The financial crisis: contribution and response of monetary and fiscal policy

Talks to Bristol Undergrads and MScs, 2014.
Me

• First year as an academic, after 20 years at the Bank of England, working in monetary policy directorate.
• Blog at www.longandvariable.wordpress.com, covering macro and public policy generally.
• Twitter feed: @tonyyates
• Recent topics: pensions, QE, fiscal policy, forward guidance, the ECB, the Fed, BoE reform, Scottish currency arrangements….
• Current teaching: MSc time series econometrics, Msc Advanced macro.
Introduction

- *The* economic event of our time
- Bankrupted several governments
- Toppled others
- Led to unprecedented state control of banks and state ownership
- Millions put out of work around the world
- Shook faith in the capitalist system, [Occupy, social disorder in Greece, Portugal], hindering its healing
- Undermined the euro
Effect on the profession

• Brought financial sector into disrepute; what was a tax cash cow for the UK revealed to be a black hole?

• ‘Science of monetary policy’ in New Keynesian models [Gali et al] now dubbed a ‘pretence of knowledge syndrome’ [Caballero].

• Strained monetary policy mandates.

• Fragmented view about appropriate regulatory response.
Plan for the 2 talks

• Today, and Thurs 8 May [5.15, 2D3, Social Sciences Centre]
• A fast and brief bullet point narrative of the crisis.
• Did monetary policy contribute to the crisis?
• Evaluating some of the policy responses to the crisis, here and abroad.
• Q&A : You can twist the topics to suit you if you like.
• Links to reading as we go along, and suggested further reading as links at the end of the second slide show.
1. Fast and brief bullet point account of the crisis
Pre crisis: Great Moderation

• ‘Great moderation’ followed the ‘Great Inflation’
  – unusually low and stable inflation
  – unusually *high* and stable growth.
• Some concluded we had conquered the business cycle.
• Spread of independent central banks
• Resolution of a long debate about what to target in favour of inflation targeting.
• Refinement of the study of optimal monetary policy through Taylor Rules, initially, and optimal commitment policy.
Pre-crisis: finance

- Deregulation: breaking down barriers between retail banks, building societies, investment banks
- Basle accord basing capital requirements on risk-weighting of assets, where weights based on banks own models.
- Innovation:
  - From originate to hold to originate and distribute [securitisation]
  - From deposit funding to wholesale funding of banks
  - Hi tech credit scoring.

- Banks operating through off-balance sheet, special purpose vehicles to get round capital regulations.
- Spreads unprecedentedly low. Deduced to be the result of the miracle of financial innovation.
Sub-prime

• Huge expansion of ‘Sub-prime’ lending based on political pressure to extend home ownership through relaxing risk management in the Federal Agencies. [See, for example, Calomiris(various)].

• Over-optimistic forecasts of house price growth.

• Under-recognition of the correlation of risks inherent [maybe all could default at the same time]
Sub-prime securitisation

• Sub prime loans bundled, supposedly to pool risks
• And liability carved up in complicated ways.
• Created securities rated AAA by the agencies.
• Complexity of these securities mean that inherent risks weren’t apparent to the holders or the ratings agencies.
• [Or, as Calomiris argues, ratings agencies competed to give optimistic ratings].
Sub-prime trigger

• Sub-prime mortgages started to fail in 2006.
• Low income borrowers better off walking away and putting the keys through the door.
• Even if whole sector failed not that large [about a trillion?]
• However, mounting uncertainty about: who exposed to what and by how much.
• Caused wholesale funders to pull money out of banks, investment banks and insurance companies to avoid the worst case scenario.
• But in doing so, made this scenario a reality.
Bear Sterns and Lehman Bros

• Fed rescues Bear Sterns.
• Fed then lets Lehman Bros fail, because unable to quantify the exposure by taking on LB’s liabilities.
• Previous held view that large institutions would be supported revised sharply.
• Banks in UK, Iceland, Ireland, France, Germany, Greece look like failing without state assistance.
Financial crisis to macro crisis

• Sharp, unusually synchronised downturn across western world
• Plunge in business confidence and investment.
• Automatic stabilisers / too-rosy view of structural deficits / fragility of banks plunges sovereigns into fiscal trouble.
• Private financial crisis socialised by actual support, of expectation of it.
• Eg Ireland introduces 100% deposit guarantee and is soon forced to seek bail-out as spreads rise to levels intolerable for it to continue servicing debt.
• Same in Greece, Portugal.
Policy responses

• US fiscal stimulus package driven through Congress by new Obama administration.

