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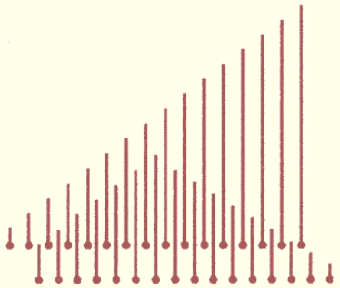
Discussion of “Macroprudential and other policies”

E Philip Davis

September 2010



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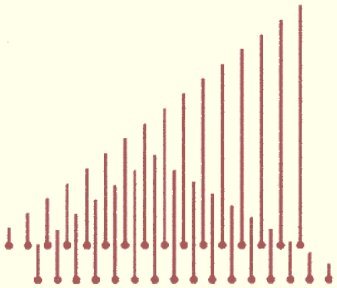
(1) A NIESR Perspective



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OECD Crises

- Between 1946 and 1972 there were no OECD crises
- In the 1970s there were crises in the UK, Spain and Germany
- There are eight crises in 2007-8
- A crisis is where there is significant intervention, a large bank is nationalised or there a lots of bad debts

World Bank/BIS crisis dating

Crisis	Date
Belgium	2008
Canada	1983
Denmark	1987
Finland	**1991**
France	1994, 2008
Germany	2008
Italy	1990
Japan	**1991**
Netherlands	2008
Norway	**1990**
Sweden	**1991**
UK	1984, 1991, 1995, **2007, 2008**
US	**1988, 2007, 2008**

Note: bold indicates systemic banking crisis

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NIESR work on bank regulation and financial stability

- Barrell, Davis, Karim and Liadze (2010) in JoBF and subsequent work were first to find a role for capital and liquidity in OECD crisis models
  - House price bubbles matter
  - Sustained deficits matter
- Using logit model together with a banking sector sub-model of NiGEM global macro model enabled assessment of overall costs and benefits of regulation in the UK – optimal level of tightening (Barrell et al (2009) FSA OP)
- Recent work looks at the split between on balance sheet and other revenues (OBS)
  - Level of OBS does not matter as it varies across countries a lot
  - Faster growth of OBS activity boosts crisis probabilities

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Calibrating macroprudential surveillance

- In “Calibrating macroprudential surveillance” we put in all ‘normal’ variables and test down with 14 OECD countries, 12 crisis and data for 1980 to 1997
- As in earlier work, found that “traditional” variables such as credit growth, output growth and M2/reserves less relevant to OECD – artefact of dominance of global samples by emerging markets

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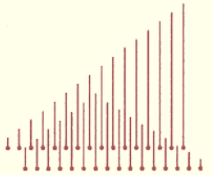

Explaining OECD Financial Crises

- We explain crisis probabilities (logit) in OECD 1980-1997

$$\mathrm{Prob}(Y_{it}=1)=F(\beta X_{it})=\frac{e^{\beta' X_{it}}}{1+e^{\beta' X_{it}}}$$

Box 1: List of Variables (with variable key)	
Variables used in previous studies: Demirguc-Kunt and Detragiache (2005); Davis and Karim (2008).	1. Real GDP Growth (%) (YG)
	2. Real Interest Rate (%) (RIR)
	3. Inflation (%) (INFL)
	4. Fiscal Surplus/ GDP (%) (BB)
	5. M2/ Foreign Exchange Reserves (%) (M2RES)
	6. Real Domestic Credit Growth (%) (DCG)
Variables introduced in JoBF.	7. Liquidity (%) (LIQ)
	8. Leverage (%) (LEV)
	9. Real Property Price Growth (%) (RHPG)
This paper	10 Current Balance as % GDP (CBR)

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Nested testing of the crisis model, 1980-1997

