XVIII Ciclo de Jornadas Económicas

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Financial Liberalization, Capital Flows and Financial Crises

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Outline: Three topics

- Financial liberalization, domestic financial booms and crises
  - The dynamics of banking crises
- Public debt and debt crises in emerging markets
  - External and domestic default
- Crisis intervention and policy reform
  - A role for the IMF or others?

Crises Now and Then

- The frequency and severity of crises since the 1970s has been striking
- Many (most, all?) of these follow financial liberalizations of some form
- By and large, crises have occurred in emerging market economies with large capital inflows
- But the exceptions include Japan (1989-90), Sweden (1992), UK (2008-) and the US (2008-)

Some recent major crises in emerging markets

- Mexico, 1994-95
- Argentina, 1995-96
- Thailand, 1997-98
- Indonesia, 1997-98
- Malaysia, 1997-98
- Korea, 1997-98
- Russia, 1998
- Brazil, 1998-2002
- Ecuador, 1998-99
- Turkey, 2001
- Argentina, 2001
- Uruguay, 2002

Sources of these crises

- Pegged exchange rate regimes
- Macroeconomic policy inconsistencies
  - Persistent inflation differential
  - Real exchange rate appreciation
  - Policy incredibility
- Fragile domestic finance
  - Leveraged intermediation of capital inflows
  - Unhedged foreign currency exposure
  - Securitized borrowing
- Debt problems
  - External debt burden and currency mismatch
  - Sovereign risk and external public debt
  - Debt guarantees and private external debt
  - Sovereign risk and domestic public debt

Crises and Contagion

- Latin American debt crisis, 1980s
- ERM crisis, 1992
- Tequila crisis, 1994-95
- East Asian Crisis, 1997-98
- Russian Crisis, 1998
- But contrast Argentina, 2001 (just Uruguay)

The sources of contagion

- First, contagion is evidenced by impacts on
  - Interest rates, asset prices, exchange rates
  - Capital flows, investment, GDP growth
- Real and financial fundamentals
  - Trade linkages
  - Financial market integration
- Other possible causes
  - Incentives for market participants
  - Informed/uninformed traders
  - All are global portfolio readjustments based on shock

Financial Liberalizations and crises

- Begin with some examples:
  - Latin America: Chilean reforms beginning 1974, crisis in 1981
  - East Asia: Thailand in late 1989, crisis evolving before 1997
  - Advanced economies: Japan mid1970s, Sweden, 1980
- Some common characteristics
  - Bank-centered financial systems
  - Rapid growth of financial intermediation
  - Deregulation associated with lagging prudential regulation and supervision
  - Explicit or implicit public insurance of depositor claims

