

## Balance of Payments Crises and Capital Flight.

### The Balance of Payments and the Money Supply

|                                  | Credit  | Debit  |
|----------------------------------|---|--|
| Current Account [CA]             | (1) Exports of Goods and services                                     | (2) Import of goods services   |
| Non-reserve Capital Account [KA] | (3) Private export of assets (capital inflow)                         | (4) Private import of assets (capital outflow)                         |
| Official Reserve Settlements     | (5) Foreign CB net purchases of home assets (official capital inflow) | (6) Home CB net purchases of foreign assets (official capital outflow) |

In BOP equilibrium:  $(1 - 2) + (3 - 4) = 0$

BOP = CA + non-reserve KA

**IF BOP > 0: (BOP Surplus – capital inflow)**  
**IF BOP < 0: (BOP Deficit – capital outflow)**  
**IF BOP = 0 (BOP equilibrium) then CA = non-reserve KA.**

### Basic Macroeconomics of Less Developed Countries (LDC's)

- 1) **Government Control** – High govt. spending, control of industries.
  - a) **State enterprises:** many companies are owned and managed by the national govt. In Brazil, half of GNP is produced by state companies.
  - b) Recently, there has been a trend towards privatization.
  - c) **Privatization:** government sells state owned enterprises to the private sector or foreign investors either to help efficiency or to generate government revenue.
- 2) **High inflation (inflation tax)** – seignorage revenue
  - a) With undeveloped financial markets it is hard for the government to pay for a deficit by selling bonds. One alternative is to borrow from foreign banks or sell bonds abroad.
  - b) Another alternative is to print money
  - c) **Seignorage:** the real output that a government obtains by printing money and spending it.
  - d) Increase money supply will lead to inflation. So whoever is holding money will lose purchasing power (money in pocket buys less) → lose real value → inflation tax.
  - e) Examples:
    - i) Suppose the Brazilian government doubles money supply from 1 to 2 trillion cruzieros (price level doubles). Real value of increase in the money supply is what 1 trillion cruzieros would buy now; half a trillion

- cruzeiros could buy before the money increase. **Tax:** the 1 trillion cruzeiros that people were holding loses half of their value: so seignorage tax is what half a trillion cruzeiros could have bought.
- ii) Occurs in the US but is small: 1980-85, US had an average inflation of 7%, meaning seignorage averaging 0.3% of GNP.
  - iii) In Argentina 1980-85 inflation was 274%, with seignorage equal to 4% of GNP.
  - iv) Bolivia, 500% inflation and 6.2% of GNP seignorage.
- 3) **Pegged ER** – reduce volatility in thin financial markets
- a) **Sometimes sets controls on foreign exchange**
  - b) **Use multiple exchange rates for commercial policy:** to subsidize imports of certain sectors, like machinery for investment, while discouraging imports of luxury consumption goods
  - c) Results in black markets.
  - d) Crawling peg: because of high seignorage and inflation a fixed er is not sustainable so have to adjust the peg frequently (sometimes daily).
- 4) **Corruption**
- 5) **Undeveloped financial markets** – crony capitalism, savings not necessarily put to most productive use.
- a) Stock markets are usually very small (if at all) and are not markets for long-term debt contracts.
  - b) Bank lending is tightly controlled by the govt.
  - c) Often law keeps interest rates artificially low, so as to subsidize favored industries or sectors in the economy.
  - d) Low interest rates means there is a shortage of saving and excess demand for borrowing, so the government allocates capital to the preferred sectors.
  - e) Capital flight: flow of funds into foreign assets b/c low interest rates at home or financial instability (currency depreciation expected).
- 6) **Primary product or agricultural exporters.**
- a) Highly susceptible to world demand and price of a primary export good.
  - b) Raw materials are especially prone to such shocks.
  - c) Could be viewed as a negative taste shock.

## Debt

1. Why do funds flow to LDC's?
  - Low savings rate b/c the country is not yet developed; there are many profitable investment opportunities.
    - Have large pool of labor but little machinery.
    - Building a factory would be profitable.
  - **The law of diminishing marginal returns states that the most productive units of capital will be the first units. There are unexploited profit opportunities in LDC's.**

2. Types of Capital Flows (debt)
  - 1.) **Official Borrowing:** from the IMF or World Bank
  - 2.) Bond finance: the government sell bonds to private foreign citizens (especially inter-war years).
  - 3.) **Bank Loans:** government borrow from banks in developed countries (especially since the 1970's)
  - 4.) **DFI (FDI):** foreign firm buys a subsidiary in the country. For example, Volkswagen building a plant in Mexico. Was important until the 1970's, then decline until 1990's has become important again.
  - 5.) **Portfolio investment:** buy shares in stock market, a very recent development.

Note: most debt is either direct loans to the government or involves the government as a guarantor of repayment.

1-3 are debt finance, 4, 5 are equity finance.

### 3. **History of Debt Crisis:**

- *Early history*
  - Pre-WWI years: high level of capital flows from Europe to developing countries then: US, Canada, Australia, Argentina (in 19<sup>th</sup> century Argentina had a higher per capita income than Canada).
  - Up to 40% of Britain's savings flowed to foreign investment.
  - International capital flows shrunk after the Great Depression.
- 1960's-early 70's: Latin America cut off from private funds, relied on official borrowing from IMF, WB, Inter America Development bank.
- *The 1973 and 1979 oil shocks*
  - Huge current a/c surplus in OPEC countries
  - OPEC kept large deposits in commercial banks in the West
  - Commercial banks lent the money to developing countries.
  - Sometimes known as petrodollars.
  - Banks were looking for profitable opportunities to invest these funds (recycle funds → loaned to non-oil producing developing countries). Before then, banks had not played a big role in international lending.
  - Developing countries ran big current a/c deficits
- *Nature of the debt*
  - The loans that were made at very low **real** interest rates.
  - Floating-rate loan contracts
  - A large portion of developing-country debt was tied to the LIBOR (interest rate charged by London commercial banks among themselves for dollar loans)
  - Debt denominated in dollars
  - LDC's seemed like a good place for loans: export prices were high, so revenues were thought to be sufficient to pay back loans.
- *Contractionary monetary policies in the U.S.*
  - Inflation in the US after the second oil shock.

