Lessons from the East Asian Currency Crisis and Recovery

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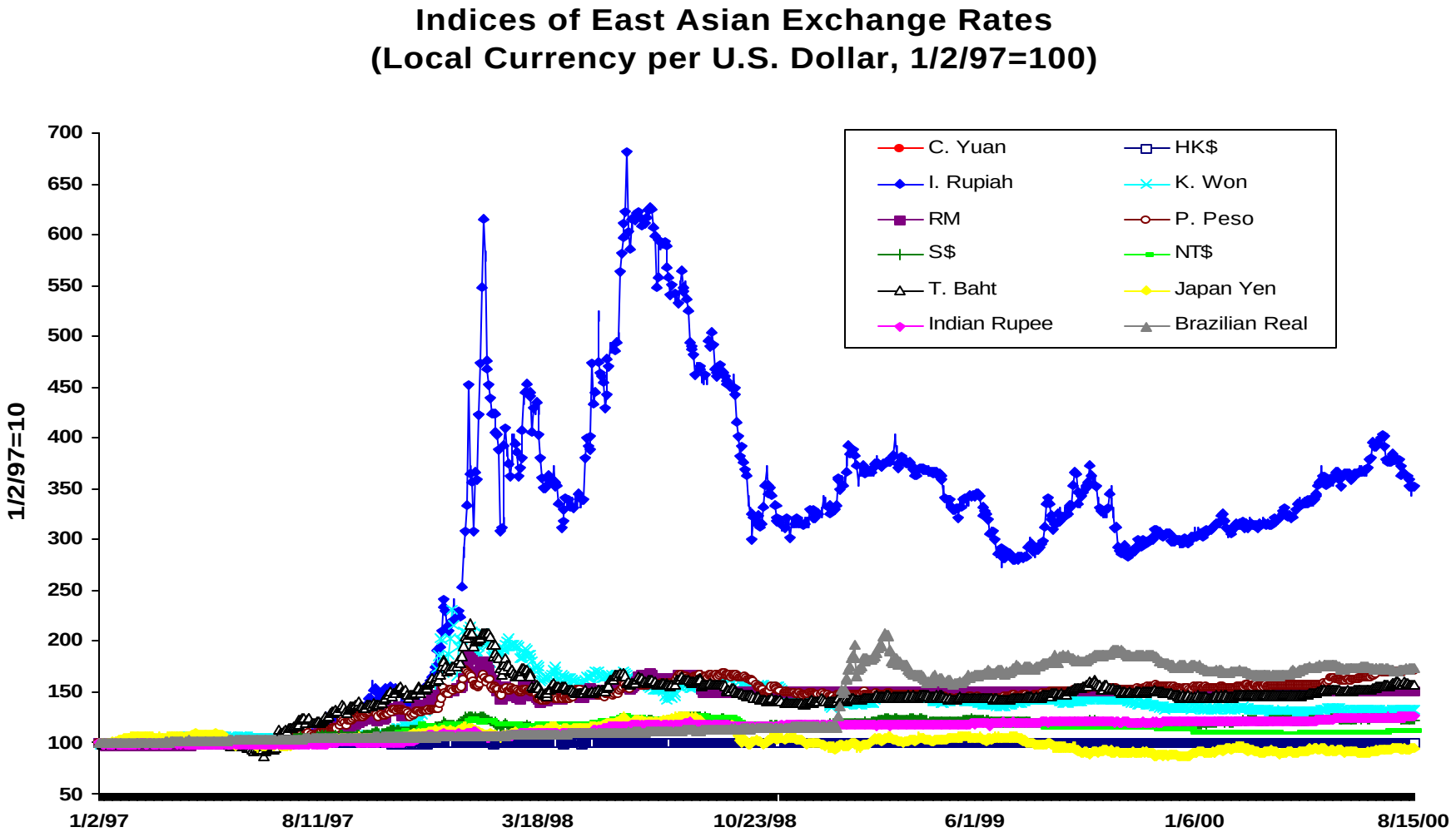
A Brief History

- The East Asian currency crisis began in Thailand in late June of 1997 and essentially stabilized in the last quarter of 1998
- With the exception of two currencies, the Chinese Yuan and the Hong Kong Dollar, all other East Asian currencies lost significant value vis-à-vis the U.S. Dollar, albeit by varying degrees, and did not recover to pre-crisis levels
- Once the exchange rates stabilized at their new (lower) levels, the rates of interest began to fall to more reasonable levels that permit normal real economic activities to resume
- While the declines in real GDP were exceptionally sharp in the affected East Asian economies, the recoveries were also very rapid--by mid-1999 the real GDPs of all of the affected economies began to show positive rates of growth

Indexes of East Asian Exchange Rates: Local Currency per US$ (January 2, 1997=100)



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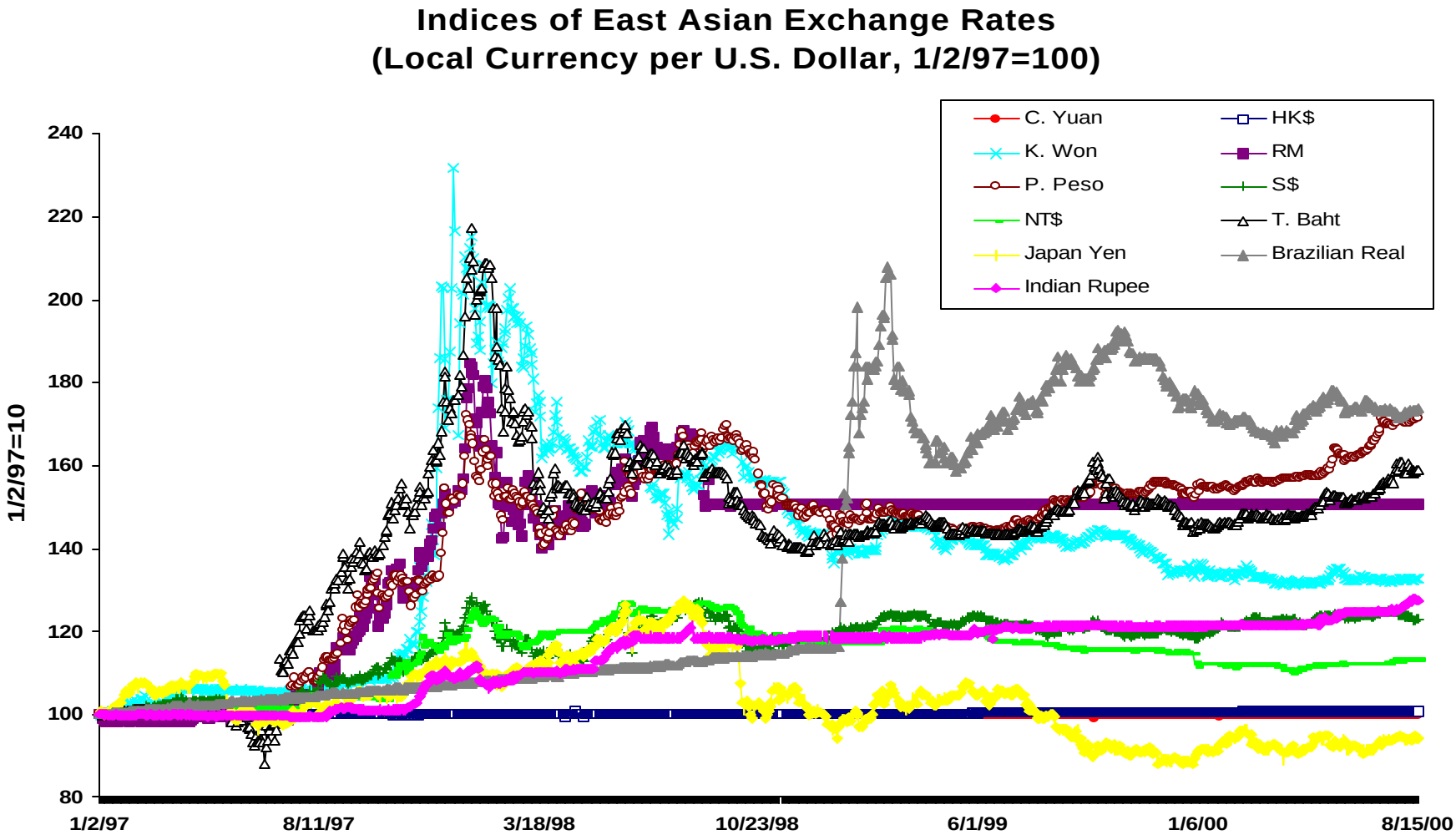
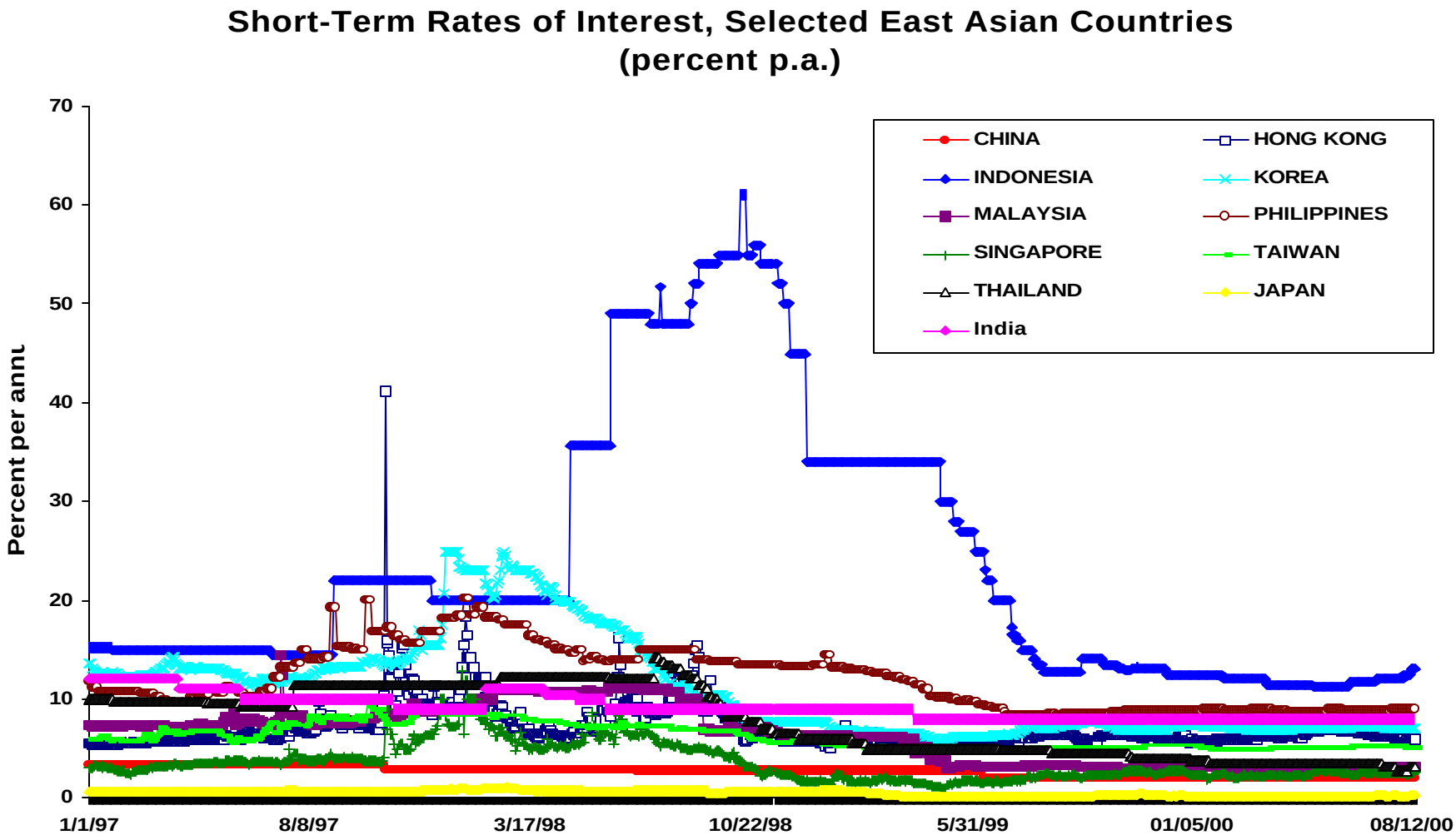
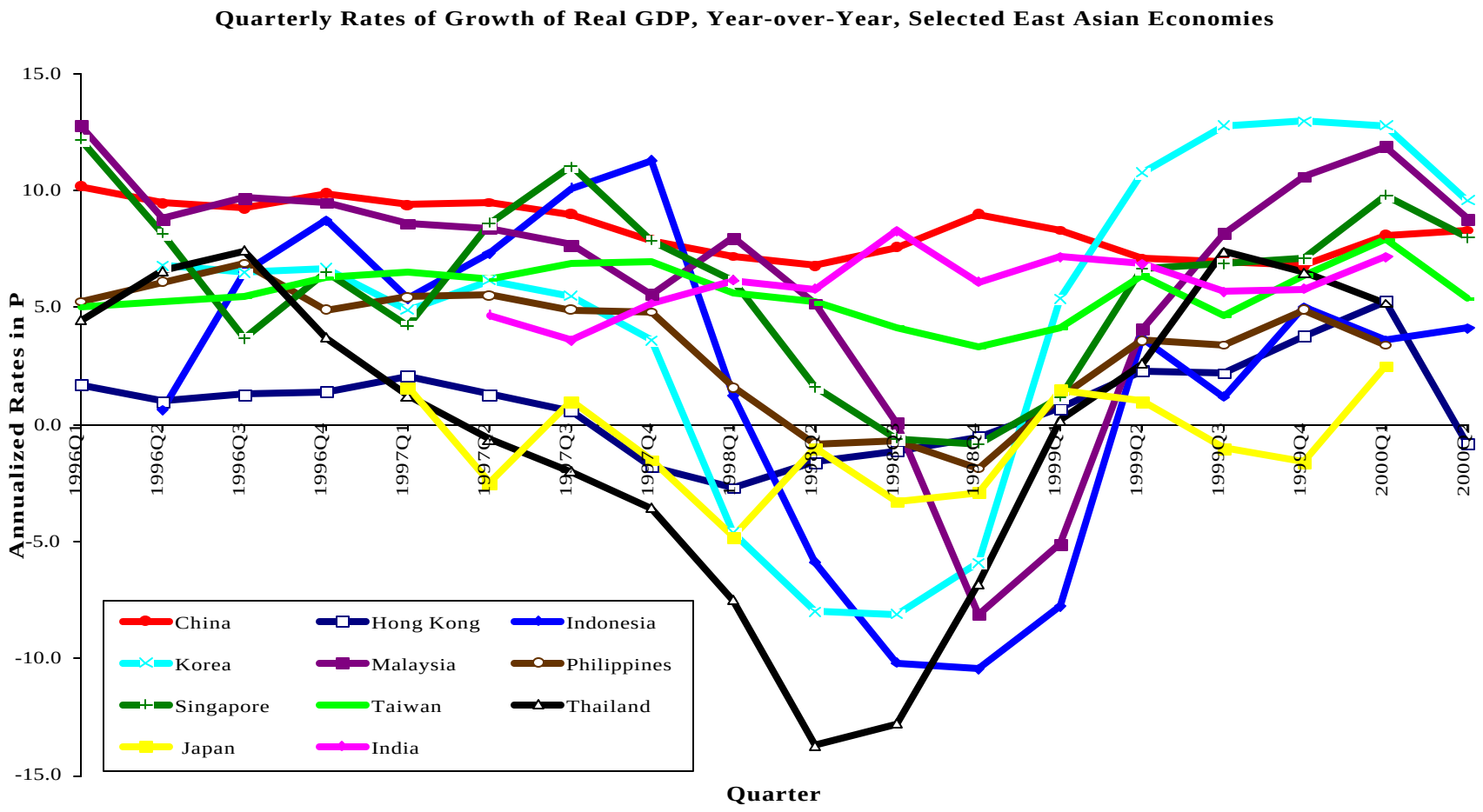