Some lessons from East Asia

- The 1997-98 crisis displayed sharp contrasts

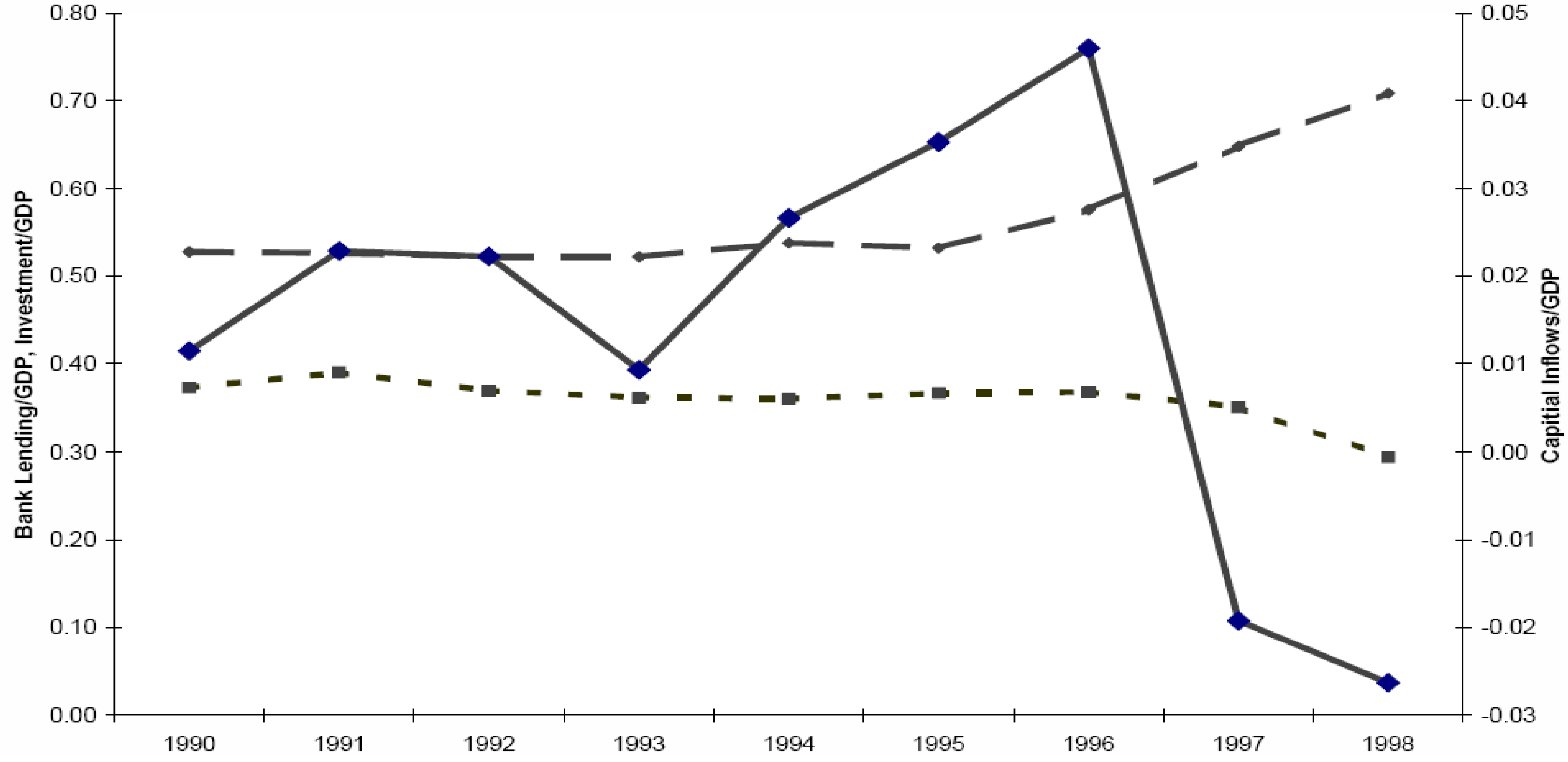
  Between Thailand, Korea and Malaysia, on the one hand, and Taiwan and Singapore on the other:

  – Firm reliance on bank intermediation versus domestic equity and bond markets

  – Lax prudential supervision and regulatory forbearance versus effective oversight.