- Fed responded by cutting US money supply.
- Sharp increase in interest rates in 1979
- Appreciation of the dollar
- Result: Debt service payments ballooned
  - Interest rates were tied to the US rate and loans were denominated in \$.
  - Developing countries thought it was temporary, so borrowed more to make interest payments.
- *Worldwide recession: 1981-1983*
  - Developing-country exports fell b/c of recession
  - Terms-of-trade shock
  - Result: Growth rates fell
  - Soon it became clear that Latin America debt was mounting. Importantly, these loans were not used for productive purposes, but for consumption, often by undemocratic, military regimes.

### 3. Mexico

- Decline in the world price of oil in 1981
- Large current a/c deficit and budget deficit
- High real interest rates and strong dollar
- The central bank lost large amounts of reserves
- Aug 12, 1982: **Mexico could not meet debt service payments**
  - She had nearly run out of reserves of currencies needed to make payments.
- Entered into debt negotiations with commercial banks, IMF
  - A moratorium on payments of principal to commercial banks, and rescheduling of payments.
- **Commercial banks panicked:** feared that other developing countries would not be able to make payments.
  - So stopped lending to others, like Brazil and Argentina, even to renew short-term debt.
  - Cut off flow of funds, these countries were also in crisis.
  - They were in a position that they couldn't even roll-over short-term debt. Had to repay accumulated debt right away.
  - Impossible to do, so other countries had to default too—like a run on a bank.
- **Sovereign debt and Contract Enforcement**
  - The basic principle to be understood here is that while countries don't go bankrupt, they don't have to pay their debts either. Think about debt contracts in general. If you fail to pay debts, what can happen?
    1. Your assets may be seized.
    2. Your reputation may be ruined.
    3. You may be punished by being sent to prison.
  - In the US, bankruptcy laws effectively eliminate 3 and ameliorate 1. Reputation often plays an important role. In many ways the situation is similar for developing countries. Effectively, most assets cannot be seized by the US and punishment such as military invasion is extremely unlikely. Reputation and the loss of future loans plays a critical role.

- For developing countries, the main potential threats are:
  1. Seizure of assets- difficult
  2. Exclusion from future borrowing
  3. Reduction in the gains from trade, could only do so by barter.

## 5. **The IMF Role**

- Under Bretton Woods, the IMF loaned reserves currencies to help countries maintain their fixed er.
- Now IMF extending role: lending to countries unable to get loans from private sources.
- It would extend loans under conditions (conditionality): include macroeconomic stabilization programs
  - Cut money creation, cut G, and improve CA.
  - Often cut popular gov't programs like subsidies for basic food goods. These conditions made populations angry with the IMF.
- But, conditionality serves a purpose → to reassure private banks that policies in the country were being altered to make them less risky customers.
- Also IMF coordinated bank lending by private banks to the countries.

## 6. **Solutions to the Debt Crisis:**

- *1985: Baker Plan*
  - Stretch out the repayment schedule (turn short term debt into long term debt and pay interest on debt not principal)
  - Financial support from IMF, World Bank in return for long-term economic reforms
  - No reduction in the debt burden
  - Moral hazard problem if debt burden is not reduced
  - Result: crisis lingered without improving.
    - Low output growth
    - Burden of debt and high taxes prevented countries from long term growth which would be the only way to repay the debt.
- *1989: Brady Plan*
  - Recognizes that full repayment was not realistic → provide some debt relief in the hope of stimulating growth.
  - Basic elements:
    - Through orderly negotiation, reduce the debt burden by
      - Lowering interest rates, or
      - Decreasing the principal
      - Put pressure on commercial banks to forgive part of the debt
  - Free-rider problem:
    - Individual bank gains if other banks reduce debt: no bank will want to go first.

- Role for IMF: move more quickly in disbursing funds and guarantee new bond issues so countries can retire the old debt.
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**Debt Reduction is in several forms:**

1. **Debt forgiveness:** creditor write-off debt. Hard to coordinate.
2. **Debt buyback:** creditors not expected to be repaid in full amount, debt contract trade in capital market for a fraction of their initial value. Means that countries could buy back their troubled debt themselves

Under the Brady plan, debt is to be bought back at current market levels. For example, if Mexican debt is worth 50 cents on the dollar, then Mexico can buyback its debt at that price, not the full price. This supposedly helps out since LDC governments pay less.

- **Problem:** Suppose Mexico owes \$1 billion in nominal debt. At current market prices, this is worth \$500 million. It buys back \$100 million of nominal debt at \$50 million. What is the remaining debt worth? It should be worth \$450, but if some of the debt is retires the remaining debt will likely go up in price. So Mexico can't pay off debt at half price.
- There is also a **moral hazard problem** here since countries which paid their debt in the past will now have to pay more whereas irresponsible countries can buy back the debt for less.

3. **Third-party buy backs:** IMF buys the debt.

Some economists argue that debt forgiveness is the best solution. Why?

1. Loans were made to undemocratic regimes.
2. Loans won't be paid anyway, so why not forgive.

The counter argument is that:

1. Loans were made to middle income countries, not the poorest and forgiveness would involve a transfer of resources.
2. Moral hazard.

**Result:** Mexico and other countries reduced debt and growth resumes. Capital inflows resumed as countries became more attractive place to invest in—and US interest rates dropped.

## **Case Study: The Mexican (Argentine) Peso Crisis, 1994-95**

Before the crisis (1989-93):

- Large capital inflows into country
  - Low inflation and budget deficit
  - Lower trade barriers and NAFTA
  - Privatization of public enterprises
  - Restructuring of Mexican foreign debt → Brady Plan
  - Increasing foreign reserves b/c of capital inflow.

There was evidence that Mexican and Argentine Pesos were overvalued.

- There was high unemployment
- Growing CA deficits and NAFTA (peso overvalued) and slow growth.
- This indicates that there is room for expansionary monetary policy, but cannot b/c is fixed to \$.
- Political instability looming as presidential candidate assassinated and interior minister resigned.
- US interest rate increase in 1994 causing pressure on peso to devalue.