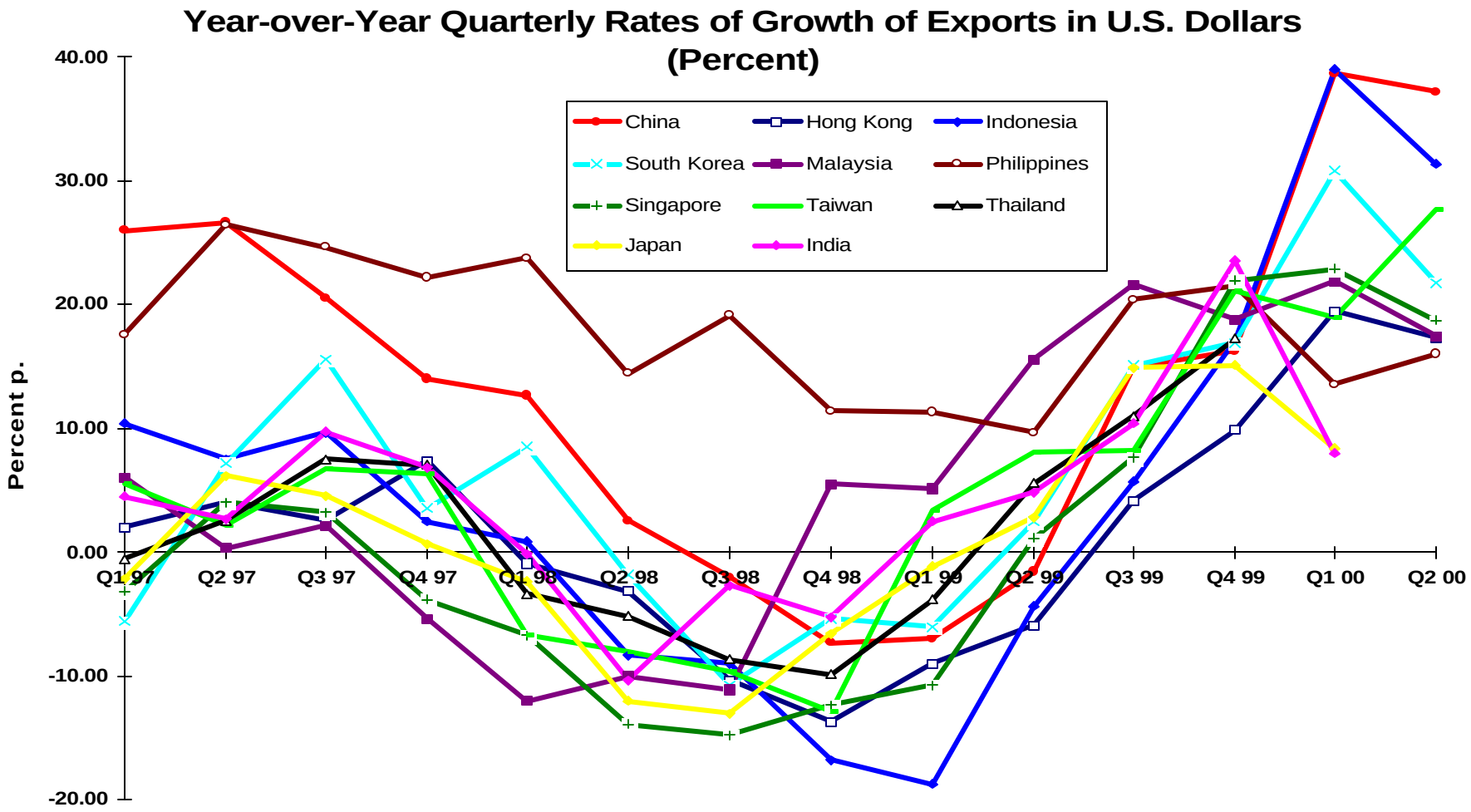
The Interest Rates Have Declined



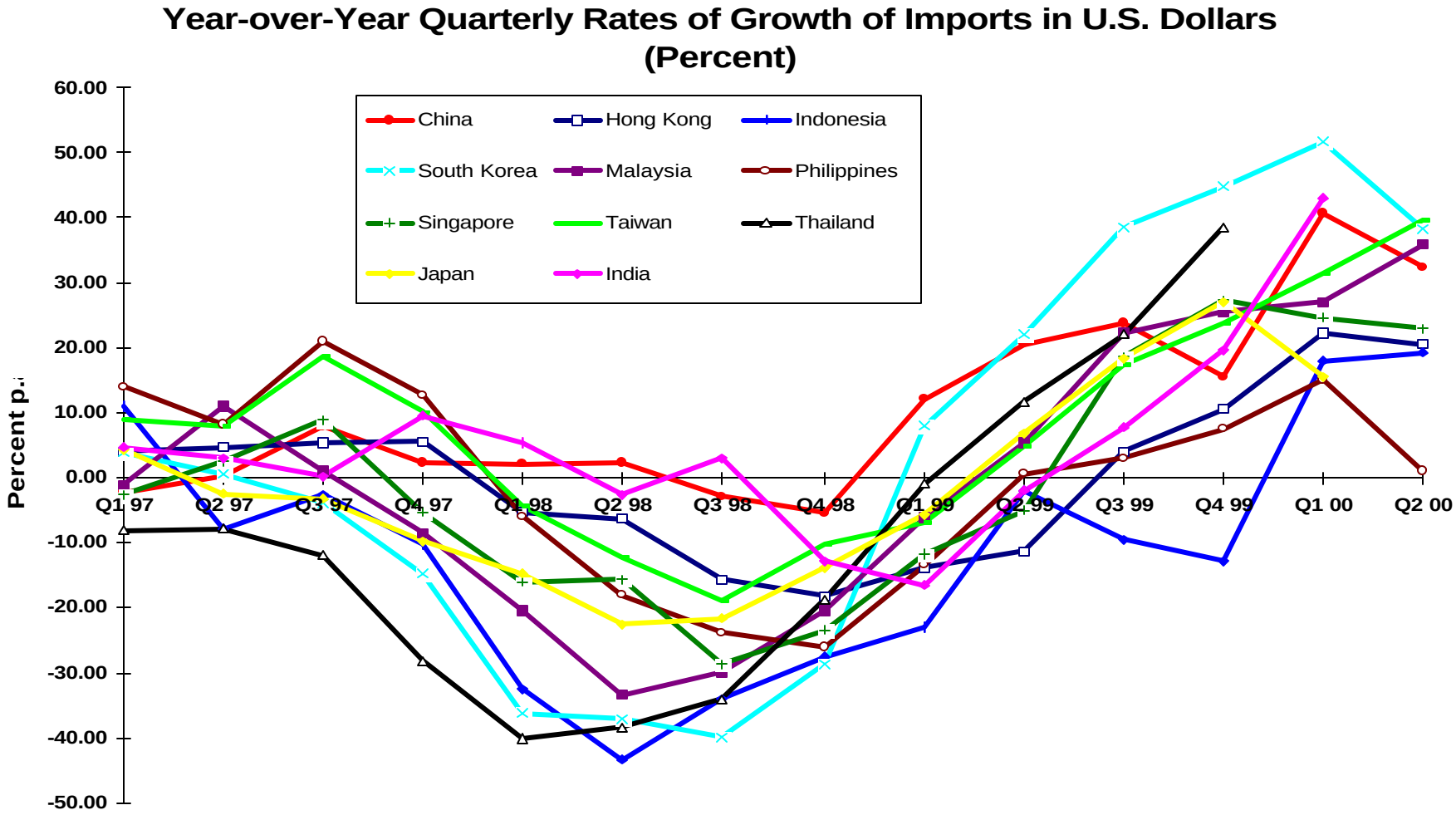
The Rates of Growth of Real GDP Have Turned Significantly Positive