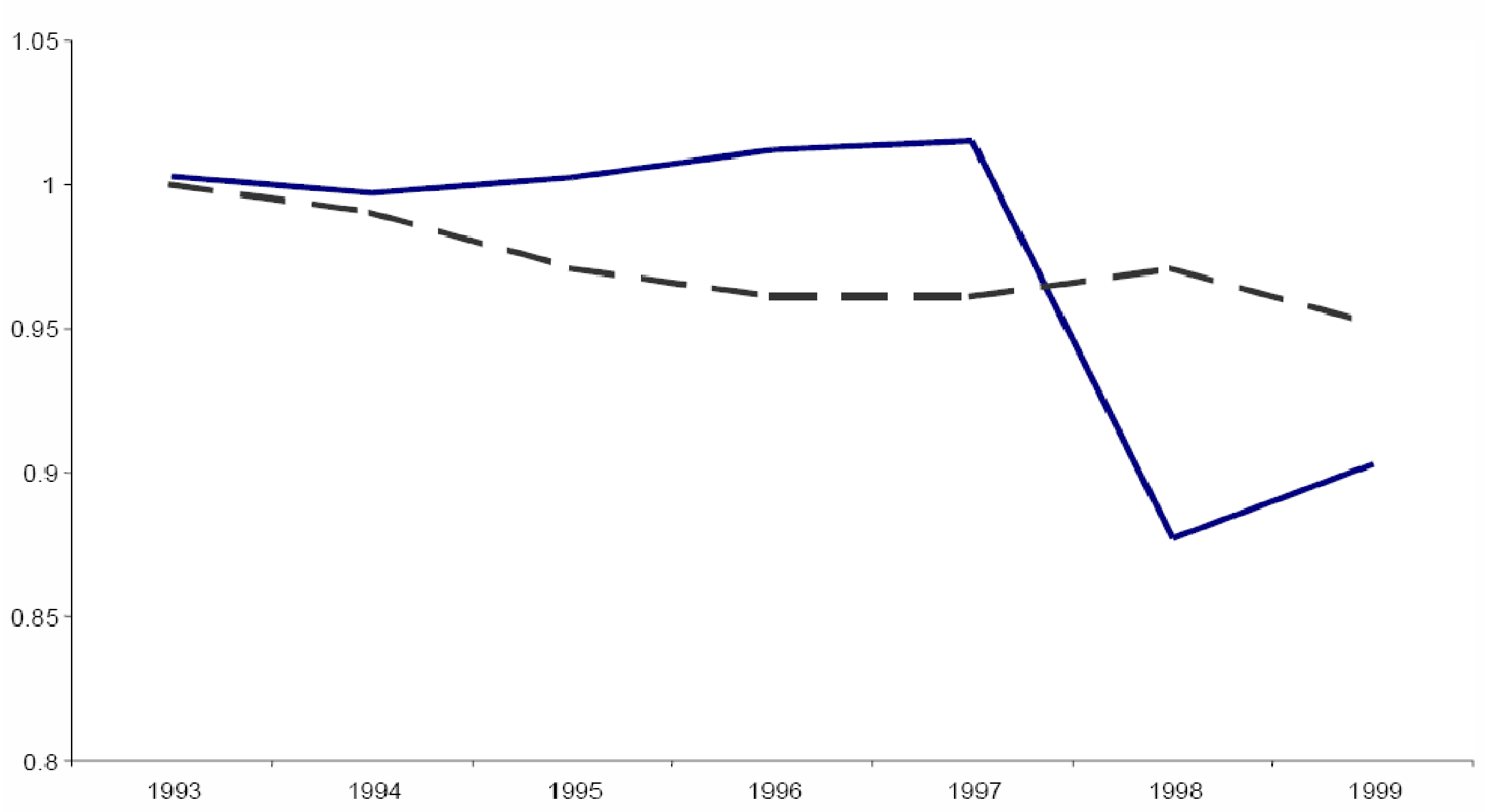
  – Capital inflows and foreign currency exposure
- The first two are true of Japan in the 1980s