### **Mexico**

- Experienced a worsening situation over 1994:
- Chiapas peasant rebellion (Zapatistas) and assassination of ruling party's presidential candidate (Colosio).
- Recovery in industrial countries make them better investments, so K inflows slow down.
- The gov't replaces *Cetes* by *Tesobonos* (ST debt indexed to the \$) to make it easier to attract K.
- Also, gov't seemed to relax fiscal and monetary discipline before the election.
- Currency crisis comes when the new gov't (Zedillo) installed.
- Market expectations became pessimistic (people could feel a panic coming on).
- Self-fulfilling speculative attack: possibility of an attack became the fact of an attack.
  - There were rumors of a devaluation → large K outflow, depleting foreign reserves.
- Mexico devalued the peso by 15%, but this was seen as inadequate, and only further undermined confidence in regime and Mexican policies in general. Why?
  - By consulting business leaders about the plan, the government in effect gave Mexican insiders the opportunity to make profits at the expense of uninformed foreign investors, helping to discredit the policy.
  - Mexican officials managed to convey a sense of both arrogance and incompetence to foreign investors in the days immediately following the devaluation.
- Peso fell to 50% of pre-crisis level, increased import prices led to increasing inflation

- Govt. unable to roll over *Tesobonos*.
  - Lower value of the peso relative to the \$ make *Tesobonos* \$ debt more expensive to pay back in peso terms.
- There was a run on the peso and on short term Mexican gov't paper.
- In order to stabilize the peso, interest rates were raised to over 80%. This decreased domestic demand and real GDP fell by 7% in the year after crisis.

Fears that the crisis would undermine Mexico's political stability, the US engineered massive loan, which caused confidence and growth to resume. The loan was repaid ahead of schedule (3 years early), due to regaining access to international capital markets.

- Loan
  - Loan \$12.5 bn, IMF \$17.8 bn
  - Why? US fear that instability would affect US b/c of close trade ties.
- Austerity
  - Part of the deal was a fiscal cut back → decline in output (dropped 10% in 1995)
  - But CA strongly positive → replenish \$ reserves

**Argentina** felt immune to contagion due to currency board arrangement.

- Very little trade linkage b/w Mexico and Argentina, but speculators attacked anyway.
- Presumably, speculators thought that Argentina would abandon currency board in order to fight unemployment.
- As speculators sold pesos, govt. reserves were depleted, which, under a currency board means that the money supply decreased.
- This led to a banking crisis which contributed to a mild economic downturn.
- International official loans, albeit on a smaller scale than Mexico's, were needed to prop up the banking system.

Unlike Mexico, Argentina hung onto ER regime and did not devalue, hoping that markets would if it was fully committed and pressure would ease. In 1996, growth resumed.

The Latin crises thus share some common features with the European experience but also show some strong differences.

- The most striking commonality was the apparent failure of financial markets to anticipate the crises, or even give any weight to the possibility of a crisis, until very late in the game - in spite of widely circulated warnings by economists that such crises might be brewing.
- The most striking difference was in the aftermath of crisis. Suppose that one thinks of Britain and France as representing one matched pair - a country that gave in to the pressure, and one that did not - while Mexico and Argentina are another.
- In the first case the devaluing country actually did very well post-devaluation; the non-devaluing country did less well, but did not suffer any dramatic catastrophe.

- In the second case both countries suffered almost incredibly severe recessions, but the devaluing country was worse hit, at least initially.

"Currency Crises and Collapses" (with I. Goldfajn and R. O. Valdes), Brookings Papers on Economic Activity, Brookings Institution, Washington, 2, 1995

### *Case Study: Asian Currency Crisis, 1997*

Focus on events in 5 countries: Indonesia, Malaysia, Thailand, S. Korea and Philippines.

Before the crisis:

- Much of their economic activity was supported by capital inflow (from US) and the capital was highly productive
- Private corporations were behind the capital inflow (net government borrowing accounted for 0.5% of GDP).
- Why was so much capital flowing into these countries?
  - Capital market liberalization
  - High economic growth gave confidence in these economies
  - Financial deregulation but not accompanied by adequate supervision, so banks could take in foreign currency risk and maturity risk
  - e fixed do perceived risk low
  - Government gave encouragement to foreign borrowing
- There were few expectations that there would be a sudden break in the capital inflow. The crisis was not anticipated:

Basic Macroeconomics of the crisis:

- Capital inflow dropped from \$93bn to -\$12.1 bn (a \$105bn swing or 11% of pre-shock GDP)
  - 2/3 of capital swing came from commercial bank lending
  - 1/3 of swing came from portfolio equity and non-bank lending
  - From 1992-1996: Five countries had capital inflow = 9% of GDP, in 1997, outflow of 2% GDP.
- From Jan 1, 1997 to end of 1997:
  - Ringgit went from 2.6/\$ to 4/\$
  - Rupiah from 2500/\$ to 8000/\$
  - Won from 800/\$ to 1650/\$
  - Baht from 25/\$ to 55/\$.
- Their er systems had collapsed (see Table 1)
- Stock Market Collapse (see Table 2)
- The banking system was insolvent by the end of the year
- AD had started to fall causing recession (see Table 3)
- The countries hardest hit were: Indonesia, S Korea, Malaysia, Philippines, and Thailand (Asian 5)

**The crisis was not predicted:**

- There was a dramatic shift in expectations: capital flowed in until mid 1997
- Moody's upgraded sovereign debt (except in the Philippines) and the outlook was "stable". Moody's did not downgrade debt until well into the crisis.
- Domestic S and I was high indicating robust economic growth
- Loan spreads were declining before the crisis (indicating strong growth in firm performance). Risk premia actually declined 1995-97.
- Foreign banks dramatically increased lending to E Asian financial Institutions, corporations in 1996 (24% increase), early 1997 (10% increase)
- IMF gave countries good marks, and professional risk assessors missed the crisis.
- *The Economist* argues in March 1997 that the export slowdown is only temporary, nothing to worry about.