• Central banks, initially doubting crisis will be so bad, worrying about inflationary pressures, don’t respond right away.

• After Lehman’s failure, soon cut rates to zero. [See recently released Fed transcripts, for example].

• Forced to undertake lender of last resort, and several unconventional monetary policies.
EZ bails out PIGs

• Eurozone: coordinated fiscal stimulus not possible. And many sovereigns under stress.
• Greek/Portuguese/Irish case threatens continuation of eurozone.
• If they can’t finance their budgets, either default and/or forced to start printing own currency again to prop up banks. (etc)
• Could stand loss of small peripherals, but worry is that would lead to exit of Spain and Italy.
Spain and Italy

• Spanish economy hit hard in same way as Ireland.
• Spanish fiscal policy quite prudent in run up.
• But banks heavily exposed by property and construction boom, despite operating form of ‘macro pru’ [requiring more capital in a boom] known as ‘dynamic provisioning’.
• Italian economy stagnant for 10 years already, no political consensus to sort out persistent budget deficits.
ECB and the EZ financial crisis

- ECB edges towards lender of last resort.
- Securities Market Program. Then Outright Monetary Transactions.
- Promise to buy unlimited short term securities of troubled sovereign from secondary market.
- Provided fiscal problem sorted out by country seeking assistance from the ESM.
- Spreads on peripheral bonds narrow dramatically, quelling panic.
- OMTs so far not needed.
2. Did monetary policy cause the financial crisis?
Did monetary policy cause the crisis?

- 2 ‘domestic’ stories of monetary policy neglect
  - Loose relative to rules
  - Nominal illusion.
- 1 global one:
  - Failure of international policy coordination.
2.1 Did neglect of policy rules cause the crisis

• Policy was too loose compared to well established rules for interest rates

• This led to the boom the economy and in asset prices...

• Which eventually had to come to an end, in the form of a bust.

• John Taylor characterises it also as a move from rules to discretion.
‘Taylor rule’

\[ i_t = 2 + \pi^T + 1.5 \times (\pi_t - \pi^T) + 0.5 \times (y_t - y^n) \]

Raise rates if inflation rises, and/or the output rises.

Made famous in ‘Discretion versus policy rules in practice’

Rule i) fit historical interest rates well and ii) stabilised inflation and output gap well in macro-models.
Blue line [actual FFR] is below the red [Taylor Rule] = policy too weak?

Source: Bernanke, 2010
Forecast-based Taylor rule

\[ i_t = 2 + \pi^T + 1.5*(\pi_t^F - \pi^T) + 0.5*(y_t^F - y^n) \]

Bernanke’s (2010) response was to point out that the Fed was (and should) respond to deviations of forecasts, not actual inflation, etc...
Blue line [actual FFR]=green line [Taylor rule using forecasts of inflation]

Source: Bernanke, 2010
Comments on the Taylor Rule and the crisis debate

• Krugman: Taylor Rule is ‘made up’.
  – Not fair. Fits history, when policy did well. And does well in models of monetary policy.

• Monetary policy just not strong enough, and the effects are not persistent enough, to cause large and long lasting real problems.

• Taylor rule ‘mistakes’ don’t line up with cross country evidence on asset boom...
Relative to Taylor Rule, policy loose in the US, but tight in the UK...

Source: Bean et al, 2010
At the same time, the housing boom was LARGER, the opposite of what you would expect if Taylor was right, other things equal.

[To be fair to Taylor, other things aren’t equal].

Source: Adam and Marcet, 2010
2.2 Did low nominal rates cause crisis through ‘nominal illusion’?

• Low nominal rates mistaken for low real rates

• Low real rates judged to imply portfolios no longer efficient

• Investors seek to raise real returns, end up (unintentionally) taking on more risk
Evidence on money illusion

• Modigliani and Cohn (1979)
  – Inflation negatively correlated with stock prices
  – High inflation means high nominal rates
  – High nominal rates mistaken for high real rates
  – Cash-flows from stocks discounted at higher rates
  – Stocks fall
Inflation high, asset prices low!