Korea: bank lending, capital flows and investment in the 1990s



_ _ _ _ Bank lending/GDP - - - - Investment/GDP ____ Capital inflows/GDP

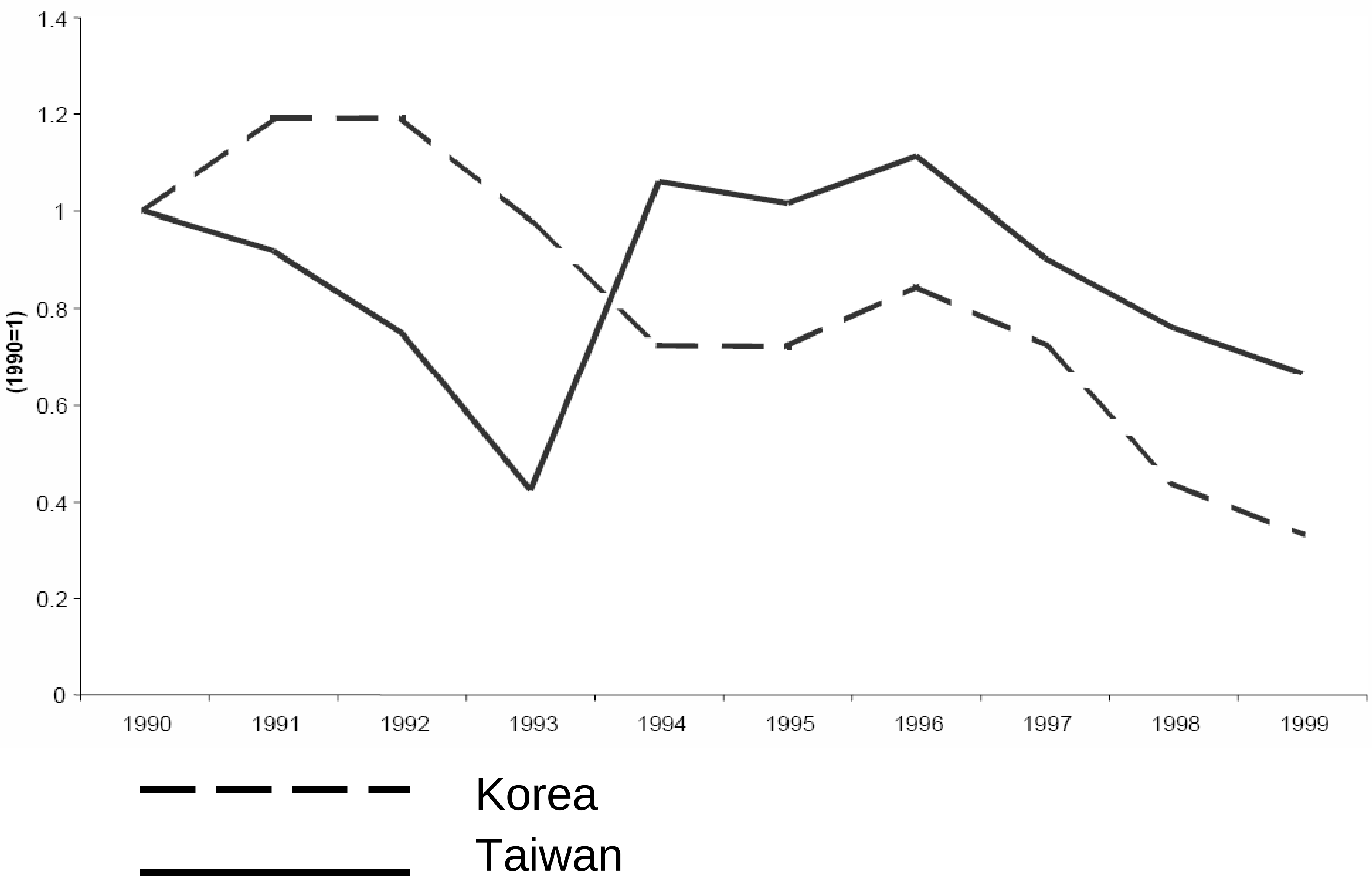
Real Estate Prices: Korea and Taiwan in the 1990s