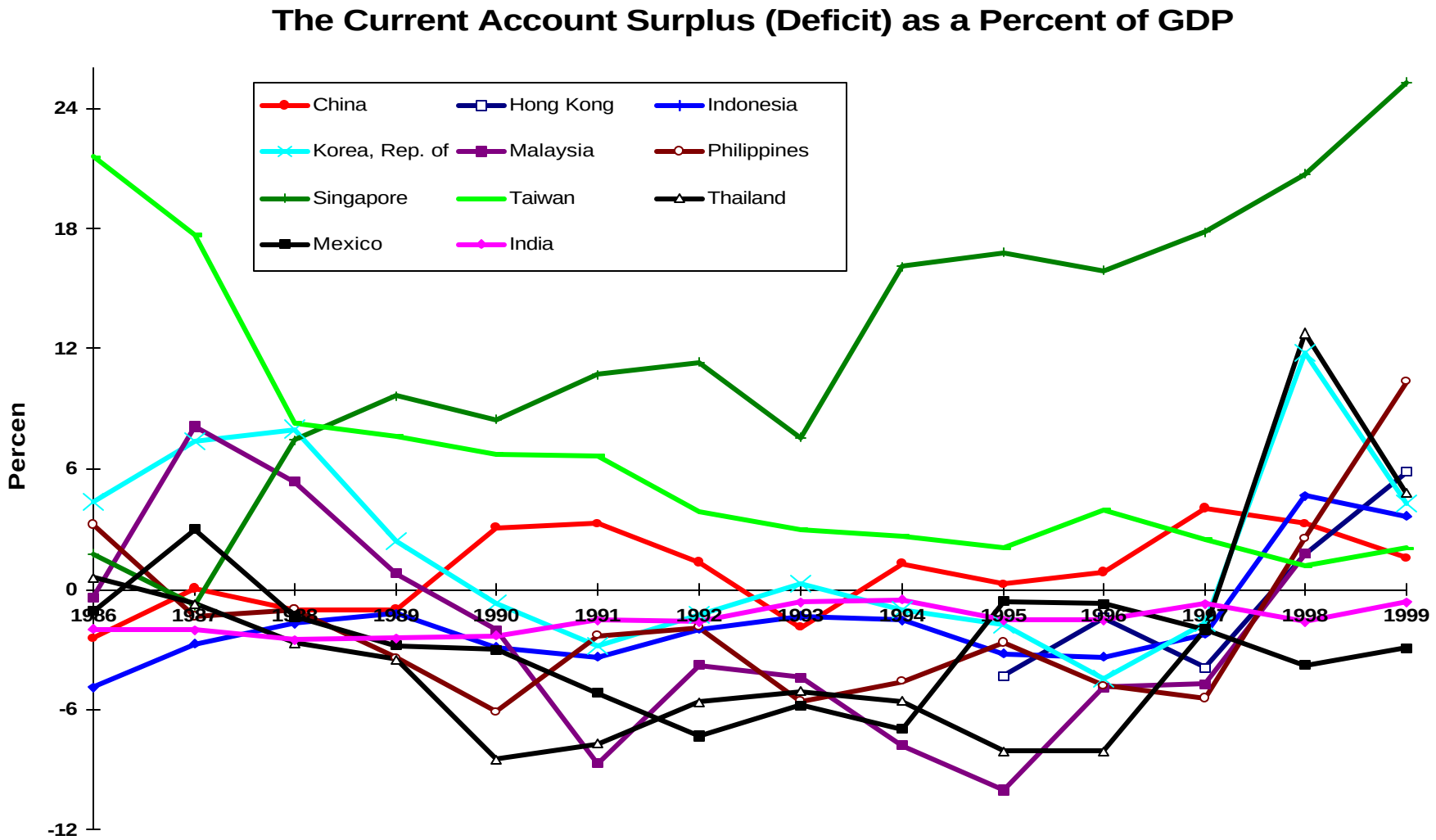
Rates of Growth of Exports in US$ Terms Have Turned Significantly Positive



Rates of Growth of Imports in US$ Terms Have Also Turned Significantly Positive



The Current Account Balances Have Turned Positive



Is the Recovery Real?

- For most of the East Asian economies, the bottom has been reached (0% rate of growth) in 2Q/1999
- The recovery is most tentative in Indonesia, with its political problems
- In terms of quantity, exports have been growing very rapidly
- Foreign exchange reserves have been largely replenished
- Inflation caused by the devaluation has largely subsided
- The stock markets have rebounded
- The recovery has been much stronger than expected because of synchronization across the East Asian economies

Lessons from the East Asian Currency Crisis and Recovery

- In order to draw lessons from the crisis and to prevent its recurrence, one must first identify correctly the fundamental causes of the crisis

Early Warning Signals (1)

- L. J. Lau and and J. S. Park, “Is There a Next Mexico in East As Project LINK World Meeting, Pretoria, South Africa, Sept., 1995; Lau and Park, “Is There a Next Mexico in East Asia?,” Beijing, China, 1996
  - Thailand and Philippines were identified as the most likely candidates as the next Mexico, followed by S. Korea and Indonesia
  - China, Hong Kong, Singapore and Taiwan were identified as the least likely candidates as the next Mexico
- Indicators of potential vulnerability, e.g.
  - Stock of potential short-term foreign-currency liabilities (including portfolio investment and bank loans) relative to foreign exchange reserves
  - Interest rate differential between domestic and foreign currency-denominated loans
  - Real exchange rate appreciation (loss of competitiveness)

Early Warning Signals (2)

- Indicators of economic performance, e.g.
  - Level and rate of change of the marginal efficiency of real capital (rate of return)
  - Rates of return on the stock market relative to the world returns

Fundamental Macroeconomic Causes of the East Asian Currency Crisis

- Savings-investment imbalance--also reflected as current account imbalance
- Dependence on potentially short-term foreign capital (portfolio investment--both equity and debt instruments--and loans) by private investors
  - Equity is better than debt
  - Direct investment is better than portfolio investment
  - Insolvency caused by the revaluation of foreign-currency denominated debts and the rise in the rate of interest
  - Domino effects of insolvency and bankruptcy
  - Problems magnified by high leverage (or high debt to equity ratio)
- Inadequacy of foreign exchange reserves (working capital of a country) for supporting imports, debt service, and (potential) net short-term capital outflows
- Real exchange rate appreciation (loss of competitiveness) due to a domestic rate of inflation higher than the U.S. rate of inflation

Dependence on Potentially Short-Term Foreign Capital

- Dependence on foreign capital per se is not necessarily risky, but dependence on potentially short-term foreign capital, such as foreign portfolio investment and short-term bank loans, that can be withdrawn on short notice, can be risky. Both the foreign portfolio investors and lenders need to be paid, directly or indirectly, in terms of foreign exchange, thus potentially putting tremendous pressure on the exchange rate to devalue, especially if the domestic borrowers do not have matching sources of foreign-currency revenue

Inadequacy of Foreign Exchange Reserves

- The foreign exchange reserves of a country is like the working capital of a firm.
- Traditional yardstick of a level of foreign exchange reserves equal to 3-6 months of imports no longer adequate for some countries because of the magnitudes of potential movements in the capital accounts (foreign direct and portfolio investment, short- and long-term bank loans and deposits) relative to the current accounts.
- The International Monetary Fund's pre-crisis standard of 13 weeks of imports was established in an era in which trade flows dominate capital flows. The cross-border flow of short-term capital, if any, is primarily related to the financing of trade.

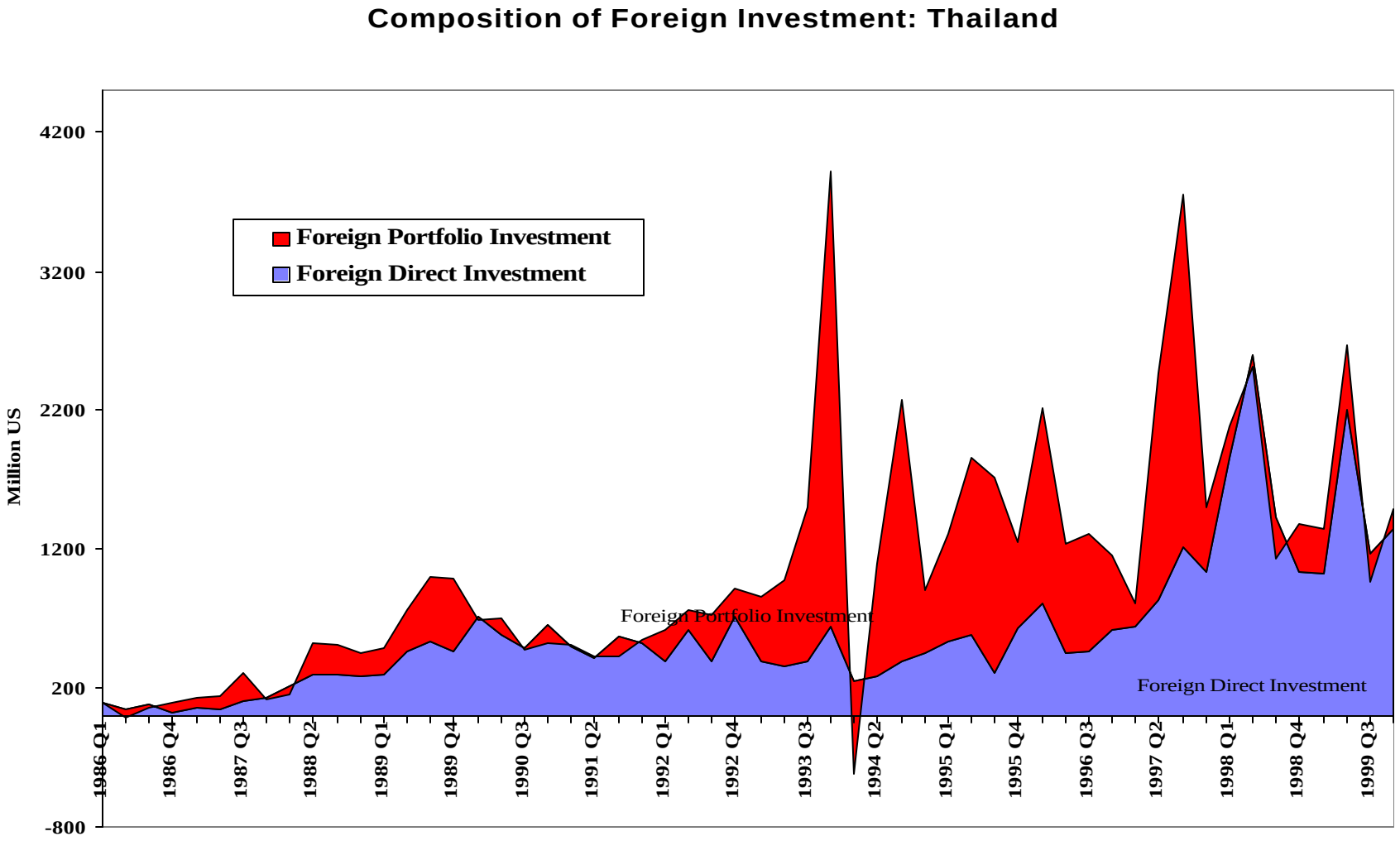
Inadequacy of Foreign Exchange Reserves

- A higher level of foreign exchange reserves is therefore necessary to support not only imports, but also debt service (including both principal and interest), and potential net short-term capital outflows resulting from the withdrawal of foreign portfolio investors and lenders
- Moreover, if the level of foreign exchange reserves is allowed to fall to a level perceived to be inadequate, a crisis will likely ensue
- Potential disruptions in the foreign exchange and capital markets can be caused by the quick inflows and outflows of large pools of hot money, which can in turn affect adversely trade flows, real fixed investment and real output