Figure 3: Price-dividend ratios for housing and stocks measured with data from national accounts

Source: Piazzesi and Schneider, 2007
Other evidence of nominal illusion

A10. Try to imagine how things would be different if the United States had experienced higher inflation over the last five years, so that prices of things you buy had risen to higher levels than we actually see today. How different do you think your income (the total dollars you earn in a month) would be now, in comparison with your actual income now, if we had had the higher inflation? [Circle one number]

1. My income (in dollars per month) would be lower [28%] [n = 114]
2. My income (in dollars per month) would be about same. [35%]
3. My income (in dollars per month) would be higher. [31%]
4. No opinion. [6%]

Source: Shiller (1997)
Money illusion...

B9. Which of the following comes closer to your biggest gripe about inflation:
   1. Inflation causes a lot of inconveniences: I find it harder to comparison shop, I feel I have
to avoid holding too much cash, etc.
   2. Inflation hurts my real buying power, it makes me poorer.
   3. Other:

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<tr>
<td>US All</td>
<td>7%</td>
<td>77%</td>
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<tr>
<td>Economists</td>
<td>49%</td>
<td>12%</td>
<td>40%</td>
<td>78</td>
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Source: Shiller (1997)
The ‘risk taking channel’ of monetary policy

- Jiménez et al. (2009) investigate the impact of the stance and path of monetary policy on the level of credit risk of individual Spanish bank loans. They find that lower short-term interest rates prior to loan origination result in banks granting more risky new loans. Lower interest rates, by contrast, reduce the credit risk of outstanding loans (i.e. since clients pay a reduced rate on their variable rate loans their probability to default declines).

- Ioannidou et al. (2009) analyze the link MP-bank risk on the side of loan pricing using Bolivian data. When interest rates are low, not only do banks take on higher risk but they also reduce the loan rates of risky vis-à-vis riskless borrowers.

Source: Altunbas, Gambacorta and Marques-Ibanez, 2009
2.3 Did *global* monetary policy neglect cause the crisis?

• Country by country inflation targeting
• No global policy coordination
• Loose Fed policy (recall we contested that, but...)
• ...EME’s maintained undervalued exchange rates
• This caused huge trade imbalances, as the west borrowed to buy cheap EME exports
• Aggravating the ‘search for yield’.
• And that brought about eventual bust as the borrowers realized they couldn’t repay
Current account imbalances in context

![Graph showing current account imbalances across different countries and time periods.]

Source: Bush, Farrant and Wright.
Counters to the global neglect story

• Monetary policy too weak to cause large and long lasting real effects
  – Open economy version of the point we already made.
  – Shifts in nominal rates should be accompanied by shifts in exchange rates, leaving real exchange rates unaffected eventually.
  – So say our well-calibrated models
  – But still, real exchange rates do move around a lot, and persistently.
Counters to global neglect story

• Borrowing may be perfectly rational.
• Equating borrowing with a problem= Polonius’ advice in Hamlet ‘neither a borrower nor a lender be’.
Norway’s North Sea ‘imbalance’

Norway discovered North Sea Oil in the 1970s.

Borrowed massively to build the infrastructure and technology to extract it.

And, potentially, borrowed for consumption against future windfall.

Perfectly rational, forward-looking behaviour.

Graph stolen from Obstfeld-Rogoff.

Figure 1.2
Norway’s saving-investment balance, 1973–94. (Source: OECD)
Imbalances, or other policy failures?

• So imbalances on their own not necessarily indicative of a problem, and could be rational....

• However combined with prudential failure, could be.....

• Brief case study of Ireland.

• Very nice description in report on regulatory failure in Ireland.
Irish current account imbalance

Source: IMF Article IV on Ireland, 2007
Commercial property lending in Ireland

Figure 2.4: Private Sector Credit 2002-08

Commercial property lending by Irish banks growing very rapidly.

Commercial property is historically even more volatile and asset than residential.

Source: Central Bank of Ireland

Source: Commission of investigation into the banking sector in Ireland, 2011
Commercial property lending in Ireland and other countries

Exposure to commercial property in Ireland as % of GDP much greater than other troubled countries!

Points to potential burden on taxpayer if the bank was to be bailed out to rescue bad commercial property loans.

Potential turned into reality.

