Fiscal Correction. Ouch.

Sources: Alesina and Ardagna (2010); and IMF staff calculations.
Consumer Price Index by Detailed Sub Indices, Month and Statistic, % Change from 1 year ago.
Private Sector Credit Collapse.

% Change in Loans to Irish Private Sector.

Source: Central Bank, Table A.5
Ireland and Japan: Great Similarities.

Source: Bloomberg
<table>
<thead>
<tr>
<th>Country</th>
<th>2002 (%)</th>
<th>2003 (%)</th>
<th>2004 (%)</th>
<th>2005 (%)</th>
<th>2006 (%)</th>
<th>2007 (%)</th>
<th>%Δ</th>
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<td>22.5</td>
<td>24.1</td>
<td>26</td>
<td>28.8</td>
<td>32.9</td>
<td>34.9</td>
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<tr>
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<td>58.8</td>
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</table>

Mortgage Debt as % of GDP, selected countries.
ASSET PRICE DEFLATION

Source: Ronanlyons.com
WHAT WE DO

• We build a 2 country stock flow consistent model.

• Show effects of a debt-deflation cycle on households, firms, banks, the government, and the central bank in each country.
SO WHAT?

• We find price collapses across the economy can sustain a downturn, even as other areas of the economy experience a return to growth.

• Within a currency union, with one small country experiencing a deflation, only transfers from the larger country, and increased government expenditure in both, can bring the economy out of a deflationary spiral.
“When nominal prices and wages are deflated, debt service is a higher proportion of debtors' incomes, and the reduction or elimination of their margins of equity disqualifies them from further access to credit. Bankruptcies and defaults do likewise, and transmit the distress of debtors to their creditors, threatening the solvency and liquidity of individual lenders and financial institutions.”
1. Write out balance sheet & transactions matrices
2. Write behavioural model over these matrices
3. Solve the model recursively for its steady state
4. Shock the steady state; these are policy experiments
5. Add complexity/reality by adding rows, columns, etc
CAUSAL STRUCTURES

A macroeconomic shock occurs following a buildup of debt in the form of Bills, Bonds, and Equities, which causes debt liquidation, leading to distressed selling.

- leads to a contraction of deposit currency and of its velocity.
- Economy experiences a fall in the level of prices, and a still greater fall in the net worth of businesses.
- Businesses record falls in their profits.
- There follows a reduction in output, in trade, and in employment of labour, leading to pessimism and loss of confidence.
CAUSAL STRUCTURES

- The decline in prices leads to an increase in debt servicing, and this offset levels of debt liquidation.

- The economy experiences hoarding and a further slowing down of the velocity of circulation of money.
• Assume 2 countries, 5 sectors (households, firms, government, private banks, central banks)
• Country 1 is assumed to be large relative to country 2, in terms of population, trade flows, and overall economic output.
• The exchange rate, $E$ mediates between the two nations in the usual way.
• We assume a floating exchange rate.
• All assets are in monetary units.
• Households and firms in this model hold several assets: treasury bills, $B$, bonds, $BL$, and equities, $e$. 

BALANCE SHEETS
RESULTS: INVESTMENT SHOCK

• Investment drops 33% in Country 1.
• Compare results for a floating exchange rate & currency union
COUNTRY 1
COUNTRY 2

Graph showing real investment over time for different scenarios:
- Baseline
- Floating exchange rate
- Currency union
REAL GDP IN COUNTRY 1
Private Debt Levels Country 1

The graph shows the comparison of private debt levels across different scenarios: Baseline, Floating exchange rate, and Currency union. The y-axis represents the private debt levels, while the x-axis represents the years from 23 to 65.
GOVT DEBT LEVEL C I
GOVT DEBT LEVEL C 2
INVESTMENT SHOCK IN CURRENCY UNION.
SUMMARY

• Only factor to retain balance is fiscal policy and transfers from the centre.
• An argument for fiscal union?
• Future work: effect of non performing loans on bank behaviour and overall economic output.