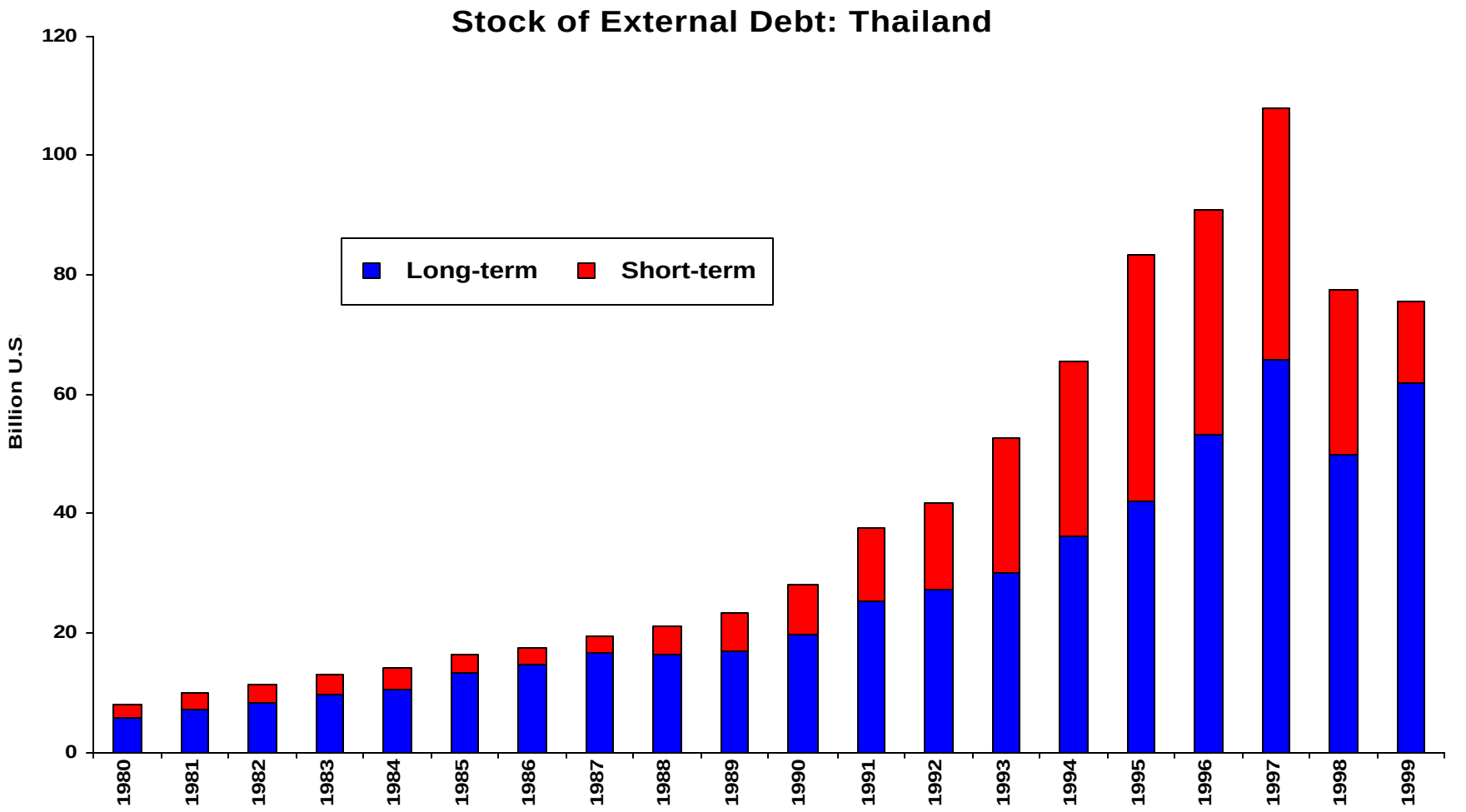
Comparison between Thailand and South Korea and China

- The contrast between for example, Thailand and South Korea on the one hand, and China on the other, is striking. Both Thailand and South Korea had a large proportion of foreign investment in the form of portfolio investment, and a large proportion of foreign debt in the form of short-term (less than one year maturity) loans, and low foreign exchange reserves relative to the potential foreign exchange liabilities

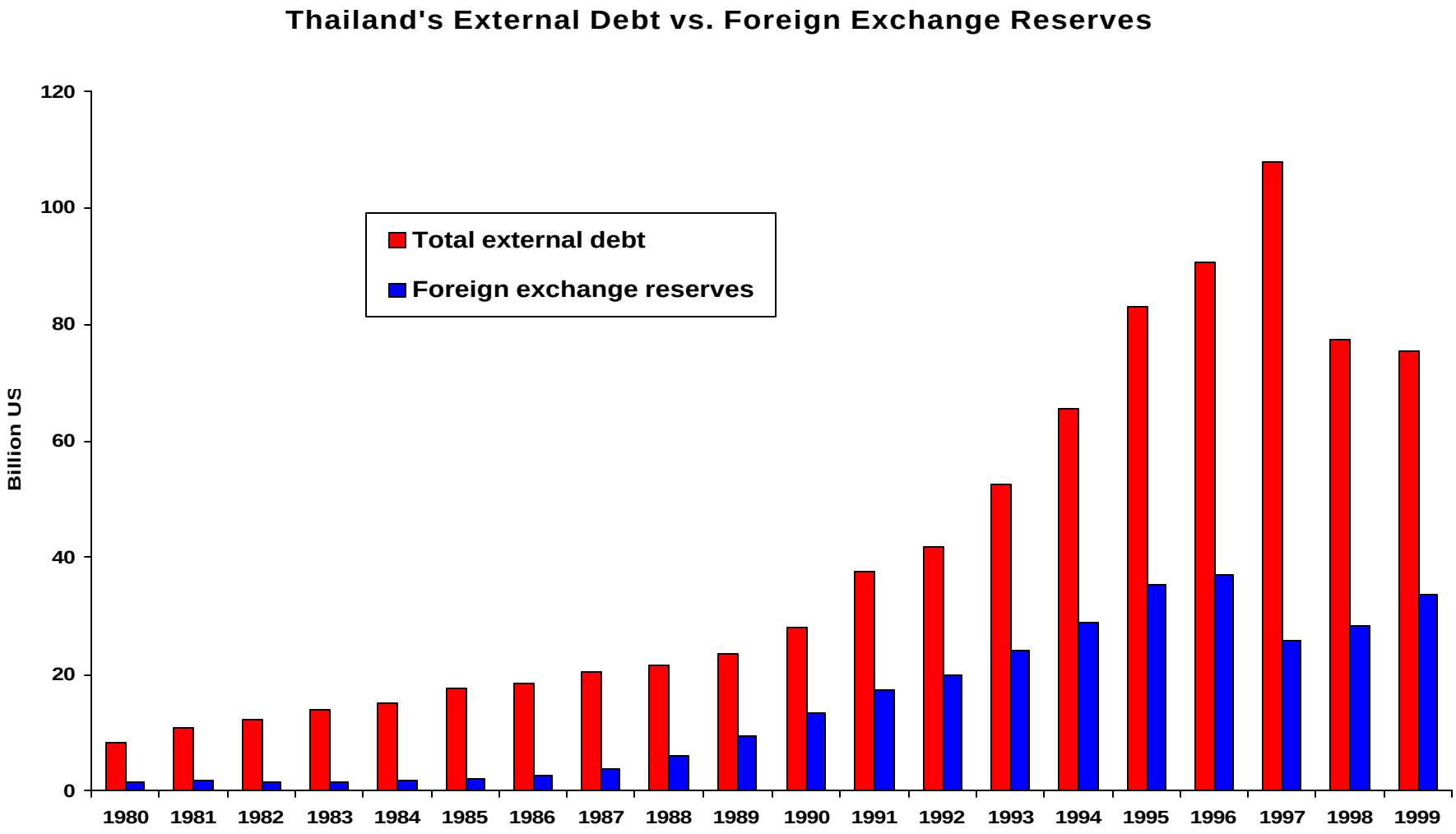
Composition of Foreign Investment: Thailand (Quarterly Data)