There were signs of growing risk:

- Thailand, Malaysia, Indonesia had:
  - **Increasing CA deficits** and pressure on the currency to appreciate b/c of huge capital inflow (demand for currency increasing).
  - **Weak banking sector** due to risky ventures in real estate and huge capital inflow put pressure on underdeveloped financial systems.
  - They were warned by IMF in 1996, but warnings ignored.
- **CA deficits:** Export Market began to decline. (see Table 7)
  - This was due to an appreciation of the dollar against the Yen. Because the Asian currencies were pegged to the dollar, they appreciated as well, making their exports more expensive, and worsening the CA. This also caused a decrease in output growth, falling stock prices, and put financial institutions in a bad spot.
  - Capital inflow also put pressure on currencies to appreciate
- **Banking Sector:** There was a rapid increase in commercial bank credit and short term foreign debt: (see Tables, 4, 5, 6); Stock Markets (see Table 2).
  - Due to a low interest rate in the US, banks borrowed in \$ from US lenders (at 4-5%) and lent the money in domestic currency at home at a higher interest rate (8%). So, these banks made a huge profit.
  - They borrowed short from offshore (abroad) and then lent long onshore (at home). Banks can do this b/c not everyone needs their money back at the same time. But...all of a sudden, everyone wanted their money back!
  - *So banks were exposed to foreign exchange risk and had a maturity mismatch on their balance sheet.*
  - When their er collapsed, the value of the banks' \$ denominated liabilities increased while their assets remained constant. Forced to recall loans → less spending → lower AD → panic.
  - Bank owners were not required to put down sufficient capital to cover bad loans, so loans had to be recalled.

### The Triggering Effects of the Crisis:

- Thailand and the fall of the Baht:
  - CA deficit was growing (exports were slowing down (the previous inflow was essentially borrowing to buy foreign goods)) → 8% GDP in 1996.
  - Many concerned that the baht was overvalued → money started flowing out.
  - Financial worries intensify:
    - The Bank of Thailand lent over 200bn Baht to financial institutions → bank failures → money flowing out.
    - Thai government withdrew support from largest finance company → company fails on May 23 and creditors incurred losses
    - 16 finance companies suspended
    - Money starts flowing out.
  - CB defends e-r, so they purchased bahts and sold \$
    - PM assures “no devaluation” on June 30
    - Currency reserves are depleted defending the Baht
  - Baht devalues from 25 to 29 baht/\$ (15-20%)
  - Authorities thought that lower baht would drive up exports and all would be well after a period of hardship. Went to the IMF to borrow reserves in order to defend 29b/\$ e-r.
  - Fall of the Baht surprises investors, attacks begin on other currencies in the region.

### Contagion (“Bahtulism”):

- July 14, Malaysia abandons defense of the Ringitt, Philippines seeks assistance from IMF
- Malaysian PM blames currency speculators for the crisis
- August 14, Indonesia floats the Ruppiah
- October 8, Indonesia asks the IMF for assistance
- October 20-23, Hong Kong Stock Market plunges
- October 27, global stock market meltdown, DJIA loses 7% in a single day
- Nov 21, S Korea announces it will seek IMF Assistance

### IMF Assistance

- IMF requires following conditions in order to receive loan: (recall **conditionality**)
  - Must increase  $r$  in order to attract money back → decrease money supply.
  - Govt. budget surplus should be increased to improve CA:
  - $CA = (S - I) + (T - G)$ : decrease  $G$ , also the increase in  $r$  will increase  $S$ , decr.  $I$ .
  - Reform financial system: close insolvent banks immediately.
  - The IMF policy of bank closure prompted panic!
  - These measures caused increased outflow and the e-r went to 55b/\$.

- The banks were closed but had no deposit insurance; people see risk of more closings in future.
- Higher interest rate (imposed by the IMF) decreased domestic I, less AD. Even in support of confirmed orders abroad, firms could not obtain working capital.
- Businesses failed, formerly good loans turned bad, fewer bank deposits.
- E depreciation (caused by k outflow) caused Liabilities > Assets → more bank failures.
- IMF policy of immediate bank closures → panic → “contagion effect” → even good banks were “run-on” and became insolvent.
- Foreigners who had lent money to Thai banks saw trouble coming, wanted to recall loans, but did not want to cause collapse. But govt. could not guarantee loans because it had no reserves left to cover the short-term debt. Therefore loans were pulled out, and e-r collapsed. IMF could not lend enough to defend e-r.
- Moody’s downgrade sovereign debt to “junk bond” status.

#### IMF Policies:

- Fiscal policy: to support monetary contraction, defend e-r, provide funds to inject into financial system.
  - In Asia, caused AD to fall → recession.
- Bank Closures: limit loss accumulation; restore confidence.
  - In Asia, fueled panic and bank runs.
- Enforcement of k-adequacy standards: return banks to a solid footing.
  - Bank recapitalization → credit crunch → increase in financial distress for firms → increase in non-performing loans.
- Tight M policy: to defend e-r.
  - In Asia, caused firms to default on loans and go bankrupt
- Debt repayment: “bailout funds”.
- Non-financial structural changes: reducing tariffs, open sectors for foreign I, reduce monopoly powers.

#### Lessons:

- Let currency float and save reserves to cover debts to avoid panics.
- Should increase transparency of the banking system (not borrow short in \$ and lend long in local currency)
- Tobin Tax to prevent speculative attacks.

**Malaysia** placed on capital controls to stop outflow. However, this is not a good solution b/c IMF won't lend to countries with capital controls, and the policy will curb future foreign investment.