Step	(1)	(2)	(3)	(4)	(5)	(6)	**(7)**
LEV(-1)	-0.339 (1.7)	-0.339 (1.8)	-0.348 (1.9)	-0.347 (1.9)	-0.417 (2.9)	-0.345 (2.7)	**-0.384 (3.2)**
NLIQ(-1)	-0.106 (1.8)	-0.106 (1.9)	-0.108 (2.0)	-0.113 (2.2)	-0.126 (2.7)	-0.104 (2.5)	**-0.105 (2.6)**
RHPG(-3)	0.091 (1.9)	0.091 (1.9)	0.089 (1.9)	0.095 (2.4)	0.09 (2.4)	0.086 (2.3)	**0.081 (2.1)**
CBR(-2)	-0.434 (2.3)	-0.434 (2.3)	-0.441 (2.4)	-0.438 (2.4)	-0.418 (2.3)	-0.3 (1.9)	**-0.333 (2.2)**
DCG(-1)	-0.101 (1.5)	-0.101 (1.6)	-0.1 (1.6)	-0.1 (1.5)	-0.108 (1.7)	-0.053 (1.0)	
YG(-1))	0.277 (1.5)	0.277 (1.5)	0.274 (1.4)	0.279 (1.5)	0.29 (1.5)		
RIR(-1)	-0.054 (0.3)	-0.055 (0.6)	-0.055 (0.6)	-0.06 (0.7)			
BB(-1)	0.022 (0.2)	0.02 (0.2)	0.023 (0.2)				
M2RES(-1)	-1.51E-05 (0.2)	-1.52E-05 (0.2)					
INFL(-1)	-0.0012 (0.1)						

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Model character

- Up to four lags tried in house prices, credit growth, current account and GDP growth
  - Cyclical variables drop out
  - Lending growth drops out
- Lending quality matters with house price growth and current balances as indicators

	Estimated Equation		
	Dep=0	Dep=1	Total
P(Dep=1)< 0.057	143	3	146
P(Dep=1)> 0.057	55	9	64
Total	198	12	210
Correct	143	9	152
% Correct	72	75	72
% Incorrect	28	25	28

9 out of 12 crises called
Almost half of false calls precede crises

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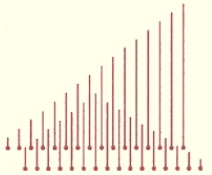

Using the model in macroprudential surveillance setting

- Forecasts over 1998-2008, using actual for RHS (bold exceeds sample mean)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BG	0.005	0.004	0.003	0.004	0.009	0.005	0.007	0.014	0.025	0.048	**0.070**
CN	0.032	0.054	0.056	0.033	0.018	0.022	0.026	0.037	0.030	0.036	0.042
DK	0.015	0.041	**0.060**	0.046	0.048	0.029	0.043	0.030	0.042	0.030	**0.113**
FN	0.004	0.006	0.011	0.007	0.000	0.000	0.000	0.004	0.002	0.007	0.008
FR	0.025	0.018	0.012	0.014	0.040	0.028	0.032	0.053	**0.100**	**0.193**	**0.218**
GE	0.026	0.027	0.029	0.045	**0.058**	0.031	0.016	0.020	0.007	0.007	0.007
IT	0.001	0.002	0.002	0.009	0.017	0.020	0.026	0.039	0.034	0.054	0.019
JP	**0.071**	0.025	0.009	0.010	0.007	0.007	0.003	0.002	0.001	0.001	0.002
NL	0.020	0.018	0.050	0.049	**0.157**	**0.141**	**0.079**	0.028	0.017	0.019	0.007
NW	0.011	0.006	0.039	0.016	0.001	0.001	0.006	0.003	0.002	0.001	0.001
SD	0.019	0.016	0.034	0.048	0.039	**0.058**	0.017	0.006	0.009	0.011	0.008
SP	0.005	0.006	0.010	0.028	0.043	0.044	0.047	**0.096**	**0.266**	**0.516**	**0.580**
UK	0.049	**0.060**	**0.088**	**0.173**	**0.203**	**0.201**	**0.115**	**0.207**	**0.282**	**0.277**	**0.254**
US	0.025	0.032	0.044	**0.074**	**0.081**	**0.067**	**0.103**	**0.064**	**0.075**	**0.097**	**0.125**

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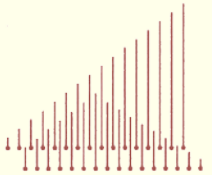

Using the model in macroprudential policy setting

- We can invert the probability model to calculate the additional levels of liquidity and leverage required for the probability of a crisis to be 0.01 in each country and year
  - Re-estimate each year from 1997, predict one year
  - Raise capital and liquidity to get probability 0.01
- Capital and liquidity form the defences,
  - house prices and current balances are the problems we need to provision against, not cycles.