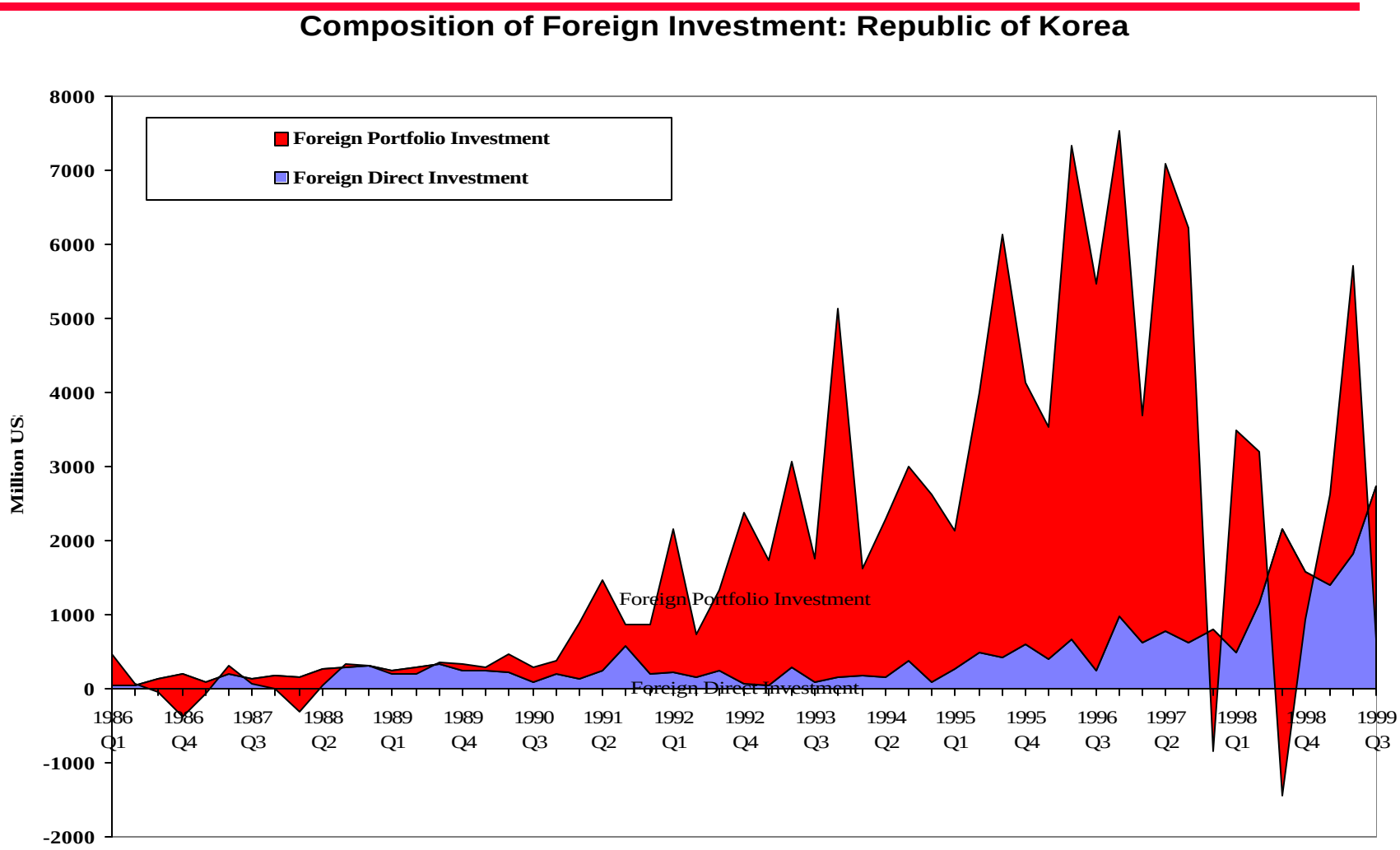
Composition of External Debt Thailand



External Debt and Foreign Exchange Reserves Thailand

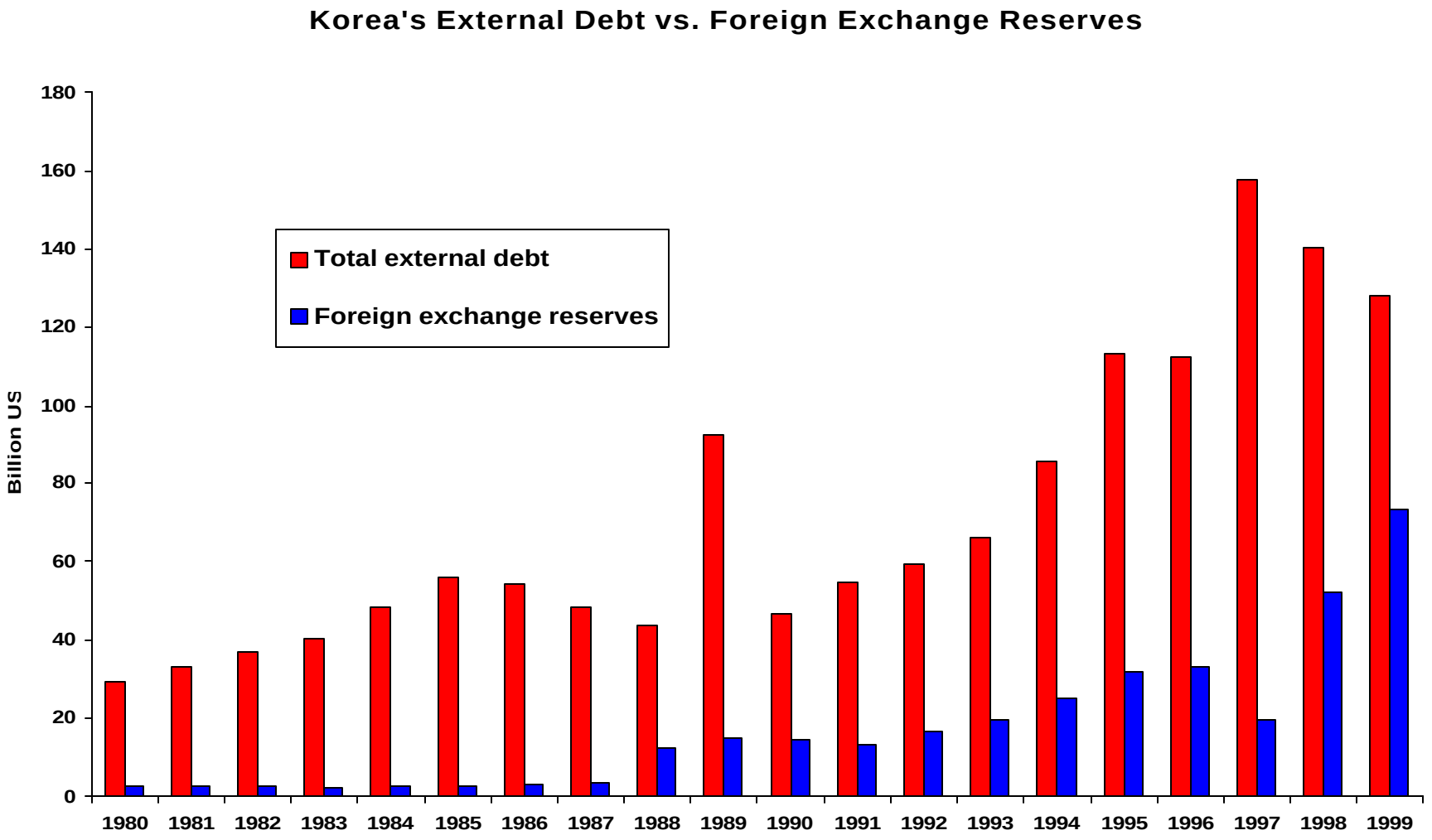


Composition of Foreign Investment: South Korea (Quarterly Data)

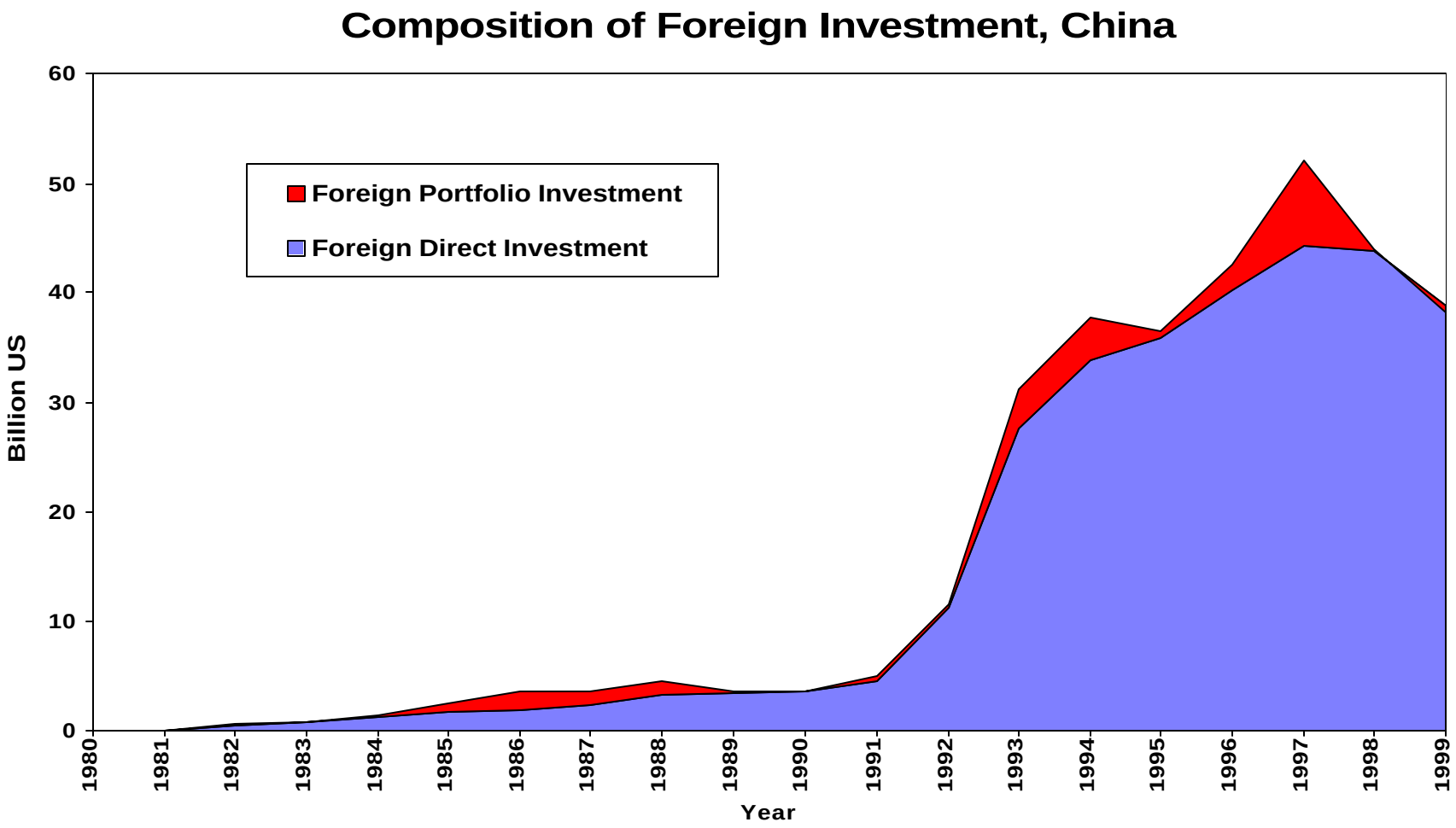


Composition of External Debt
South Korea

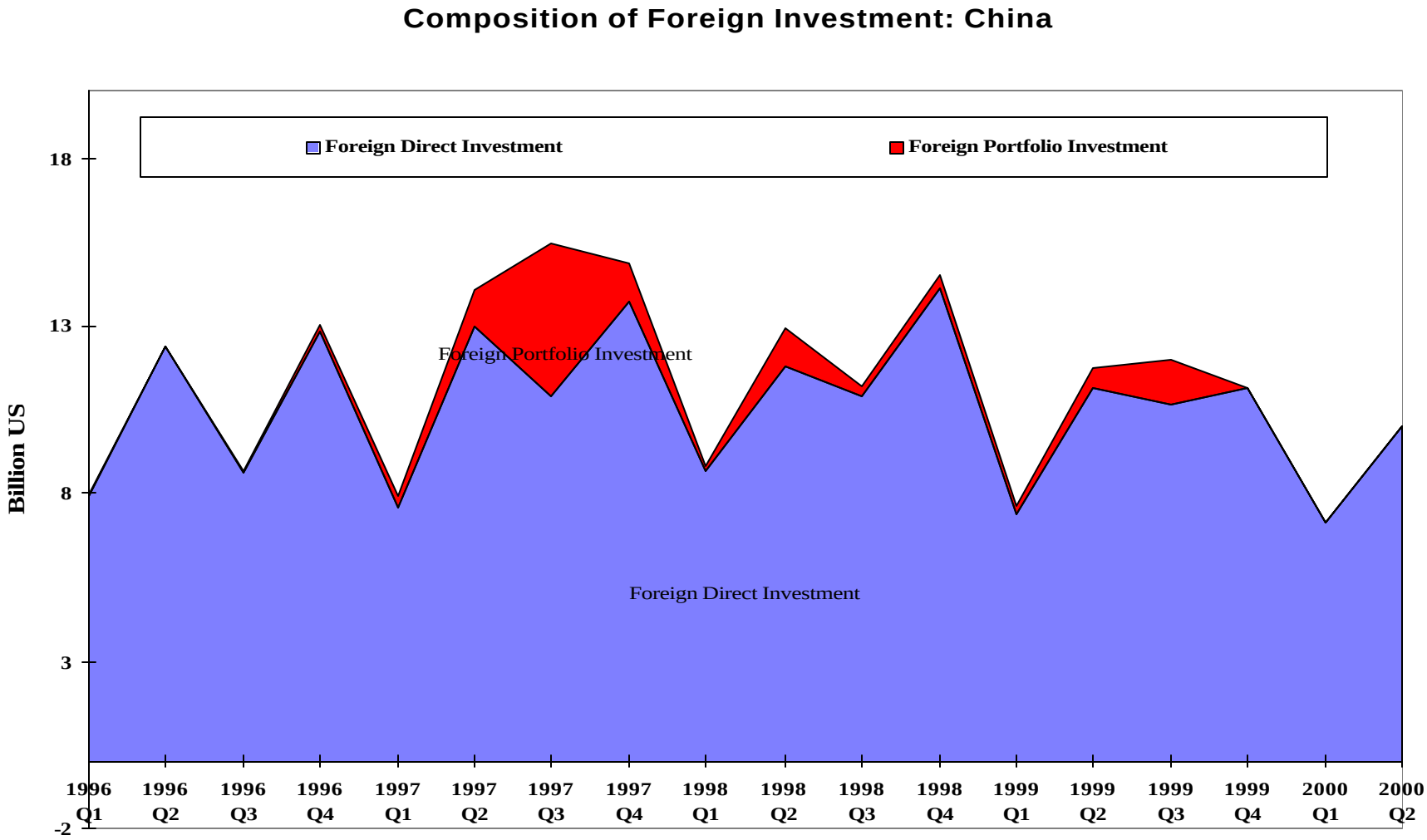
External Debt and Foreign Exchange Reserves South Korea



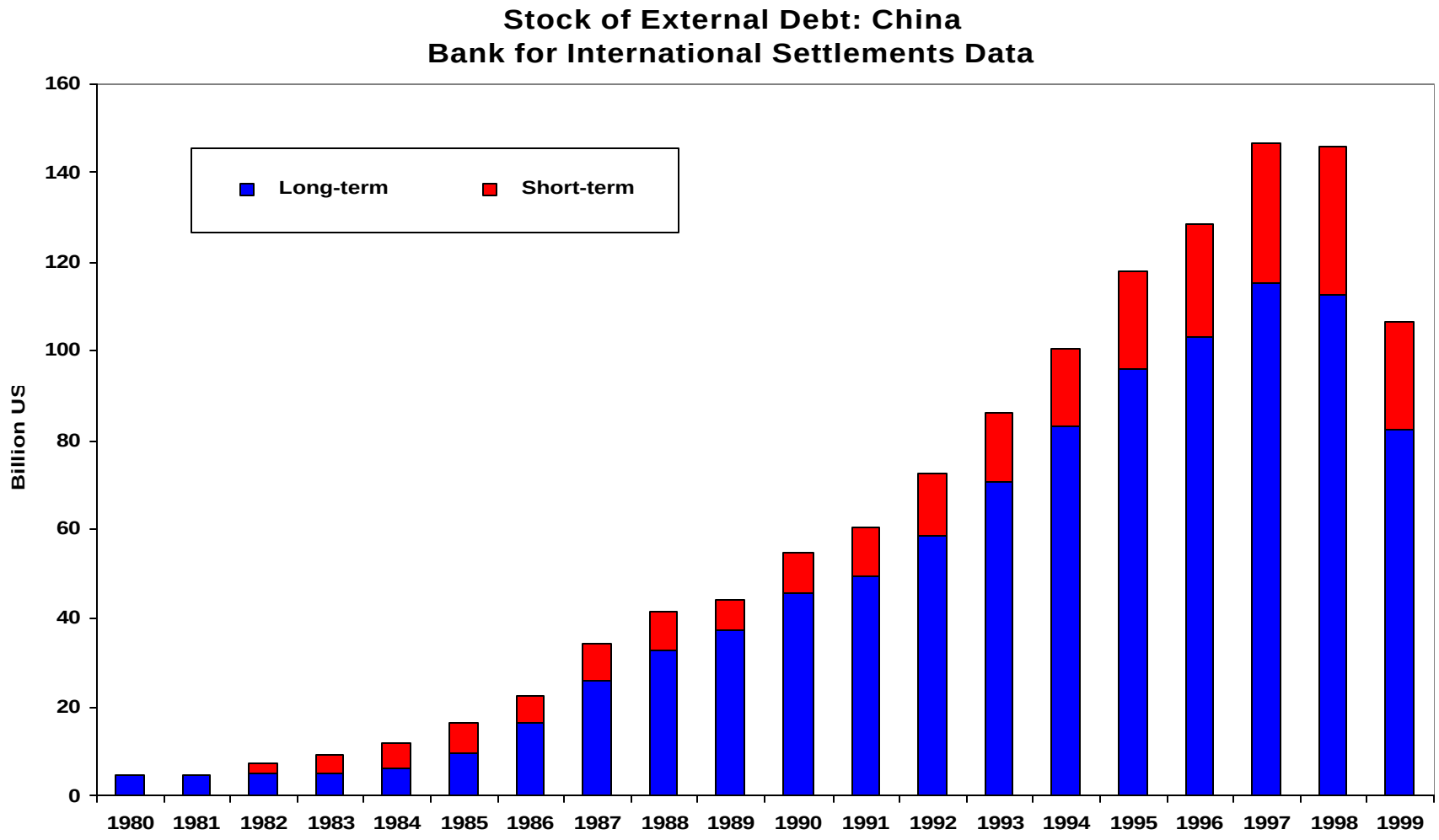
Composition of Foreign Investment: China (Annual Data)