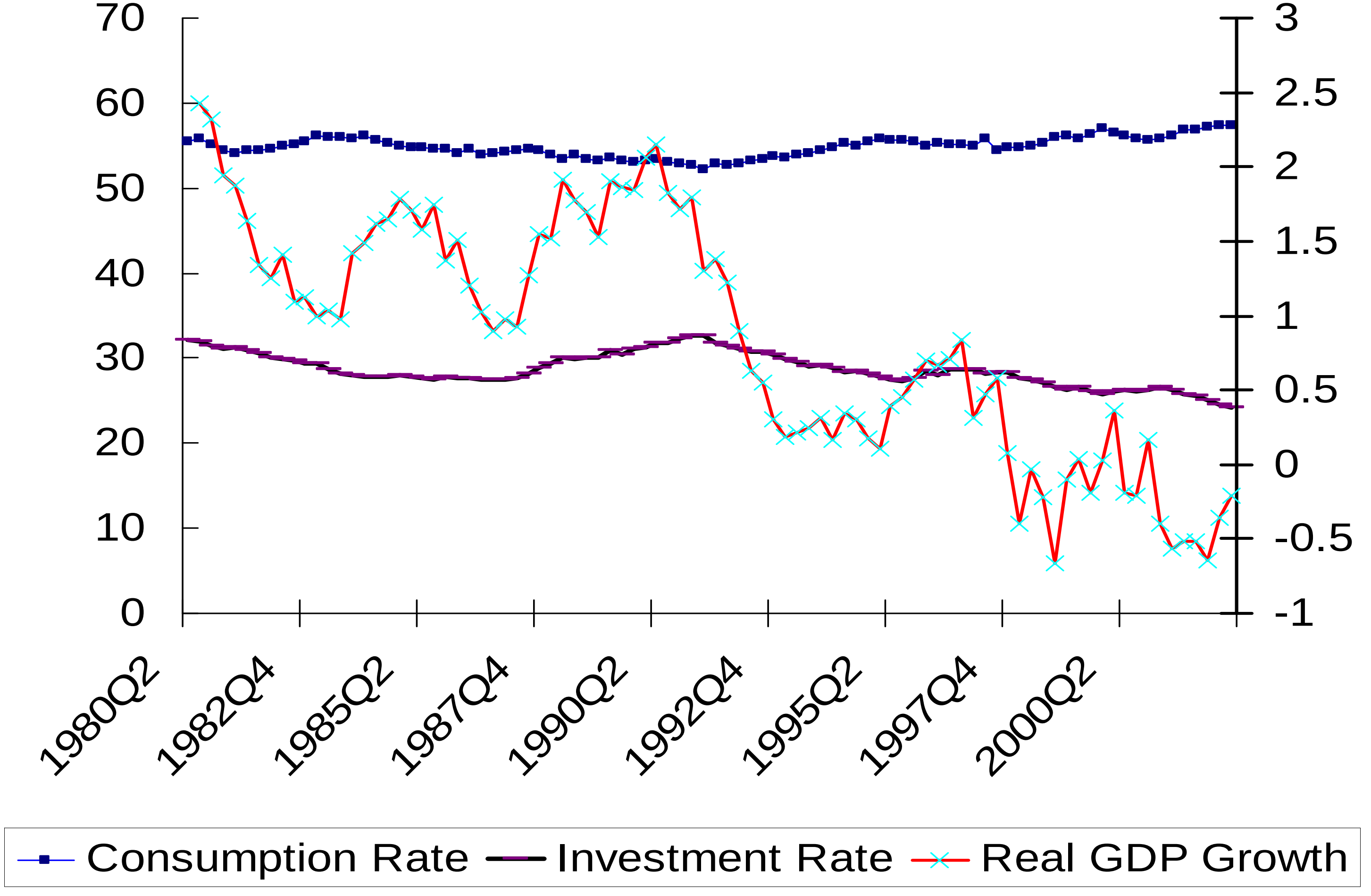
Korea

Taiwan

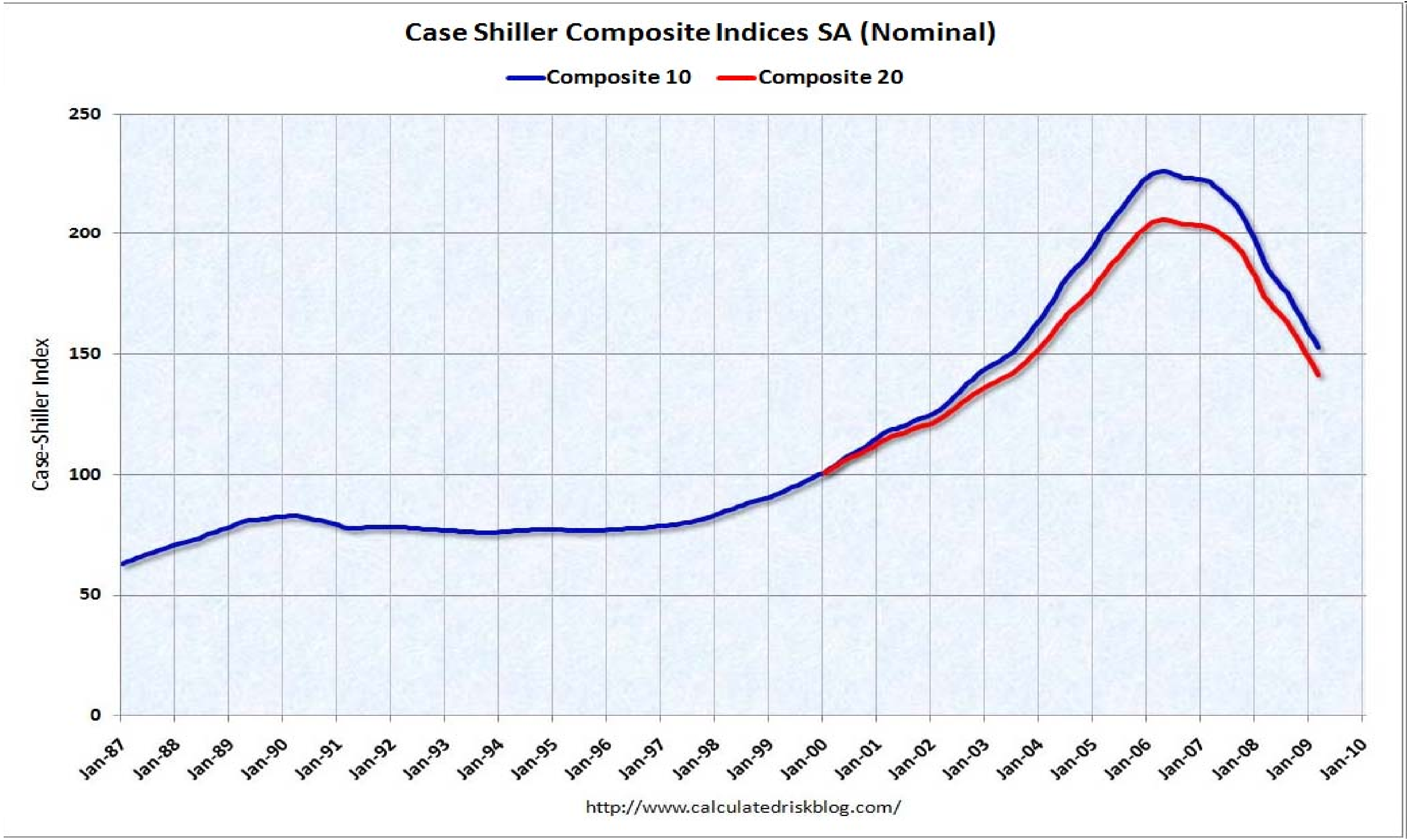
Share of Bank Equity Values in Full Equity Markets: Korea and Taiwan in the 1990s



Consumption, Investment, and GDP Growth (Japan)



US house prices



Regulatory forbearance and banking crises – theory

- Essential elements
  - Limited liability intermediaries
  - Imperfect (costly) monitoring leads to moral hazard/adverse selection
  - Deposit insurance
- A special case with growth (Dekle-Kletzer, 2006)
  - Constant returns technology (Y=AK)
  - Shareholders in firms and banks have limited liability
  - Can interpret value of land in terms of the value of the capital stock
  - Firm productivities are iid

Growth with the accumulation of loan-loss reserves

- Firms pay dividends – equities have positive value
- Bank earn zero profits – bank equity is zero
- Firm level investment is positively correlated with firm productivity
- The growth rate is constant
- Investment and consumption are constant shares of GDP
- The total value of equity to GDP ratio is constant

Banking with regulatory forbearance

- Banks pay dividends against loan losses
- Thus, banks renegotiate loans to firms with poor outcomes and extend more loans to firms with good outcomes
- Bank assets consist of claims against firms and the deposit insurance liability of the government
- Eventually, the sum of banking capital and the deposit insurance liability converges to a Ponzi scheme
- Deposit insurance and bank dividend payouts create transfers from the government to shareholders
- The deposit insurance indemnity, which accumulates endogenously, grows as a share of GDP

