

- These models rest on the existence of multiple equilibria (unlike first generation models, where there was a unique equilibria and the outcome was preordained, given policies).

- Ex ante, there is no policy imbalance. If investors don’t take fright, a currency peg can be maintained indefinitely.

- But if investors panic, the authorities have to raise interest rates to lure them back and defend the currency.
  - And herein lies the problem…
Raising interest rates creates the policy imbalance. It depresses investment and tax revenues, creating budget deficits and forcing monetization. It weakens the banking system, auguring even bigger budget deficits down the road (since the government has to spend in order to recapitalize the banks). Thus, the speculative attack produces the imbalances, rather than the imbalances producing the attack. And, having to keep the banking system from collapsing, the authorities have no choice but to inject liquidity into the economy and allow the currency to collapse, validating the expectations of speculators.
What drives these second generation models?

- It was tempting to blame open capital markets and “evil speculators” for the crisis (as Mr. Mahathir, Malaysia’s prime minister did). And, indeed, self-interested financial market participants do play a pivotal role in these 2nd generation models.
  - Pegged exchange rates offered them a one-way bet. And open capital markets allowed them to sell the assets of the target country in essentially unlimited amounts.
But the endogenous weakening of policy that produces the key result in these models would not have occurred in the absence of preexisting vulnerabilities.

- Weak corporate governance meant that firms had accumulated large amounts of short-term debt, so that when interest rates rose many of them experienced acute financial distress.

- The fact that banking systems were already weak meant that there was a strong negative impact on the condition of the banks.
Short-Term Debt Problem was a Problem in Many Asian Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio of short-term debt to international reserves</th>
<th>Short-term debt as a percentage of total debt</th>
<th>Ratio of broad money to international reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea, South</td>
<td>3.0</td>
<td>67</td>
<td>6.2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.6</td>
<td>24</td>
<td>6.2</td>
</tr>
<tr>
<td>Thailand</td>
<td>1.1</td>
<td>46</td>
<td>4.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>0.7</td>
<td>19</td>
<td>4.9</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0.6</td>
<td>39</td>
<td>4.0</td>
</tr>
<tr>
<td>Singapore</td>
<td>na</td>
<td>na</td>
<td>1.0</td>
</tr>
</tbody>
</table>

*na = not available*
Boom in Bank Lending and Deterioration in Lending Standards was Common to Asian Countries

### Table 4  Growth and composition of bank lending, 1990-96 and 1998

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thailand</td>
<td>10.0</td>
<td>11.1</td>
<td>5.8</td>
</tr>
<tr>
<td>Indonesia</td>
<td>10.4</td>
<td>4.4</td>
<td>5.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>3.1</td>
<td>10.5</td>
<td>13.1</td>
</tr>
<tr>
<td>Philippines</td>
<td>10.7</td>
<td>27.4</td>
<td>31.5</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>8.8</td>
<td>8.9</td>
<td>8.1</td>
</tr>
<tr>
<td>Singapore</td>
<td>0.5</td>
<td>7.8</td>
<td>5.7</td>
</tr>
<tr>
<td>Korea, South</td>
<td>2.6</td>
<td>2.2</td>
<td>-0.6</td>
</tr>
<tr>
<td>Mexico</td>
<td>25.7</td>
<td>-0.6</td>
<td>36.0</td>
</tr>
</tbody>
</table>

#### B. Estimates of the share of bank lending to the property sector

<table>
<thead>
<tr>
<th>Country</th>
<th>Share (end-1997)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>40-55</td>
</tr>
<tr>
<td>Singapore</td>
<td>30-40</td>
</tr>
<tr>
<td>Thailand</td>
<td>30-40</td>
</tr>
<tr>
<td>Malaysia</td>
<td>30-40</td>
</tr>
<tr>
<td>Indonesia</td>
<td>25-30</td>
</tr>
<tr>
<td>Korea, South</td>
<td>15-25</td>
</tr>
<tr>
<td>Philippines</td>
<td>15-20</td>
</tr>
</tbody>
</table>

Thus, contagion (the susceptibility of other countries) reflected shared weaknesses! External vulnerability (large current account deficits required ongoing financing) banking system was already weak (hence, high interest rates to defend currency) large stock of short-term debt (there was a balance-of-payments deficit undermining its solvency) Heavy indebtedness of corporate sector (hence, currency system) highly indebtedness (large current account deficits required ongoing financing) extreme vulnerability (large current account deficits required ongoing financing) and when the Thai baht was devalued, investors awoke to the possibility that these and other problems lurked in neighboring countries. (This is sometimes referred to as “the wake-up call” interpretation of the contagion effect.)