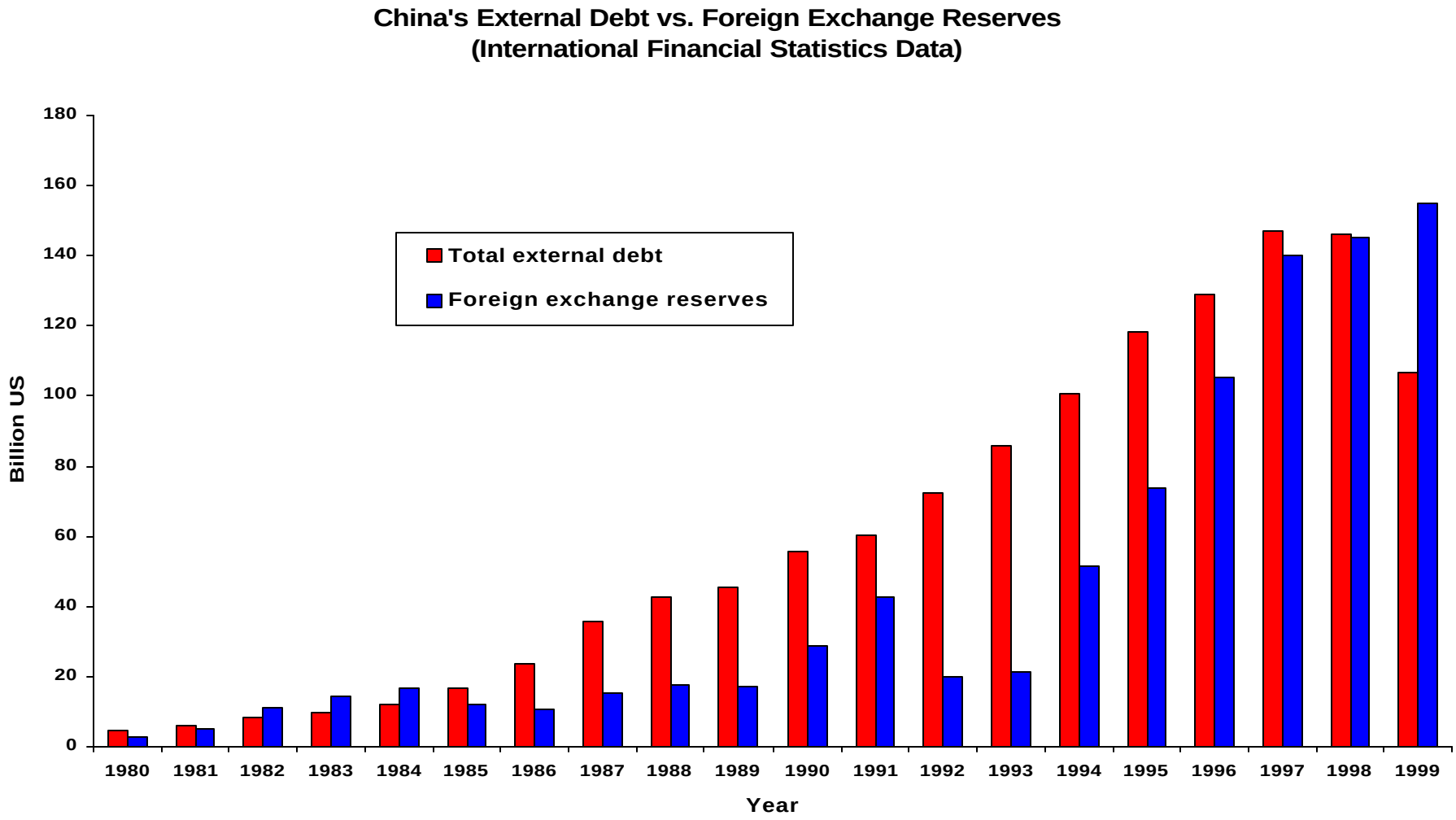
Composition of Foreign Investment: China (Quarterly Data)



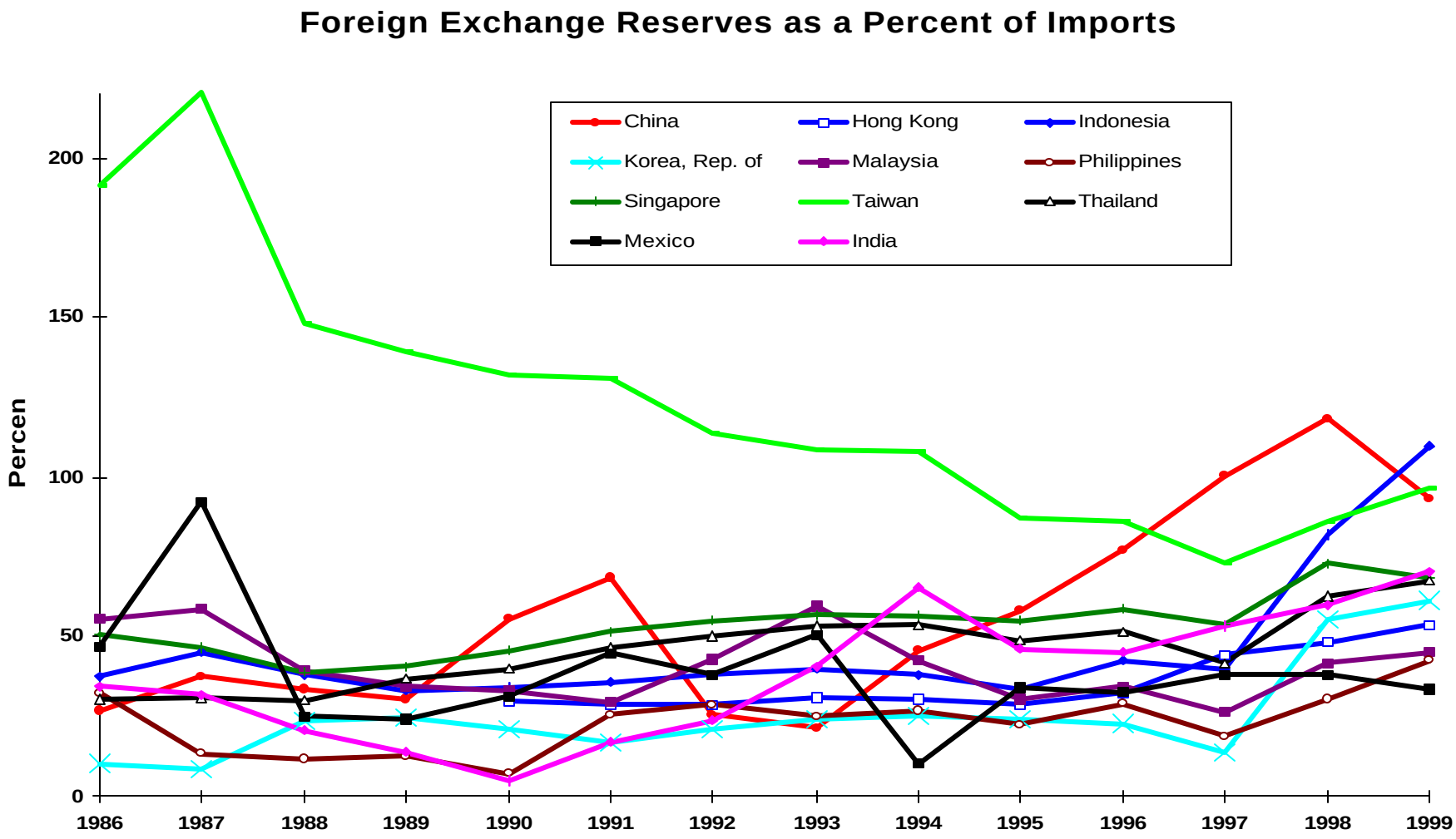
Composition of External Debt
China



External Debt and Foreign Exchange Reserves China



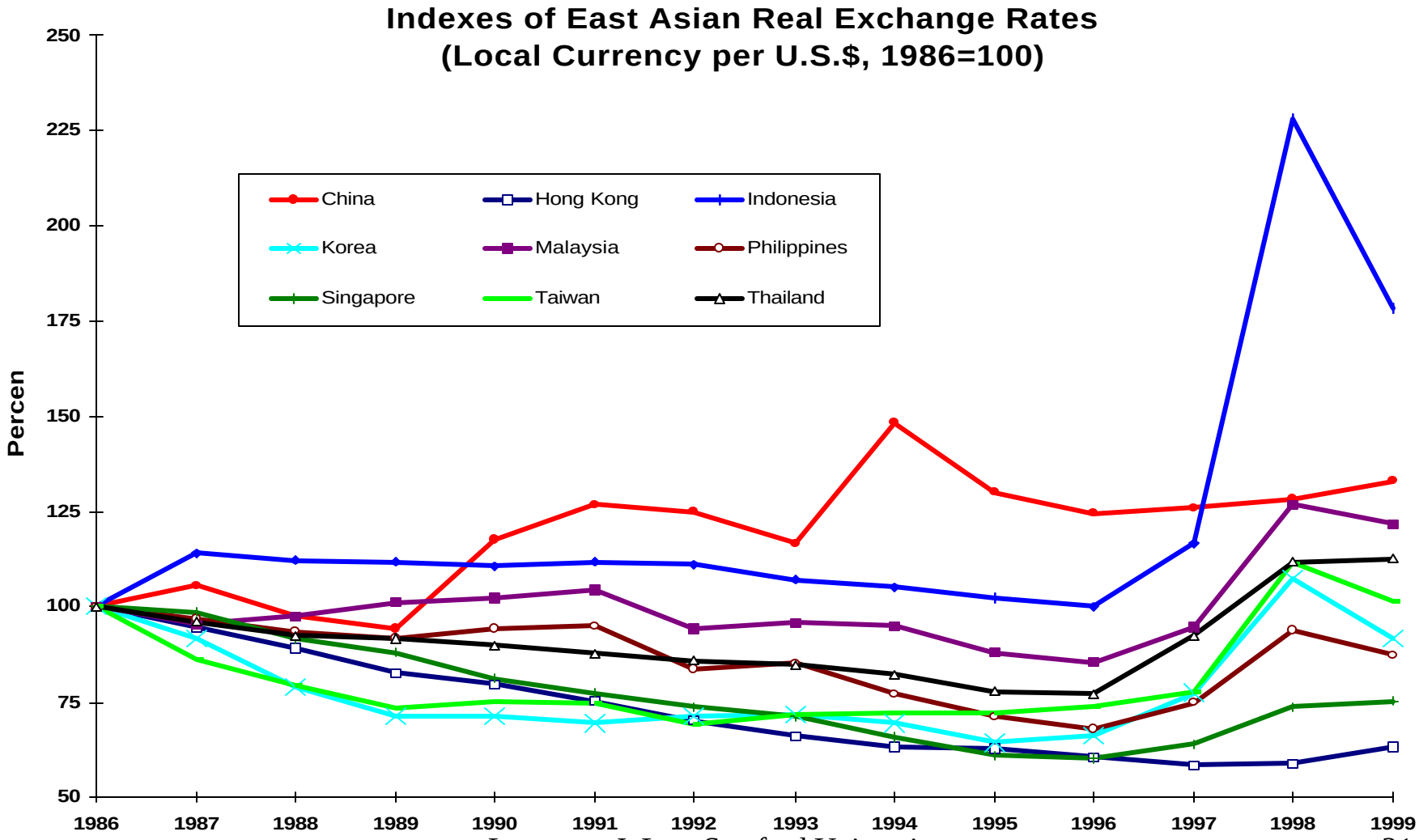
Foreign Exchange Reserves as a Percent of Annual Imports