### **Capital controls:**

- One solution would be to impose capital controls to prevent short-term capital *inflow*, so any money that comes in must stay for a specified period - this will prevent hasty withdrawals and panic situations.
- **Tobin Tax** = tax short-term capital inflows in order to deal with occasional instabilities in private markets: "sand in the wheels of int'l capitalism".
- Also, K controls / Tobin taxes not good for big banks → big banks are in rich countries → rich countries control IMF → therefore IMF is anti K controls.
- Have international lender of last resort (Alan Meltzer, 1998):
  - Contrast Asian crisis with US S+L crisis, housing loans went bad when market collapsed - S+L's became insolvent. Govt. didn't make them close, just keep servicing good loans, don't make any new loans and no dividends to shareholders. This prevented owners/managers from taking existing assets as dividends or loans to self.
  - Need to reform IMF policy, make less rigid - policies that work well in normal times are disastrous in times of panic → First restore confidence.
  - Need an int'l bankruptcy mechanism. Non-gov't. negotiations needed to handle foreign private debt. Write down debts to restructure loan contracts by reducing interest or principal, to make sure you get something back. Also a debt-equity swap.

### **Indonesia vs. the IMF**

- January marked by IMF criticism of Indonesian failure to abide by the agreement
- February, rupiah gyrates widely as Suharto first announces plans for a currency board and fires his central banker, then serves these plans under strong pressure from the IMF and US
- March 2, Indonesia facing hyperinflation, food and fuel prices increases trigger unrest
- May 14, death of student protesters touches off 4 days of rioting in Jakarta, hundreds killed, President Suharto resigns.

### Why do Speculative Attacks occur?

**Speculative Attacks:** traders force a devaluation by “cornering the market” on foreign reserves. When it looks like the CB is going to have to devalue, traders can force its hand.

BOP crises are caused by the self-reinforcing mechanism of expectations:

- Say a government lacks credibility or is thought to be contemplating a devaluation. If this expectation is held by enough people, it will impact the current  $RET_f$  relationship. There will be an increase in the supply of domestic currency, as traders wish to dump the risky currency.

### *Anatomy of a Modern Currency Crisis (from R. Dornbusch, “A Primer on Emerging Market Crises” 2001.*

There are 3 Types of Vulnerability:

- 1.) Substantially Misaligned Exchange Rate (far away from for-ex market equilibrium)
  - It is often deemed necessary to have an overvalued ER to fight inflation.
  - Need to keep interest rates high and money growth low. This results in widening of CA deficit.
  - This is not a long run sustainable program, not self correcting. A speculative attack will occur when reserves become low.
- 2.) Large amount of vulnerable or non-performing loans in banking sector.
  - Non-performing loans. If interest rates are lowered, the currency comes under attack.
  - If rates are raised, the loan portfolio is worse b/c borrowers cannot repay their debt → “Crony capitalism”.
- 3.) Mismatches in loan exposure:
  - a.) Maturity mismatch: long term loans made with short term debt.
  - b.) Currency mismatches: loans made in domestic currency, debt is in foreign currency

Look at ratio of Short term debt to Foreign Exchange reserves in Asia 1996:

| Country   | Short term debt (\$bil) | Reserves (\$bil) | Ratio (ST debt/res) |
|-----------|-------------------------|------------------|---------------------|
| Indonesia | 34.2                    | 19.3             | 1.8                 |
| Thailand  | 45.7                    | 38.7             | 1.2                 |
| Korea     | 67.5                    | 34.1             | 2.0                 |

- A ratio greater than one does not necessarily imply an impending crisis, as long as debt is rolled over, but it is a red flag for vulnerability.
- As soon as there is a sign of trouble, every creditor has an incentive to pull out, because they know that there is not enough reserves to pay everyone.

Problem with Developing Economies:

- Capital markets are “thin”, so a few trades can have a large impact.
- When problems occur in one sector, capital is moved offshore, not to another sector.

Timing of Crises:

- Unsustainable situations can persist for a long time. Crises tend to happen after elections, because creditors hope that whoever wins will take steps to fix things, when it doesn't happen, capital flight results. Mexico, Russia 1998.

The larger the mismatches, the larger the crises:

Crisis is technically caused by the speculative attack (driven by expectations of devaluation), but ultimately caused by policies of the attacked country.

### “Self-Fulfilling Crises”

- However, some countries claim to be victims of unnecessary crises. Their fundamentals are sound, and policies are long-run sustainable.
- The problem is that both pessimism and optimism are *self-confirming*. If investors believe that it's OK, then it's OK, if they believe that there will be a crisis, then, there will be a crisis.

There usually must be a sign of weakness to foster pessimism.

### “Herding”

- Agents tend to sell just because others are selling. (Survey of investors in 1987 stock market crash confirmed this). Each may suppose that others have inside information.

### Contagion

Currency crises tend to occur in regional waves: ERM 1992-93, Latin America 1994-95, Asia 1997-98. Why?

- Real linkages – trade. If one country devalues, then the price of their exports will decrease, so other countries selling the same product will also have to lower

- prices of exports. This may weaken fundamentals enough to trigger crisis. Evidence is weak here.
- Perceived as a group with vague similarities – basically irrational behavior.

### *Case Study: The Current Argentine Crisis*

Basic Facts about Argentina's economy:

- Argentina is a country richly endowed in natural resources in which agriculture and agro-industries have traditionally been important.
- Argentina was self-sufficient in petroleum up to the 1980s, but investment following privatization and deregulation in the early to mid-1990s turned the country into a net exporter of oil and natural gas.
- Manufacturing output recovered in the 1990s, after two decades of stagnation. A more open trade and investment environment, and the accumulated real appreciation of the peso after 1991, changed the structure of industry: foreign firms now account for a higher share of total output.
- The services sector accounts for around 60% of GDP, and privatization has helped to raise efficiency in communications, electricity distribution, finance and transport. [Example: before it took 4 months to get a telephone line now it take less than 24 hours.]
- Modest investment is partly financed by foreign savings
- Economic activity is unevenly distributed. Less than one-fifth of the continental area—the federal district and Buenos Aires, Cordoba and Santa Fe provinces—accounts for 64% of the population, 80% of industrial production and 92% of total agricultural output.