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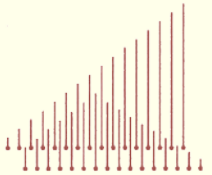

Country and aggregate targets

- Country max reduces probability to 0.01 in worst year
- The average of these could be used as a criterion
- Major cross country differences in warranted tightening

Column	1	2	3	4
	Additions to country specific levels of liquidity and leverage to reduce all prob. to 0.01 or below*		Under or overshoot	
			(column 1 - 3.7)	**(column 2 - 4.59)**
Top Panel	lev+nliq	lev alone	lev and nliq	lev
Belgium	2.11	2.56	-1.59	-2.03
Canada	3.31	4.15	-0.39	-0.44
Denmark	3.35	4.15	-0.35	-0.44
Finland	0.00	0.00	-3.70	-4.59
France	5.08	6.25	1.38	1.66
Germany	3.12	3.79	-0.58	-0.80
Italy	1.74	2.14	-1.96	-2.45
Japan	3.96	5.19	0.26	0.60
Neths	4.72	5.80	1.02	1.21
Norway	2.34	2.87	-1.36	-1.72
Sweden	2.38	2.90	-1.32	-1.69
Spain	9.32	11.48	5.62	6.89
UK	6.08	7.63	2.38	3.04
US	4.35	5.34	0.65	0.75
Mean (International Benchmark)	**3.70**	**4.59**		
SD	2.24	2.77		

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Countercyclical provisioning

- Has to be calibrated on house prices and current account and not credit or output gap – example of 5% higher RHPG

	France		Spain		UK		US	
	Regulatory adjustment	Actual RHPG (-3)	Regulatory adjustment	Actual RHPG (-3)	Regulatory adjustment	Actual RHPG (-3)	Regulatory adjustment	Actual RHPG (-3)
1998	0.0	-3.2	0.0	-0.1	0.6	-2.5	0.0	0.8
1999	0.0	1.3	0.0	-1.7	1.0	0.2	0.0	1.5
2000	0.0	0.8	0.0	0.0	1.9	6.2	0.4	1.8
2001	0.0	1.7	0.0	3.8	3.5	8.9	1.5	4.2
2002	0.1	7.5	0.3	5.3	3.8	9.5	1.7	3.1
2003	0.0	6.2	0.4	4.7	3.8	13.7	1.2	4.0
2004	0.0	6.1	0.5	6.1	2.5	6.1	2.2	5.4
2005	0.7	7.2	2.1	12.5	3.9	14.3	1.1	4.9
2006	2.2	10.0	4.6	14.1	4.8	13.9	1.5	4.3
2007	3.7	13.4	6.8	13.4	4.7	10.1	2.1	6.7
2008	4.0	13.6	7.3	10.2	4.4	3.0	2.7	8.4

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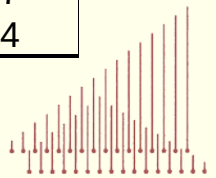
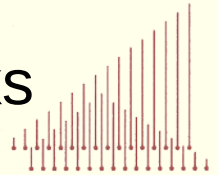


Interaction with monetary policy

- Overall country adjustment to reduce crisis probabilities to 0.01 both on levels and cyclical basis depends partly on macroeconomic volatility
- It would be first best to reduce housing bubbles and current account deficits so lending was sustainable
- This could be done by monetary and fiscal policies, possibly with a longer time horizon for inflation targeting
- On the other hand, doubtful that likely macroprudential regulations will significantly affect macroeconomy (necessitating monetary response), unless imposed rapidly/with major cyclical variation

- For example in BIS (2010) and Barrell et al (2009) overall regulatory tightening gave rise to only around 0.1% off GDP per 1 percentage point rise in liquidity and capital ratios – even lower (-0.03%) if countries move together
- Nevertheless may be benefits to MP from macroprudential policy (BIS 2010):
  - Less frequent financial crises which increase economic fluctuations
  - Prevent financial distress reducing effect of interest rates
  - Less pressure to cut interest rates for financial stability in the downturn with possible inflation risks