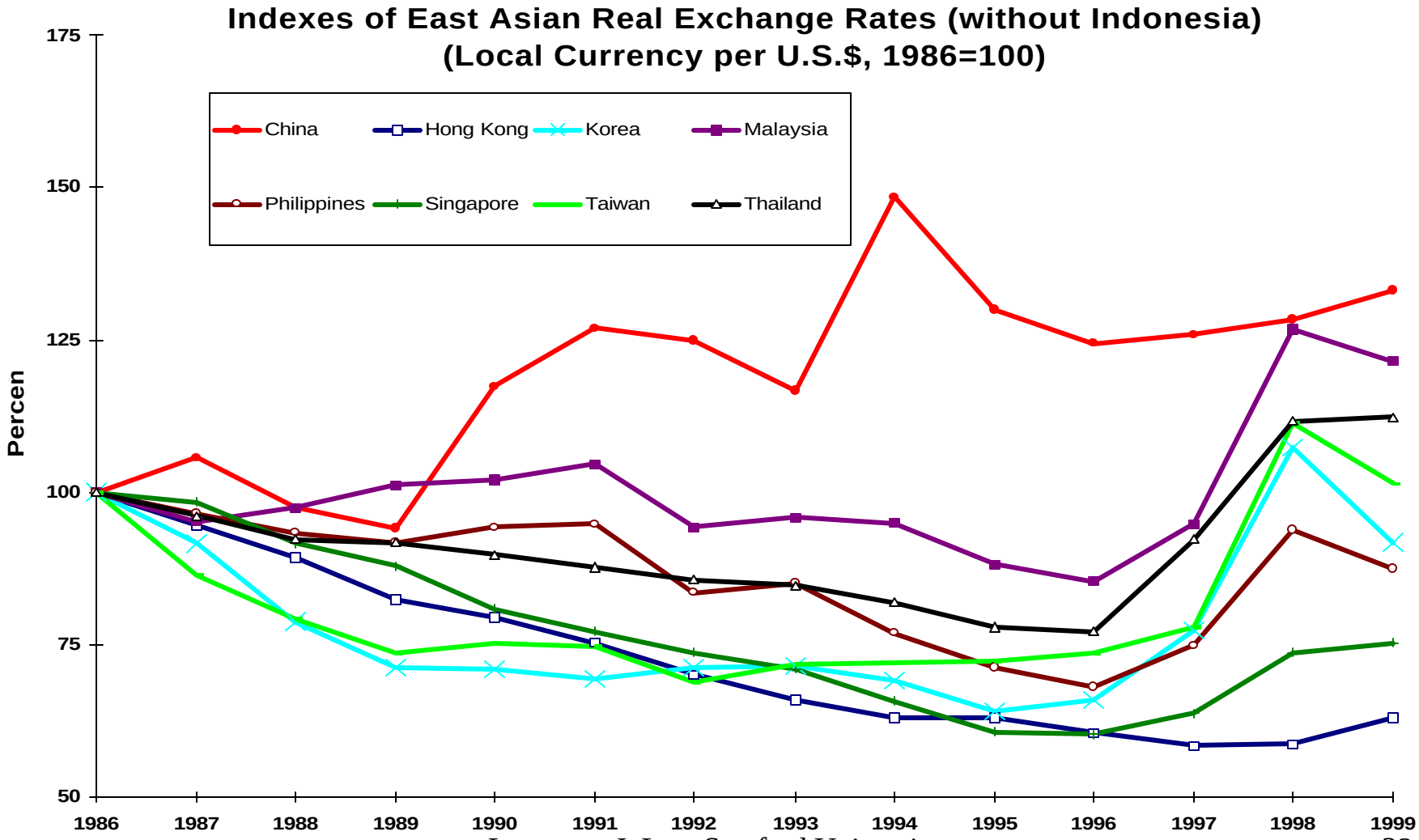
Real Exchange Rate Appreciation

- By mid-1997, many of the East Asian currencies, with the exceptions of the Chinese Yuan, the Indonesian Rupiah and the Malaysian Ringgit, have appreciated, in real purchasing power terms, 20-50% relative to the U.S.$ compared to 1986.
- This implies a loss of competitiveness vis-a-vis the U.S., and an adjustment is potentially warranted.

Real Exchange Rate Movements



Real Exchange Rate Movements (without Indonesia)



Fundamental Microeconomic Causes:Borrowing Too Much, Short-Term and in Wrong Currency

- Maturity mismatch--borrowing short and investing (lending) long
- Currency mismatch--revenue and cost (liability) in different currencies
  - Vulnerability magnified by high debt to equity ratio
  - Insolvency caused directly or indirectly by declines in the exchange rates
  - Oversold currencies create unnecessary bankruptcies and discourage re-capitalization and re-structuring
- Moral hazard on the parts of both lenders and borrowers
  - Past bailouts (Latin American loans, Mexican loans) of developed country lenders encourage moral hazard on the part of lenders
  - Implicit guarantee of banks and enterprises “too big to fail” by governments encourage moral hazard on the part of borrowers

Fundamental Microeconomic Causes:

- Excessive Leverage
  - Excessive leverage of enterprises magnifies the negative effects of a sharp devaluation on foreign-currency denominated debt as well as the resulting rise in both the domestic and the foreign rates of interest
  - Excessive leverage encourages moral hazard (recklessness) on the part of the borrowers
  - Excessive leverage magnifies the domino effect of insolvency and bankruptcy on the entire financial system
  - Excessive leverage also enables the hedge funds to engage in predatory speculation on a large scale
- "Herd mentality"--too much money chasing too few good projects leading to mis-pricing by developed country investors and lenders (it is better to make the same mistake as everyone else)--the making of an East Asian "bubble"

What is New?
(1) New Channels for Contagion!

- The speculative attacks on the New Taiwan Dollar (10/17/97) and the Hong Kong Dollar (10/23/97) show that even **ECONOMIES WITH SOUND FUNDAMENTALS ARE NOT IMMUNE!**
- Spread to South Korea, Latin America, and Russia
- Traditional Channels for Contagion (through trade)
  - Competitive devaluation
  - Nervous domestic traders and investors (Sachs's "rational panic")
- New Channels for Contagion (through short-term capital flows)
  - Predatory speculation by hedge funds
  - Domino effect of cross-country lending and re-lending
  - The confidence factor--withdrawals by indiscriminate investors of developing (emerging) countries equity and debt; reduction of outstanding credit by multinational banks

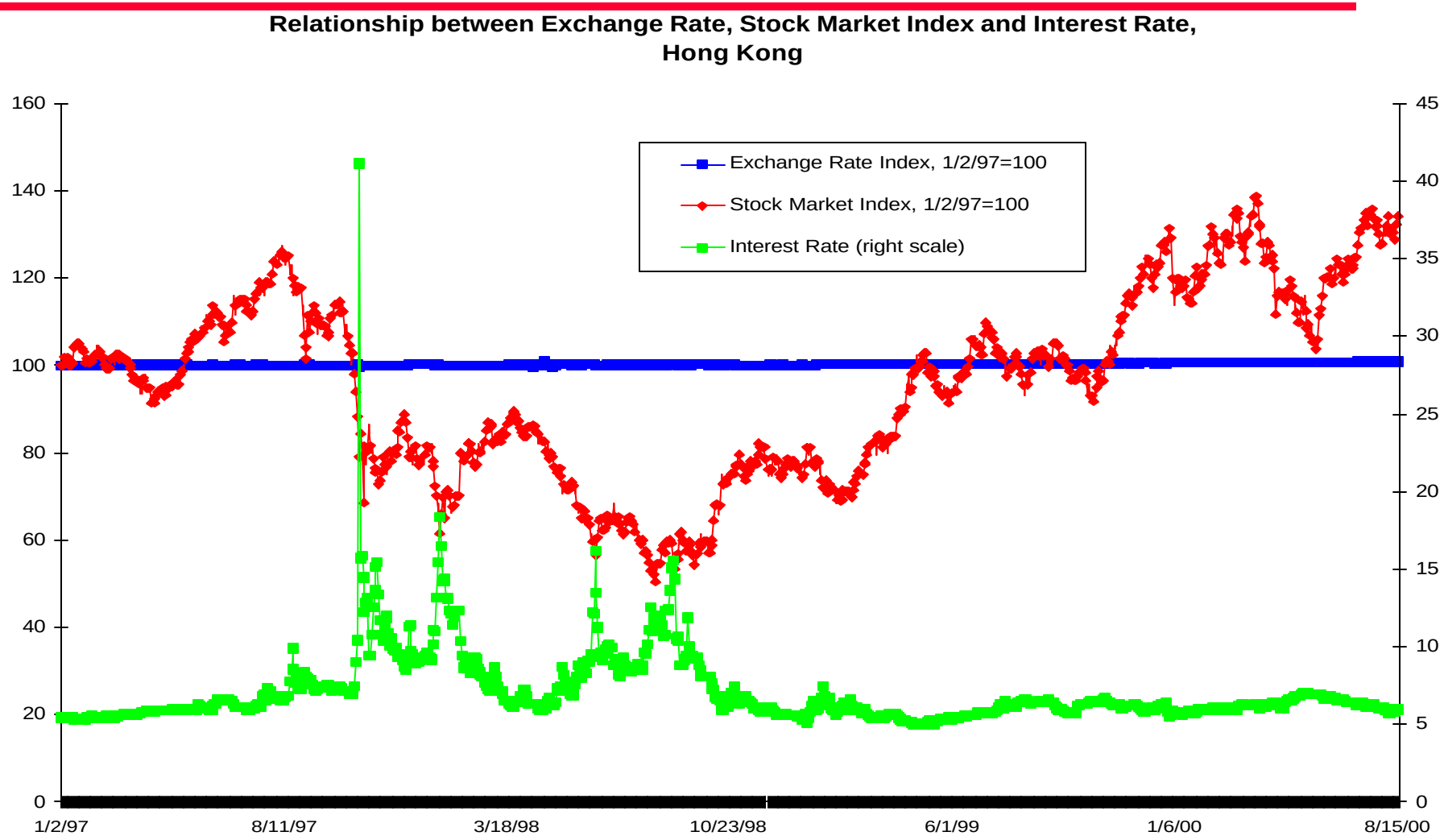
Predatory Speculation (1)

- Large pools of hot money (3,000-4,000 hedge funds with aggregate capital of US$300 billion+) that can move (small) markets
- Formulae for almost risk-free profits, especially in economies that are expected to defend their exchange rates (transactions must be large enough to be a credible threat to the exchange rates)
- (Short) Sales of large quantities of local currency induce purchases by local central bank or monetary authority
- Such purchases by the central bank or monetary authority cause the local money supply to contract and liquidity to tighten, sending the short-term rate of interest up
- The local central bank or monetary authority may also raise the rate of interest directly to discourage the conversion of local currency-denominated assets into foreign currency-denominated assets

Predatory Speculation (2)

- For example:
  - Simultaneous shorting of currency and going long on interest rate futures (Attack on the British Pound, 1992)
  - Simultaneous shorting of currency and stock (or stock index futures), in either spot or forward markets or both (Attacks on Hong Kong)
  - Shorting the stock market and then selling the domestic currency proceeds for U.S. dollars
  - Simultaneous longing of currency and stock or stock market index
- Predatory speculation can occur and succeed independently of the economic fundamentals if the resources of the speculators are sufficiently large relative to the size of the market
- Short sales of forward contracts in the local currency will have the same effect through arbitrage (Buyers of forward contracts will sell short in the spot market)
- Predatory speculation has the effect of depressing the exchange rate and increasing its volatility and hence the interest rate risk premium

An Example: Hong Kong



What is New? (2) Contagion Leading to Synchronization of Down Turns

- Over the last decade, the proportions of East Asian exports to other East Asian economies have been increasing rapidly
- By the late 1990s, approximately 50% of the exports of the East Asian economies are destined for other East Asian economies
- All East Asian economies, with the exception of China and Taiwan, experienced rises in the rate of interest and downturns in economic activities at the same time, which in turn caused significant reductions in the demands for one another's exports, further exacerbating their recessions

The Recovery Followed the Stabilization of the External Environment

- Since 3Q/1998, there have not been any speculative attacks on the Thai Baht or any other East Asian currency.
- The hedge funds had a "credit crunch" due to losses, net redemption and curtailment of available credit lines in the aftermath of the collapse of the Russian ruble and the "Long-Term Capital Management" crisis.
- The U.S. economy has been exceptionally strong throughout the East Asian currency crisis, providing a growing market for East Asian exports and compensating for the very slow recovery of the Japanese economy.