Approaching a crisis

- Bank lending expands endogenously because banks continue to hold non-performing assets and expand lending to performing debtors
- Leverage rises over time as banks expand lending to performing (and growing) firms while rolling over non-performing loans
- Eventually, the government realizes the losses in the banking system
- Under perfect foresight, investment declines gradually before the crisis and GDP growth falls steadily
- At the crisis, consumption growth suddenly drops if taxes are imposed on output or households are heterogeneous
- but consumption’s share in GDP rises up to the crisis

Banking crises without bubbles or multiple equilibria

- In this simple model, banks are insolvent when the crisis occurs
- GDP growth collapses along with investment in the crisis
- Approaching the crisis, the value of all firms rises in relation to GDP
- If capital is collateral, the value of collateral rises relative to GDP then collapses in the crisis
- Hence, it predicts a real estate boom followed by a bust
- The stock market value of banks declines as a share of the market before the crisis
- None of this requires a bubble

Capital inflows and banking crises

- Bank intermediated lending to emerging markets with deposit insurance creates a looting opportunity
- Capital inflows exacerbate instability in financial intermediation
- Banks do not have an incentive to hedge currency risk leading to growing risk (balance sheet effects)
- Fixed exchange rates or crawling pegs induce foreign currency deposits
  - Elements of emerging markets crisis models (eg. Calvo, Dooley and others)
  - Iceland may be a new example

- The conventional fragile financial structure of bank intermediation derives from a bank's role in transforming long-term into short-term assets
  – idiosyncratic consumption demands are paired with investments in capital with gestation lags
- A crisis can arise as a bank run leading to an output collapse (Chang-Velasco (1999))
- Foreign savings seeking low risk assets in advanced markets can
  - Lower real interest rates
  - Leading to rising asset and commodity prices

Leverage, liquidity and insolvency

- Mark-to-market and the leverage cycle
  - Exacerbates expansions and contractions (the concern over Basel II)
  - With moral hazard leads to bank insolvencies (the story just told)
  - Deleveraging can lead to fire sales and illiquid markets
- Liquidity
  - Moral hazard and imperfect enforcement
  - These create a role for public liquidity in systemic crises
  - Public debt issues can provide credit lines for private investors
  - Motivates the lender of last resort function of the central bank and Bagehot's rule

Public Debt and Crises

- Over the centuries, sovereign default has been a common feature of emerging market finance
- One notable regularity is that some countries have never defaulted while others have done so often
- Another is that debt renegotiations or restructurings seem to be a normal part of the market for sovereign debt
- In recent experience, defaults have been borne by both domestic and foreign creditors (although the means of default can differ)

Explanations of sovereign debt

- Focus on government's willingness to repay
- Thus, governments cannot commit – they have limited liability – but face indirect costs of reneging
- Essentially, default may be viewed as implementing implicit contingent payments guided by a simple bond contract
- This applies equally well to domestic public liabilities or government debt issued in domestic currency
- Debt denominated in foreign currency requires explicit renegotiation, preceded or not by default

- Theoretical models imply that
  - Renegotiation of foreign currency debt will be very frequent and anticipated
  - Inflationary surprises (positive and negative) will be everyday events
  - Implicit renegotiation does not depend on the level of indebtedness
- Fortunately, a tweak to the theory can fix this (it relies on private information)
- Conventional debt dynamics obtain until the government reaches a threshold debt level (as a share of GDP)
  - The government borrows at a ‘riskless’ short term rate below the threshold
- An adverse shock then leads to additional debt issued at higher interest rates
  - The interest spread on the debt should rise with indebtedness only after the debt level is high
  - It does in the data

Bank lending and bond borrowing

- Two trends (1990 to 2008) are important:
  - The shift from external debt to internal debt
  - The shift from bank loans to bond issues
- Banks as delegated monitors
  - Relational lending – evaluate and monitor borrowers
  - Offer lower entry barriers and steadier access for borrowers
  - Make smaller, more diverse loans
- Information asymmetries mean that borrower-lender pairs sort into different markets for different types of monitoring
- The coordination problem for bondholders and banks in restructurings differs
  - Possible strategic advantage for banks in renegotiation