### Background to Argentine Crisis

- In the 1990s, Argentina was Latin America's star.
- Even before the latest disaster, Argentina's story is that of a decline unparalleled in modern times.
  - Argentina in the 19th century attracted a flood of British capital and European immigrants. By 1913, having grown at an annual average rate of 5% for the previous three decades, it was one of the world's ten richest countries, ahead of France and Germany.
  - However, exporting beef and grain to Britain was no longer a passport to prosperity. Argentina's leaders, starting with Juan Domingo Peron (a populist army colonel who ruled from 1946 to 1955) aggravated their country's problems by retreating into protectionism (reducing growth) and

financing generous benefits to workers by printing money (causing inflation).

- Four decades of political and economic instability culminated in the restoration of democracy in 1983. But the economy still languished: between 1976 and 1989, income per person shrank by more than 1% per year.
- The government printed money to finance budget deficits (inflation tax) causing hyperinflation in 1989.
- Two bouts of hyperinflation, and two banking collapses, destroyed confidence in both the peso and economic policy. Argentines preferred to use dollars, and the wealthy shipped their capital abroad.

### Reforms of the 1990's

- In 1991, Carlos Menem, a Peronist, and Domingo Cavallo, his economy minister, set out to reverse this decline through free-market reforms such as open trade (MERCOSUR).
- Their cornerstone was a currency board, under which the peso was fixed (freely convertible) by law at par to the dollar (1 peso=\$1), and the money supply restricted to the level of hard-currency reserves.
- Mr Cavallo called this “**convertibility**”, deliberately harking back to Argentina's golden age: for much of the period before 1935, the country had operated a currency board, in which a body known as the Caja de Conversion was charged with maintaining the peso's value in gold.
- Convertibility involved the modernization of the economy. It invited foreign banks to open. GDP increased by 52% during the 1990's.
- Convertibility instituted fiscal reform
  - Tax sharing scheme: the Federal govt collects taxes and redistributes to provinces via a formula (from rich to poor).
  - This gave the governors of the provinces more power (they are spending) promoting a populist behavior. The domestic failure is not controlling expenditures.
- Convertibility instituted monetary reform
  - Inflation tax was eliminated
  - inflation was reduced
- Capital flowed in as the risk of devaluation was eliminated.
- Mr Menem privatized almost everything the state owned, except for a couple of banks.
- Between 1991 and 1997, Argentina's economy grew at an annual average rate of 6.1%, the highest in the region (see chart 1). Productivity increased as investment modernized farms, factories, and ports.



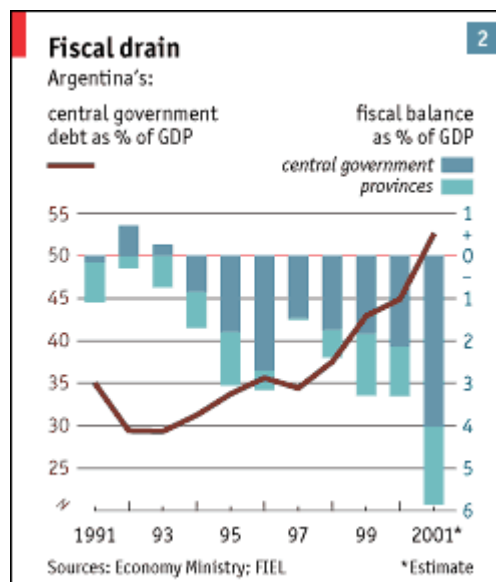
- The currency board was a demanding regime—interest rates were set by the United States' Federal Reserve, plus whatever risk-margin lenders assigned to Argentina, the government had few tools to respond to outside events.
- The first difficulty came in 1995, after Mexico had been forced to devalue its peso. Nervous investors pulled their money from Argentina: the economy shrank by 4%, and a dozen banks collapsed.
- The government responded effectively: it tightened bank regulation and capital requirements, and encouraged foreign banks to take over weaker local ones. By the next year, the economy was growing strongly again.

### How did it all end so badly? Two theories:

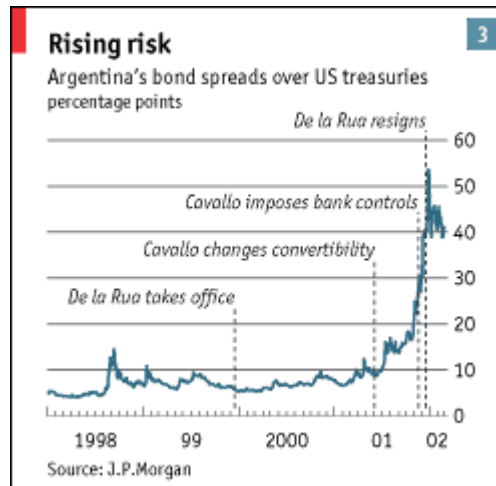
1. For some economists, the answer starts with **the currency board** itself. But, there were four external shocks.
  - Prices for Argentina's commodities stopped rising (slowing growth);
  - the cost of capital for emerging economies began to go up (slowing I);
  - the dollar appreciated against other currencies (b/c the peso is pegged at par to the \$, peso is also appreciating → decline in CA);
  - And Brazil, Argentina's main trading partner, devalued (again, decline in CA).

In normal circumstances, exchange rates can adjust to take account of one country's inflation rate relative to others. But, Argentina could not do that under the currency board. The Argentine government could argue that since 1996, as a result of deflation in the economy, with nominal falls in wages, the country has made up at least part of the gap.

- In mid-1998, Argentine officials told visitors that the economy would grow at 6% per year—just as it was slipping into a recession. Three years later, with no growth and no prospect of growth, investors finally realized that Argentina's debt might be “unpayable”.
  - Argentina found it hard to shake off recession because it was not competitive enough. Exports grew (from \$12 billion in 1991 to \$27 billion last year). But, many industries could not compete abroad, especially after Brazil's devaluation.
  - Unable to devalue, Argentina could only become more competitive if prices fell. As it was, deflation came from recession, falling wages and rising unemployment.
  - Telecoms, electricity, water and some transport services became private monopolies; their rates went up in line with US inflation, even though prices in Argentina were falling. And interest rates remained high. Banks lent \$ at 25%, even though the risk was, in theory, low.
2. Other economists argue that it was not the currency board itself, but its undermining by **loose fiscal policy**.
- Having won a second term, Mr Menem dispensed with Mr Cavallo in 1996. But investors were happy to go on lending to the government.
  - Instead of printing money, as in the bad old days, it printed bonds to finance its fiscal deficit. In addition, Mr Menem concentrated on trying to buy political support for an unconstitutional third term.
  - Argentina's public debt rose steadily (see chart 2).