Source: IMF Article IV on Ireland, 2007
At the same time as running a risky loan book, the counterpart to the large current account deficit was a reliance on wholesale rather than deposit funding. Which can quickly melt away. And did.
Recapping on Ireland

• Point of Irish case study: imbalances can be a problem, since they will probably amount to wholesale funding through banks.

• But real cause is regulatory failure. Funding structure can be regulated. Banks can be forced to provision for risky loans.
Caballero: safe assets and global imbalances

• “The other imbalance and the financial crisis”, Ricardo Caballero (2009),
  http://www.nber.org/papers/w15636

• Poor countries normally expected to import capital

• But lack of safe storage of wealth led them to export it.

• That combined with prudential failure in West.
Global neglect of monetary policy inevitable

- Imbalances may reflect global neglect.
- But global coordination is an impossible dream.
- Previous attempts [eg Sterling gold standard, Bretton Woods] always broke down when it suited one party.
- Currently, China attempting to force export led growth by undervaluing Renminbi.
Recapping on global monetary neglect hypothesis

• Imbalances could have been rational.
• Even if not, fundamental cause may be prudential policy, not monetary policy.
• Monetary policy too weak to produce very long lasting powerful real effects like imbalances.
• Alternative explanations for ‘uphill’ capital flows
• Monetary policy coordination not achievable
• And anyway could never correct for strong and long lasting real forces [neutrality again].
3. Evaluating monetary and fiscal policy responses to the crisis
• What have policymakers done in response to the crisis
  – Rates down to the zero bound
  – QE
  – Credit easing
  – Forward guidance on interest rates
  – Fiscal stimulus
Policy rates across the world

Source: Stone et al, IMF, 2011
3.1 Why is the zero bound zero?

- Central banks could lend at <0 interest rates. I would borrow from them at that. But it would be a gift.
- No bank would lend on at negative rates because they could get a better deal holding wealth as cash. [0%]
- Leads to one proposed solution: taxing cash. But that could cause chaos as notes trade at less than par, and by variable amounts.
3.2 Quantitative Easing
As room for conventional stimulus ran out at the zero bound... Central banks bloated their balance sheets as they engaged in unconventional stimulus of one sort or another.

Source: Natixis special report by Sylvain Broyer, Feb 27, no 30.
Central bank balance sheet expansion

Stone et al, IMF, 2011
QE Gilt purchases

Figure 1. Cumulative Gilt Purchases by Maturity

Source: Joyce et al, BoE QB
Rationale for QE

• Early MPC communication, and still cited by commentators like Tim Congdon, or Republicans in the US
  – QE is about expanding the money supply.
  – More money chasing the same amount of goods.
  – Remember PT=MV
  – However, at the ZLB, things are different.
Many think of PT=MV. But money demand increases as nominal rates fall, so V falls. And that means more M does not mean higher P.
Money, prices and the ZLB

• More money only means higher prices if:
  – Contraction is mild enough that interest rates were expected to rise in the future, ie not in a permanent liquidity trap
  – More money is the corollary of belief that lower interest rates will prevail now.
  – Suggests doing forward guidance instead. More money now not needed.
  – Though Woodford pointed out it could be a verifiable commitment associated with lower future rates.
More money useless in a perfect liquidity trap

• Imagine helicopter drops of money, period after period.

• Surely *that* would raise prices.

• Well, not in our standard money-macro model.

• Assumption that at the end of time all money and bonds redeemed by the government.

• What?!
Money in the standard model

• By money being redeemed is meant that at the end of time, you could get some consumption goods for it.

• Not the way policymakers think about it. In fact, when we explained it to them, they didn’t even know this was hidden in the model they had been using for forecasting all those years!
If no redemption, why hold it?

• But if you drop the assumption of redemption, the model has no answer to the question as to why people hold money in the first place.

• With redemption in the model, helicopter drops have no effect, because people understand and expect them all to be reversed eventually.