How Robust is the Recovery? Aggregate Demand Stimulation (1)

- The recovery is supported by the growth in public investment and in exports
- Private consumption demand has gradually revived because of lower rates of interest and stabilization of the unemployment rates
- Domestic fiscal stimulus necessary because of weak domestic investment demand--International Monetary Fund conditions notwithstanding (IMF position on deficit financing by the affected East Asian countries has changed), e.g., South Korea, Thailand
- Turning around expectations and providing incentives are the keys to stimulating private consumption and new private investment
- The real devaluation in the East Asian currencies presents new opportunities for profitable investments once they are stabilized

Aggregate Demand Stimulation (2)

- Recapitalizing the domestic banks so that new loans to new projects are possible
  - Bailing out of old failed projects should be avoided
  - Recapitalization by the government should require capital contribution and risk-sharing by new or existing shareholders to avoid moral hazard
  - The political economy--who will bear the costs--may prove to be the most difficult problem
- Maintaining domestic political and social stability

Synchronization of Upturns

- While the simultaneous downturns in the East Asian economies exacerbated the problems of one another, the simultaneous upturns have allowed the recovery to be extraordinarily rapid, with the rising import demands of each economy feeding into rising export demands of its trading partners

Is Another Crisis Likely?

- Based on the early warning economic indicators, the East Asian economies are unlikely to have another crisis in the foreseeable future
  - The savings rates have remained high while the savings-investment gaps--also reflected as the current account gaps--have largely disappeared
  - The dependence on short-term foreign capital (portfolio investment--both equity and debt instruments--and loans) has been significantly reduced
    - Foreign investment now consists mostly of direct rather than portfolio investment
    - Both total and short-term external debts have declined
    - The ratio of short-term to total external debts has also declined
  - Foreign exchange reserves have risen both absolutely and as a percentage of annual imports
  - Real exchange rates have depreciated significantly from their peaks in most of the affected economies

Was "Crony Capitalism" or the Primitive Financial System the Culprit?

- The real mistake was to borrow too much short-term and in the wrong currency
- Even a perfectly efficient enterprise cannot withstand the increase in debt servicing required due to the massive exchange rate devaluation
- Japan, despite its massive devaluation between 1995 and mid-1998, has been able to muddle through because its firms have little net foreign debt
- Hong Kong, Singapore and Taiwan have also escaped relatively unscathed because they did not and do not have significant net foreign debt, especially short-term debt, relative to their foreign exchange reserves
- China has not been significantly affected because it retains capital control and its foreign debt is mostly medium to long-term

Was "Crony Capitalism" or the Primitive Financial System the Culprit?

- The financial systems collapsed in the affected countries because of the currency crisis. Many of the firms became insolvent because of illiquidity. Whatever weaknesses they might have had were not the direct causes of the crisis

The East Asian Crisis is a Currency Crisis That Induced a Financial Crisis

- The problem arose from insufficient liquidity in terms of foreign exchange
- Unexpected outflow of short-term capital caused the exchange rate to plunge
- A “bank run” on foreign exchange ensued
- Financial insolvency caused by the resulting revaluation of the foreign-currency denominated debt and the rise in the rate of interest (due to expected further devaluation and increased volatility of the exchange rate)
- Domino effects of insolvency and bankruptcy

Lesson:
The Hazards of Short-Term Foreign Capital

- Over-dependence on foreign capital, especially short-term foreign capital, makes an economy and its exchange rate vulnerable
- Foreign direct investment is better than foreign portfolio investment or loans because it is less mobile
- Long-term loans is better than short-term loans because they are not subject to immediate withdrawal
- Currency and maturity mismatch by domestic borrowers aggravates the problem
- Short-term foreign-currency denominated loans should be carefully monitored and controlled in order to avoid the compounding of currency mismatch by maturity mismatch
- Short-term foreign funds are inherently different from short-term domestic funds because the former is much more likely to leave at the first sign of real or imagined trouble

Reducing Dependence on Short-Term Foreign Capital

- Lengthening maturities of foreign-currency denominated loans through the imposition of a fee by the central bank, say, of 25 basis points, each time such a loan is made or renewed. This fee implies the recognition by the central bank of such a loan, which should be comforting to the foreign lenders. However, it also has the effect of forcing the foreign lenders and the domestic borrowers to rethink whether a foreign-currency loan is in their best interests and if so whether a longer-term loan, with floating rates of interest, may fit their interests better, reducing the potential fees payable to the central bank
- Larger reserve requirements can also be imposed on non-resident domestic currency deposits on the grounds that they are likely to be more mobile than resident domestic currency deposits

Reducing Dependence on Short-Term Foreign Capital

- Foreign portfolio investment can be channel into closed-end mutual funds and/or foreign depository receipts, greatly reducing the potential impact of a massive sell-off by foreign portfolio investors on the exchange rate
- Foreign direct investment should be promoted as a substitute to foreign portfolio investment (Many East Asian countries, such as South Korea and Thailand, used to discourage foreign direct investment, especially in some selected industries.)

Lesson:
Foreign Exchange Reserves

- An adequate level of foreign exchange reserves should be maintained, taking into account not only trade flows but also short-term and long-term capital flows. A conservative estimate of foreign-currency needs would be three months of imports plus the stock of foreign portfolio investment plus the stock of short-term foreign-currency denominated bank loans plus debt service on long-term foreign-currency denominated debt. If foreign exchange reserves, plus available lines from international organizations and other counties, are perceived to be less than the estimated foreign currency needs, a run on foreign currency may ensue.

Lesson: A Cooperative Asian Currency Stabilization Fund

- A multi-country cooperative currency stabilization fund may have a useful role to play by augmenting the potential foreign exchange reserves perceived to be available for the defense of any single currency. (Timely intervention in the currency markets of certain countries, such as Indonesia, would have helped to reduce the misery significantly.)

Lesson:
Real Exchange Rate Appreciation

- A fixed exchange rate and chronically higher relative inflation cannot be compatible in the long run
- A country must choose between having a fixed exchange rate and hence low or zero relative inflation and having a high relative inflation and continual devaluation

Lesson: Excessive Leverage Should be Discouraged/Prevented

- High leverage greatly increases the odds of moral hazard and systemic failure
- A lower debt/equity ratio reduces the domino effect of insolvency and bankruptcy--no borrower will become too big to fail
- Excessive leverage can be discouraged by the central bank charging a commercial bank a deposit insurance premium that is calibrated to the debt/equity ratio of the borrowers of the bank. This gives the banks the incentive to lend to borrowers with lower debt/equity ratios

Excessive Leverage Should be Discouraged/Prevented

- Globalization of accounting standards and disclosure requirements
  - Insistence of financially responsible auditors by lenders
- Global credit reporting system for large borrowers
  - Voluntary reporting by lenders of large credit transactions of large borrowers (say, transactions exceeding $500 million each) to a central bureau operated by a consortium of global lenders
  - Inquiry by lenders of total cumulative debt to-date (as opposed to debts to individual lenders, thus preserving confidentiality and privacy) prior to extension of additional credit
  - Regulatory agencies may require that a lender must have knowledge of the total outstanding indebtedness of its large borrowers prior to extension of additional credit
  - It is in the self-interest of each lender to cooperate and to report to such a system

Lesson:
Containing Contagion

- Predatory speculation by hedge funds should be monitored and controlled --through mandatory disclosure of large positions and imposition of margin requirements on purely speculative (non-current account-related) transactions
- Worldwide or region-wide currency stabilization facility

Lesson:
Post-Crisis Options for Exchange Rate Regimes

- Large and deep individual markets--United States, Japan
  - Stabilization of a freely-floating currency is difficult unless it has a large and deep market relative to the short-term capital flows
- Currency areas--The Euro
  - Even before the Euro there was the EMS “snake” pegged to the DM (German Mark)--evidence that small and shallow markets for individual currencies can be too volatile even for developed economies such as Austria, Belgium and the Netherlands
- Capital control--Japan before 1980, China, Malaysia
  - Current account convertibility, long-term capital convertibility, limited short-term capital convertibility
  - Some forms of capital control, especially on short-term flows, may make sense to prevent exchange rates from being moved more by short-term capital flows than by real factors of competitiveness

Post-Crisis Options for Exchange Rate Regimes: Dollarization

- True dollarization (Panama) and quasi-dollarization (Hong Kong, Argentina)
  - True dollarization implies that the U.S. dollar will be legal tender for all obligations and contracts can be denominated in U.S. dollars
  - Hong Kong and Argentina with a fixed U.S.$ peg are not quite truly dollarized but is very close to being so
  - Benefits:
    - Insulation from exchange rate volatility
    - Promotes long-term FDI as well as foreign portfolio investment
    - The rate of interest and the rate of inflation will be at U.S. levels if credible
    - Facilitates foreign trade
  - Costs:
    - No more monetary policy (neither money supply nor interest rate can be independently controlled)
    - Fiscal policy constrained by the ability to issue US$ denominated government notes and bonds
    - Loss of seignoirage from currency issuance

Dollarization

- Outstanding issues
  - Is there a lender of last resort (to domestic financial institutions)?
  - Can the seignoirage be shared (true dollarization)?
  - Coordination, if any, of monetary policy with the U.S. (e.g., monetary union)?
- The U.S. benefits from seignoirage, both direct and indirect

Problems of a Flexible Exchange Rate for a Small Economy

- A thin market--total volume small relative to the size of hedge funds and other pools of hot money (estimated to total 100s of billions of US$)
- Possibility of market manipulation due to lack of regulation and transparency
- Central bank/monetary authority has to assume the role of market-maker
- A credibly adequate level of foreign reserves (and/or standby commitment from an international or regional stabilization facility) is required

The Size of the Global Foreign Exchange Market

- According to the Bank for International Settlements data, London is the largest foreign exchange market in the world with average daily turnover of approximately $650 billion in 1998
- London is larger than the New York and Tokyo markets combined
- There are between 3,000 and 4,000 hedge funds, at a conservative estimate of US$100 million of equity capital each, with an estimate of aggregate capital of between US$300-400 billion
- Large and well known funds such as Quantum Fund (Soros) and Tiger Fund have approximately US$20 billion worth of capital
- With leverage, the hedge funds can collectively undertake transactions as high as US$10 trillion (Total U.S. stock market capitalization is US$12.5 trillion)

The Importance of Expectations in Exchange Rate Stabilization

- Sudden increase in variance (riskiness) encourages flight to safety
- Confidence of domestic citizens most critical
- Successful stabilization requires “decisive and overwhelming force”
- Perceived commitment is more important than
  - the actual value of the exchange rate (the Hong Kong and Chinese examples) or
  - the actual amount of foreign exchange available (the Mexican example)