- The share of public spending in GDP rose from 27% in 1995 to 30% in 2000.
- Apart from rising debt payments, two things accounted for most of the increase.
  - First, economic growth had not prevented a rise in unemployment, to 12% in 1994 from privatization (in most cases). To quell social unrest, provincial governors padded their payrolls.
  - Second, the government had embarked on an ambitious pension reform from a state pay-as-you-go system to individual private accounts. For the government, the transition costs of this reform reached 3% of GDP in 2000, as it still had to pay pensioners but no longer received contributions.
- The country's tax system is inefficient, and tax evasion is high. Whereas Brazil collects more than 30% of GDP in taxes, Argentina collects just 21% of GDP. And under a system dating from 1853, while the central government collects the taxes, the provinces were (until last year) guaranteed an automatic share of the revenues. That gave them no incentive to spend money efficiently. In addition, the provincial governors wanted to receive the same amount of funds when economic growth was 8% a year but the last 4 years, growth was -4%.
- Another factor in Argentina's downfall was political mismanagement. Mr de la Rúa's (successor to Mr. Menem) Alliance government was weak and indecisive.
  - The president lacked a majority in Congress, and was further weakened when his vice-president resigned.
  - In March 2001, Mr de la Rúa switched Ricardo Lopez Murphy, his defense minister and a respected economist, to the economy ministry, with a brief to balance the budget. When Mr Lopez promptly announced sweeping cuts in public spending, Mr de la Rúa failed to back him.
- The origins of the disaster came from the man responsible for the Argentine “miracle” of the 1990s: Mr Cavallo, replaced Mr Lopez.
  - He fiddled with tariffs and, fatally, with the currency board itself, so that the peso was pegged for exporters half to the dollar, half to the euro. This was, in itself, a good idea, but the timing was disastrous. By raising the idea of devaluation, it spooked foreign investors. They demanded a higher risk premium for holding Argentine bonds, driving up interest rates and deepening the recession (see chart 3).



- One of the main achievements of the Menem government had been to mould a strong banking system and an independent central bank.
  - Mr Cavallo proceeded to destroy both the banking system and CB. Not only did he oust Pedro Pou, the Central Bank's governor, and ease banks' reserve requirements, but he asked the financial system to pay for the government. CB independence was destroyed → capital flight.
- Following K flight, Mr Cavallo sought money elsewhere. He persuaded local pension funds into buying government paper and local banks into swapping their holdings of government bonds in return for low-interest loans. He asked the IMF to lend Argentina \$8 billion, on top of the \$14 billion provided in January 2001.
- These actions triggered a bank run. Between July and November, Argentines withdrew some \$15 billion from the banks. Three local banks (Banco de Galicia, and two state banks, Nacion and Provincia de Buenos Aires) were particularly affected.
- On December 1st, Mr Cavallo imposed a ceiling of \$1,000 a month on bank withdrawals and the freezing of checking accounts holding \$10,000 or more and savings accounts with more than \$3,000 in them, the *corralito* (or little fence).
- Three weeks later, rioters (middle classes) took to the streets. First Mr Cavallo and then Mr de la Rúa resigned.

#### Basic Macroeconomics of the Crisis

- By the end of 2001, Argentina defaulted on its \$141 billion public debt, the largest such default by any country in history.
- The peso was fixed by law at parity with the dollar but Mr Duhalde had little choice but to devalue and then float the currency. Already, the peso is trading at 3.9 pesos to the dollar.

- The Convertibility law was also a contractual law—most contracts were made in \$. So the devaluation has added to the financial chaos. Dollar savings have been turned into devalued pesos. [Life time savings are now worthless—that is why the middle classes are so mad] Since January, the banks were closed for all but half a dozen days.
- Money is flying out of Argentina's banks despite the *corralito*—the freezing of deposits.. The courts have supported tens of thousands of depositors, overruling the *corralito* and instructing banks to repay depositors immediately, in full.
- With the banks reportedly losing up to \$300m a week from these judgments, the CB has been printing money to provide them with liquidity, while also burning up its dollar reserves in a vain attempt to stop the peso from plunging.
- The economy has ground almost to a halt, as the chain of payments between consumers, businesses and suppliers has broken down.
- All foreign-exchange transactions require the approval of the Central Bank, which has been slow to authorize them. So imports have all but dried up.
- It is estimated that GDP will contract by 10% this year in addition to a recession that has now lasted for nearly four years. At the current exchange rate, income per person in dollar terms has shrunk from around \$7,000 to just \$3,500, or less than Brazil's.
- Unemployment has risen to 25%; in the cities, 44% of the population is now officially poor, with an income of less than 120 pesos/month.
- But there is a deeper cost. By seizing its citizens' savings, the government has broken a basic contract, and violated the rule of law. Trust between government and citizens have been destroyed.
- Mr Duhalde has a lack of legitimacy. He was not elected by the people → clash between the political class and the citizenry so it is impossible to have any credible economic plan.

What will happen to the banking system and prices?

- Prices
  - Surveys show that the price of a “basic basket” of groceries has risen by up to 50% since the start of the year.
  - Argentines have begun hoarding household supplies. They fear the return of the hyperinflation that they suffered in 1989-90.
  - Mr Duhalde is said to be preparing an emergency food-distribution scheme; he has pondered on price controls, though he admits these would be hard to enforce.
- Banking System
  - The peso's latest plunge was prompted partly by the melting of a freeze on bank savings imposed in December—the *corralito*.