• If you don’t like this, fair enough.
Dropping the no redemption assumption

• But IF you don’t like it.
• You have to build a new model of monetary policy.
• And that might involve ditching most of what you thought about how monetary policy works.
• Recapping, all of that was about the problem with doing QE to expand the money supply.
2nd Rationale for QE

• Now: money story dropped.
• Instead:
  – bid up the price of longer term government bonds,
  – force holders to shift portfolios into private assets
  – bidding up the price of those assets
  – lowering implicit interest rates in those assets.
  – Lowering cost of private borrowing and stimulating spending
Figure 4. Gilt Yield to Maturities and Corresponding Duration-Matched Zero-Coupon OIS Rates (Left Panel) and the Changes in Those Yields and the Yield-OIS Spread (Right Panel) Before and After Announcements Relating to QE Purchases

Source: Joyce et al, BoE QB, 2010
### Table 1: Empirical Estimates of LSAP Effects

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Method</th>
<th>Estimated Effect of $600 billion LSAP (±2 std errs if avail.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modigliani-Sutch (1966, 1967)</td>
<td>Operation Twist</td>
<td>time series</td>
<td>0 bp (±20 bp)</td>
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<tr>
<td>Bernanke-Reinhart-Sack (2004)</td>
<td>Japan, U.S.</td>
<td>event study</td>
<td>400 bp (±370 bp), 40 bp (±60 bp)</td>
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<td>Krishnamurthy-Vissing-Jorgensen (2010, 2011)</td>
<td>postwar U.S., QE1, and QE2</td>
<td>time series</td>
<td>15 bp (±5 bp)</td>
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<td>Gagnon-Raskin-Remache-Sack (2011)</td>
<td>QE1</td>
<td>event study,</td>
<td>30 bp (±15 bp), 18 bp (±7 bp)</td>
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<td>D’Amico-King (2010)</td>
<td>QE1 Treasury purchases</td>
<td>security-specific event study</td>
<td>100 bp (±80 bp)</td>
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<td>Hamilton-Wu (2011)</td>
<td>QE2</td>
<td>affine no-arbitrage model</td>
<td>17 bp</td>
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<tr>
<td>Hancock-Passmore (2011)</td>
<td>QE1 MBS purchases</td>
<td>time series</td>
<td>depends, roughly 30 bp</td>
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<tr>
<td>Swanson (2011)</td>
<td>Operation Twist</td>
<td>event study</td>
<td>15 bp (±10 bp)</td>
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<td>Joyce-Lasasoa-Stevenson-Tong (2011)</td>
<td>U.K. LSAPs</td>
<td>event study,</td>
<td>40 bp</td>
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<td>Neely (2011)</td>
<td>effect of U.S. QE1 on foreign bond yields</td>
<td>event study</td>
<td>17 bp (±13 bp)</td>
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</tbody>
</table>

*Source: Modigliani-Sutch (1966, Sections 3-4), Bernanke-Reinhart-Sack (2004, Table 7, Figure 6, and author’s calculations), Greenwood-Vayanos (2008, Table 2), Krishnamurthy-Vissing-Jorgensen (2011, Section 4), Gagnon et al. (2011, Tables 1-2), D’Amico-King (2010, Figure 3), Hamilton-Wu (2011, Figure 11), Hancock-Passmore (2011, Table 5), Swanson (2011, Table 3), Chung et al. (Figure 10), Joyce et al. (2011, Figure 9), Neely (2011, Table 2). Almost all of these estimates involve author’s calculations to renormalize the effect to a $600 billion U.S. LSAP.*
Promising evidence, but...

• Wallace irrelevance: at ZLB, QE is a swap of one 0% interest, default risk free asset, for another.

• Evidence doesn’t prove persistent benefit.

• Temporary effect on yields could come about because bond markets think it might work for a bit.

• Evidence of an effect doesn’t mean a benefit.
Further critique of QE

• At least on grounds of robustness, MPC should have considered buying private assets more directly.
• At the time only BoJ evidence: very unpromising.
• MPC itself never properly discussed. BoE executive reserved for itself, on ambiguous legal grounds, decision about what to buy.
• Left MPC decision about ‘how much’, as if that was all that mattered.
3.3 Forward guidance on interest rates
Motivation for forward guidance

• If current rates at ZLB, change future rates.
• ‘Delphic’
  – clarifying what you were anyway going to do with interest rates, to reduce uncertainty, or correct mispeceptions
• ‘Odyssian’
  – Creating the belief that you will keep rates lower in the future than you would otherwise have been expected to.
‘Odyssian Forward Guidance’

Today’s interest rate at ZLB; instead lower tomorrow’s.
Do this by committing to keeping rates ‘lower for longer’
i.e. longer than markets would otherwise have expected
given historically understood ways of behaving

Difficulty: how to keep your hands tied from tightening when you normally would
Forward guidance at the Fed

August meeting said, “The Committee currently anticipates that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.”