Resolving debt crises

- Debt restructurings are painful
  - Coordination failures abound
- The financial architecture debate concentrated on contractual versus institutional innovation
  - Collective action clauses were introduced
  - The SDRM disappeared into the recycling bins
- IMF programs responded to the Asian crisis critique

Role of an IMF Program

- Monitoring
  - Reveals country policies and intentions
  - Hence, reduces variance of expected policy outcomes
  - But only if country commitment is credible
- Lending
  - Reduces likelihood of default
  - Hence, lowers probability of costly creditor coordination and restructuring
- IMF programs appear to catalyze private lending
  - Have a stronger effect for bond issues than for bank loans
  - Except for countries with high debt/GDP ratios
  - Precautionary programs appear to be effective

Trends in International Bond and Bank Lending

	Number of Transactions			Aggregate Value of Transactions (US$ billions)		
Year	Bonds	Loans	Total	Bonds	Loans	Total
1991	81	209	290	10	24	34
1992	177	252	429	21	18	39
1993	357	376	733	45	27	73
1994	307	508	815	39	40	79
1995	369	750	1,119	48	56	104
1996	522	1,066	1,588	81	83	164
1997	555	1,248	1,803	100	125	225
1998	234	550	784	52	62	114
1999	334	402	736	65	47	113
2000	284	532	816	59	81	141
2001	290	470	760	78	62	140
2002	219	384	603	63	44	107
Total	3,729	6,747	10,476	661	669	1,331

The impact of IMF programs on credit markets

- The impact of a program depends on the debt/GDP level
  - Both bond and bank flows increase for debt/GDP up to 65%
  - For bonds, interest spreads fall for debt/GDP between 35% and 70%
  - For bank lending, interest spreads rise for debt/GDP < 55% and do not respond for high debt levels
- A shift to bonds under IMF programs
  - Mid-range debtors (debt/GDP between 35-55%) are more likely to issue bonds under an IMF program than borrow from a bank
  - Precautionary programs are associated with falls in both borrowing and interest spreads
  - Programs that turn precautionary reduce bond spreads and increase bond borrowing

(Results from Eichengreen, Kletzer, Mody (2005))

Number of Transactions, by Debt Category and IMF Program

Type of Credit	Low Debt/GDP Range (0-30 percent)	
	No Program	IMF Program
None	1,301	389
Bonds	1,244	57
Loans	2,606	99
	Medium Debt/GDP Range (30-55 percent)	
	No Program	IMF Program
None	973	561
Bonds	958	1,000
Loans	2,094	898
	High Debt/GDP Range (more than 55 percent)	
	No Program	IMF Program
None	675	808
Bonds	253	217
Loans	589	461
	Full Sample	
	No Program	IMF Program
None	2,949	1,758
Bonds	2,455	1,274
Loans	5,289	1,458

Conclusions

- Incentive problems are at the core of financial crises
  - Moral hazard provides persuasive and simple explanations of crises that are fundamentals-based
  - The financial fragility of bank intermediation and liquidity failures can also be explained simply through moral hazard and adverse selection
  - Sovereign debt is a moral hazard problem as well
- Weak prudential regulation, supervision and enforcement with limited liability corporations creates moral hazard
  - Public sector guarantees of deposits address one problem of financial fragility (bank runs) but create another (moral hazard)
  - Simple models of growth without systemic shocks help explain boom/bust cycles following ill-structured financial liberalizations

- Capital inflows are an important part of the story for emerging markets
  - Frequently lead to increasingly risky domestic lending as real interest rates fall
  - Often end in sudden stops
  - Integrated financial markets are a mechanism for contagion
  - Global savings glut is being associated with the US and European mortgage crisis
- Facilitating debt restructuring is important
  - Mitigating the costs of crises and the costs of moral hazard is still a challenge
  - International public liquidity appears to play a useful role in emerging markets

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