- In January, under public pressure, the Supreme Court ruled the *corralito* unconstitutional.
- There is a cash hemorrhage and unless this stops, many banks may soon collapse.
- Argentines queued at for-ex houses, desperate for \$ at any price. On March 25th, the government imposed controls to calm financial hysteria: the exchange rate for sales of less than \$1,000 to individuals will now be set by the CB
- The government has forced the banks to turn all their \$ loans into pesos at the old rate of one-for-one, while \$ deposits are converted at 1.4 pesos per dollar. The banks will give government bonds to compensate them for this—worth little since the government has defaulted on its debts. And now, the courts are ordering that \$ depositors be refunded at the current exchange rate (which hit 3.9 pesos per dollar), greatly increasing the banks' losses.
- Banks also losing assets on their existing holdings of government debt, and from soaring defaults by firms and individuals, as the economy contracts.
- Recent changes to Argentina's bankruptcy laws have greatly increased firms' freedom to keep their creditors at bay, so many are not even trying to meet their loan repayments. Gabriel Caracciolo of Standard & Poor's believes the banks' combined \$16.5 billion in capital has been wiped out.
- Even some of the country's best-run blue chips—especially those whose revenues are in devalued pesos but whose debts remain in dollars because they borrowed abroad—are throwing up their hands and telling creditors they can't pay. Telecom Argentina became the biggest of the country's privatized utilities to do so, halting repayments of principal on its \$3.4 billion of debts
- Though the foreign banks do not guarantee the deposits of their local subsidiaries, the government hopes that they will feel obliged to recapitalize them, to preserve their worldwide reputation. Mr Caracciolo doubts this.
- The head of the Argentine operations of one European bank says that, although the foreign banks want to stay, their tolerance is low. The government, besides ruining their business, has made them scapegoats.

Charles Calomiris, an economist at New York's Columbia University, points out that **Argentina's collapse is different from previous emerging-market financial crises.**

*“In other crises, the weakness of the banking system created the expectation of future fiscal problems, because of fears the government would have to bail out failed banks.*

*This was the opposite: fiscal weakness led to banking weakness, as the government ended up using the reserves of the whole banking system.”*

### Argentina and the IMF

- The IMF, no matter what it does, as an institution can expect to be criticized.
- IMF was too tolerant for too long of Argentina's combination of fixed exchange rates and fiscal laxity. But so were the Wall Street investment banks. And “convertibility” remained popular in Argentina to the end.
- Some Argentines argue that it was wrong of the IMF to suspend its loan program in December. Argentina is “the guinea pig for the new religion” of floating exchange rates and obliging the private-sector to bear more of the costs of bail-outs.
- IMF support is widely taken to be a stamp of approval for the economic policies of its clients.
- But the Fund is always in a tricky position when financial crises are looming.
  - Does it refuse further assistance and precipitate the crisis; or continue to prop up what may well be an unsustainable situation?
  - Either way, it is bound to be criticized—and either way the crisis will, eventually erupt.
- The IMF and its principal paymasters, the finance ministers from the G7 countries, have made it clear that they want to see a sustainable economic-recovery program in place in Buenos Aires **before** they contemplate additional funds.
  - In particular, there is a moral hazard problem under the tax sharing scheme. Provincial governors have an incentive to spend and get into deficit, then they will receive more money from the Federal government.

### **Sovereign-debt restructuring:**

- Anne Krueger and John Taylor:
  - to increase the flow of funds going to emerging markets, at lower interest rates.
  - The basic thrust of the Krueger proposals is to find a way for sovereign governments struggling with an unsustainable debt burden to reduce the burden without having to default on all their debts.
  - Currently, once a government fails to pay one of its creditors on time, it is usually immediately declared in default on all of them: most loans and

bond issues have cross-default clauses which are triggered as soon as a single default occurs. During the third-world debt crisis of the early 1980s, it was usually possible to get most creditors round a table to work out a restructuring deal: but in those days most lending to emerging-market economies was in the form of syndicated bank lending. Now most lending is in the form of bonds. The proportion of outstanding public external debt owed to private creditors via bonds has shot up from 13% in 1980 to 60% in 2000.

- Bondholders are anonymous and they number in the thousands. So winning agreement from them is much more difficult than doing so with a group of banks. One bondholder can hold out against a restructuring plan with the threat of costly and time-consuming litigation. (One such “hold-out” creditor forced Peru to settle with him directly before a restructuring plan could go ahead.)
- So the IMF is thinking along the lines of the sort of bankruptcy-protection systems some countries have for companies in trouble. The IMF might make its support conditional, for example, on a government's bond issues including "collective-action" clauses making it easier to alter the terms and reschedule if a majority of bond-holders agree (rather than every single one of them).
- Argentina can derive no comfort from the latest reform debate. Any solution will be much too late to help it resolve its current difficulties.
- The IMF wants a more watertight reform of provincial finance, and a more realistic budget. One way of achieving these would be to cut the hordes of political appointees at all levels of government. Such steps are the more urgent since Mr Duhalde faces demands to spend more on the poor, and on propping up the banks. The Fund also wants changes in a new law on bankruptcy (which favors debtors).

Should Argentina have been in a Currency Board?

- **Currency board:** currency backed only by foreign assets, and at an exchange rate fixed by law, rather than by government decision or the market. Each dollar's worth of domestic currency is backed by a dollar's worth of foreign reserves. This rigid link was seen as only one step away from full Dollarization—ie, the use of American dollars rather than domestic currency.

In retrospect was the policy a mistake? Or was the problem simply that the country clung on too long to a policy which had ceased to be appropriate?

- The dollar link had a dramatic impact on expectations and behavior. Inflation fell sharply, and Argentina's economic performance and prospects improved.

- Jeffrey Frankel, an economics professor at Harvard University, had pointed out that Argentina did not fit well with the traditional criteria for an optimal currency-area:
  - it is not small or open
  - it does not have high labor mobility
  - it is not closely correlated with the US economy. Exports to America account for about 10% of total exports. Many other countries have closer trade ties with the United States.
- Dr Frankel pointed out how much some other countries have, ultimately, benefited from weakening their ties with the dollar. Introducing more flexibility at the right moment—when its currency became overvalued—helped Israel, according to Mr Frankel, while he noted that both Mexico and Brazil suffered by clinging on to their exchange-rate pegs for too long.
- The lesson to be drawn from Argentina's painful experience may be that no currency regime can be right for all time.