Source: FOMC minutes of August, 2011
Effect of Fed forward guidance

Source: Williams, FRBSF, 2011

Figure 1: Intraday Treasury Yields

Note: Trading data from 9:30am to 4:00pm EDT, at five-minute intervals (source: Bloomberg)
Bank of Canada forward guidance

“Conditional on the outlook for inflation, the target overnight rate can be expected to remain at its current level until the end of the second quarter of 2010 in order to achieve the inflation target.”
Effect of Bank of Canada forward guidance

Canadian yield curve up to 2 years

6- to 12-months: ↓ 14 bps

- Red: 20 April 2009
- Blue: 21 April 2009
Issues with forward guidance

• Do markets accept conditionality/state dependence of guidance?

• Time-consistency: you may not be believed. Once the recovery is underway, there is the temptation to tighten policy to prevent any overshoot of inflation.
UK forward guidance

• FG1: no rate increase at least until unemployment falls to 7%
• Confusion: Carney explains that it implies no more monetary stimulus, but makes monetary policy ‘more effective’
• More effective linked to effect of reducing uncertainty over rates. Which is very small.
• August 2013 Press conference launch all about rescuing the recovery.
Critique of UK FG1

- Carney undoubtedly wanted FG that would inject more stimulus.
- But other MPC members were against it. And shifting economic data as the recovery got under way went against Carney.
- Inexplicable ending of QE.
- Borrowed the language of FG proper, for no real gain. Should have reserved this policy for when it was needed.
- Time to try FG was before hitting the ZLB, not 4 years afterward.
UK FG2

• Single u/e indicator dropped.
• 17 forecast indicators used instead.
• Positive legacy of forward guidance will be increased transparency around the MPCs forecast.
• Although there is a great deal further they could go.
3.4 Fiscal policy response to the crisis

[to be completed for 8 May talk; random slides only at this point!]
Controversies over fiscal policy

• Role of discretionary fiscal stabilisation. How much and who should do it?
• Existence of debt limits [Reinhart and Rogoff spreadsheet incident].
• Isolating and measuring the fiscal multiplier.
• The bond market and confidence fairies [Krugman’s critique].
• The optimal size of the state.
## Fiscal multipliers

<table>
<thead>
<tr>
<th>Source</th>
<th>Methodology</th>
<th>Country</th>
<th>Fiscal Shock</th>
<th>One quarter</th>
<th>One year</th>
<th>Two years</th>
<th>Three years</th>
<th>Cumulative over two years (where applicable)</th>
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<tr>
<td>Al-Eyd and Barrell (2005)</td>
<td>NGEM model with one-year shock; Taylor interest rate rule assumed to meet domestic inflation targets</td>
<td>France</td>
<td>Indirect tax</td>
<td>0.3</td>
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<td>Corporate tax lump sum</td>
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<td>Direct tax</td>
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<td>Transfers</td>
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<td>Direct tax</td>
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<td>Blanchard and Perotti (2002)</td>
<td>Quarterly structural VAR. No explicit control for interest rates or money supply. Sample: 1960:Q1–1997:Q4.</td>
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<td>G, DT</td>
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<td>Brooks and Parker (2008)</td>
<td>Econometric case study of the 2008 tax reform. Implicit control for interest rates through fixed effects</td>
<td>United States</td>
<td>Tax rebate</td>
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<td>Bryant and others (1988)</td>
<td>Comparison of various frameworks (econometric, VAR, and model-simulations). Varying assumptions about the interest rate response.</td>
<td>United States</td>
<td>G</td>
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The multiplier controversy

- CER: multipliers larger at the zero bound
- Freshwater economists don’t accept case for inefficiently low spending
- Ambiguity in literature on optimal tax stabilisation policy: debt as a random walk, vs risk of sovereign debt run
- Identifying fiscal ‘shocks’
Figure 1: How do the fiscal consolidations planned in other industrialised countries compare to the UK’s plans?

Source: IFS, 2011
Institutional questions

• Was pre-crisis policy worse because of a lack of delegation?
• Monetary-fiscal policy coordination post the crisis
• Threat to central bank independence from fiscal implications of zero bound policies
• Threat to success of zero bound policies because of expectation of central bank conservatism