The susceptibility of other countries reflected shared weaknesses!
Pointing to financial weaknesses is well and good

- The question is how the crisis countries allowed themselves to get into this vulnerable position.
- Why did they fail to upgrade financial supervision?
- Why did they prevent banks and firms from incurring large amounts of short-term foreign-currency-denominated debt?
- It was not as if the IMF and others had not been warning of the risks posed by weak financial systems and high levels of short-term external indebtedness.
In Turn, These Weaknesses Reflected the Operation of Long-Term Historical Forces

- Corollaries of the Asian development model
- Banks had always been used as instruments of industrial policy.
- Guarantees were quid pro quo for directed lending.
- In this sense, the crisis reflected the operation of long term historical forces.
  - The same structures, policies and arrangements that had worked so well during the period of extensive growth now posed sources of financial vulnerability.
  - But that they had worked so well for so long rendered them deeply embedded and hard to root out, IMF warnings notwithstanding.
- And now *capital account liberalization*, urged on these countries by the US government, IMF and OECD, created moral hazard, allowing banks to lever up their bets, and thereby heightened the associated risks.
Implications for Financial Management

- Large current account deficits are not benign
- How the current account is financed is important
- Banks are a special source of vulnerability
- Developing countries need more flexible exchange rates to remove focal points for speculators and to allow domestic policy to be tailored to domestic imperatives, the need for which is unavoidable in political democracies.
These are the lessons that developing countries have taken on board in the last ten years

- They are avoiding large current account deficits.
- They are attempting to finance them with FDI and domestic-currency denominated bond issuance.
- They are attempting to build bond markets to provide a spare tire (an alternative to banks).
- They are reducing corporate indebtedness, leverage and financial fragility.
- They are strengthening financial supervision and regulation and market transparency.
- They are building reserves as a cushion against shocks.
- Some are moving to more flexible exchange rates.
With $S>I$, countries have current account surpluses and have been accumulating reserves.
Corporate indebtedness has been reduced

[Diagram: Corporate debt ratios showing comparisons between 2002 and 2006 for Indonesia, Korea, Malaysia, Philippines, and Thailand. The x-axis represents the countries, and the y-axis represents the percentage of equity. A note states: "In market value terms.".]
Corporate governance has been strengthened
Reserves have been built up

Figure 1: Reserves/Short-term Debt, 2005

Source: IMF and BIS
These are the facts to which people point when they say that emerging markets have now bullet proofed their economies against crisis risk.

But, irrespective of whether this is true, the policies are not without costs.

- Lower investment rates
- Slower growth
- Forgone consumption
But running current account surpluses and accumulating reserves (I<S) means that investment has lagged
Thus, while growth has resumed, it has been slower than before
So could it happen again? That's the 64 million renminbi question...
Some countries are still vulnerable to old fashioned 20th century crises

- They are running large current account deficits that will have to be compressed sharply by the adoption of contractionary monetary and fiscal policies if capital flows dry up.
- In many cases high inflation is leading to problems of overvaluation, which can only be corrected by an (involuntary) adjustment of the current
- These countries, then, are all vulnerable to “sudden stops.”
- Examples include Turkey, South Africa, Iceland, Hungary, Romania, Bulgaria, Estonia, Latvia, Lithuania.
But are Large Current Account Deficits an Indicator of Vulnerability?

(In percent of GDP, 2006)
Consider the features of the preceding list of countries

- The “usual suspects” in Latin America and East Asia are missing.
- One has to work hard to find countries in this position.
  - This is indicative of how much progress emerging markets have made in avoiding overvaluation, limiting dependence on capital inflows, building reserves, and effectively ruling out the possibility of an old-fashioned financial crisis.
  - Indeed, some observers are critical of these countries’ single-minded focus on stability at the expense of development. They regard it as perverse that capital seems to be flowing “uphill” from poor to rich countries as a result.
So if there is to be another round of EM crises, they will take a different form

- Likely form will resemble crises in the US in the 19th century.
  - [Maybe we should call these 19th century rather than 21st century financial crises]

- The trigger will not be capital flow reversals but an investment- and domestic-stock-market-led bust.

- Thus, consider China, a country where the stock market has doubled in the last year and investment rates approach 45 per cent of GDP, which is clearly unsustainable.

- If the stock market corrects significantly, investors who bought on margin may have to sell into the falling market. Firms that issued shares to finance investment may find it impossible to continue doing so.

- Banks which lent to stock-market and real-estate speculators may find that their collateral is no good and stop lending.

- The result could be a severe investment slump accompanied by a financial crisis, not like events in the United States after 1873, 1884, 1893 and 1907.
  - In other words, such episodes are not atypical for a fast growing emerging market where there is enthusiasm for investment but limited transparency and, hence, considerable scope for financial volatility.
Conclusions

- Much progress has been made in buttressing financial stability and limiting crisis risk in the last 10 years.
- But the recent period of calm may reflect temporary factors as well as permanent progress.
- In some countries (viz. Venezuela), there is even reason to question whether that progress is permanent.
- And there is a danger of fighting the last war. Every generation of financial crises is different from its predecessor. The next wave will undoubtedly differ as well.