Interaction with microprudential policies

- Crisis probabilities also depend on the existing stringency of microprudential regulation – the weaker the regulation, the more adjustment needed for 0.01 crisis probability
- Possibility of “games” by riskier countries insisting on the OECD average and imposing cross border risks on others
- Chosen level of macroprudential capital and liquidity needs to be used as a benchmark for microprudential policies, with riskier banks given a “trigger ratio” adjustment.
- Traditionally these were higher for smaller banks but rebalancing needed for cross section contribution to systemic risks
- Spanish-style dynamic provisioning is not necessary for countercyclical buffers as credit is not significant – and does not even Granger cause property prices in most countries

Interaction with competition policy

- Systemic institutions of concern to macroprudential policy are likely to be “too big to fail” (Haldane 2010) and also may have market dominance.
- Suggests a synergy with competition policy, notably in unwinding some of the mergers that took place under duress in the crisis (UK: Lloyds/HBOS)
- More questionable whether proposals for dividing universal banks have competition policy justification, unless they dominate both commercial and investment banking (and not clear subprime shows model’s weakness – Northern Rock and Lehmans were “specialised”)

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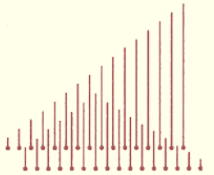

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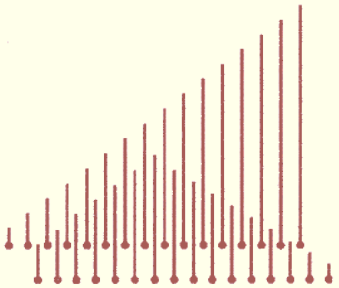
(2) Comments on the papers



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Huw Pill

- High quality analysis of ECB's extraordinary monetary policy in 2008-10
- Insightful in terms of its impact on interest rates and lending – macroprudential and monetary. Unsuprising no quantity effect
- **Wholesale funding -** paper takes dependence of banks on wholesale funding as given – best they are not in vulnerable initial position. Key issue whether microprudential regulation of liquidity sufficient. While it has been tightened, question whether macroprudential also required, penalising high dependence on wholesale, possibly countercyclically (lending regulation insufficient as money funds etc also provide wholesale funding).

- **Interbank spread** similar argument arises with the low level of interbank spreads prior to August 2007 – in most countries virtually same as central bank rate
- Accordingly issue of disaster myopia in macroprudential policy, getting used to a risky position. Key issue is for macroprudential (and monetary policy) to view things from first principles (e.g. whether a zero spread makes sense)

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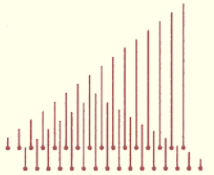
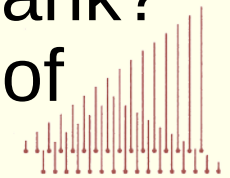


- Further issue of **unwinding** of extraordinary policies. Banks become dependent on CB funding and need incentive to adjust balance sheets away from wholesale funding. Can exit be accomplished without major credit contraction?
- Broader issue of **integrating** central bank liquidity policy and bank regulation. Do money market desks talk to regulators enough? (Northern Rock) How can one gauge the overall stance of macroprudential policy?
- Is the tradeoff limited? How was the liquidity support integrated with **inflation** concerns of central bank? Are there longer term insights into integration of macroprudential and monetary **objectives**?



- **Nature** of ECB's extraordinary measures. Why didn't they buy up government bonds (UK) or also private sector assets (US) as more effective means of reducing long rates and supplying credit directly? (NIESR – lower impact on GDP) Has any counterfactual been done to see if this was more of less effective (o/a financial structure?)
- How different would the outcome have been if **Basel III/countercyclical macroprudential** policies already in place? Conclusion it was a liquidity and not a capital crisis for most Eurozone countries so little difference? (Close study of Spain recommended)

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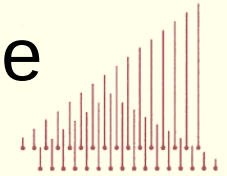
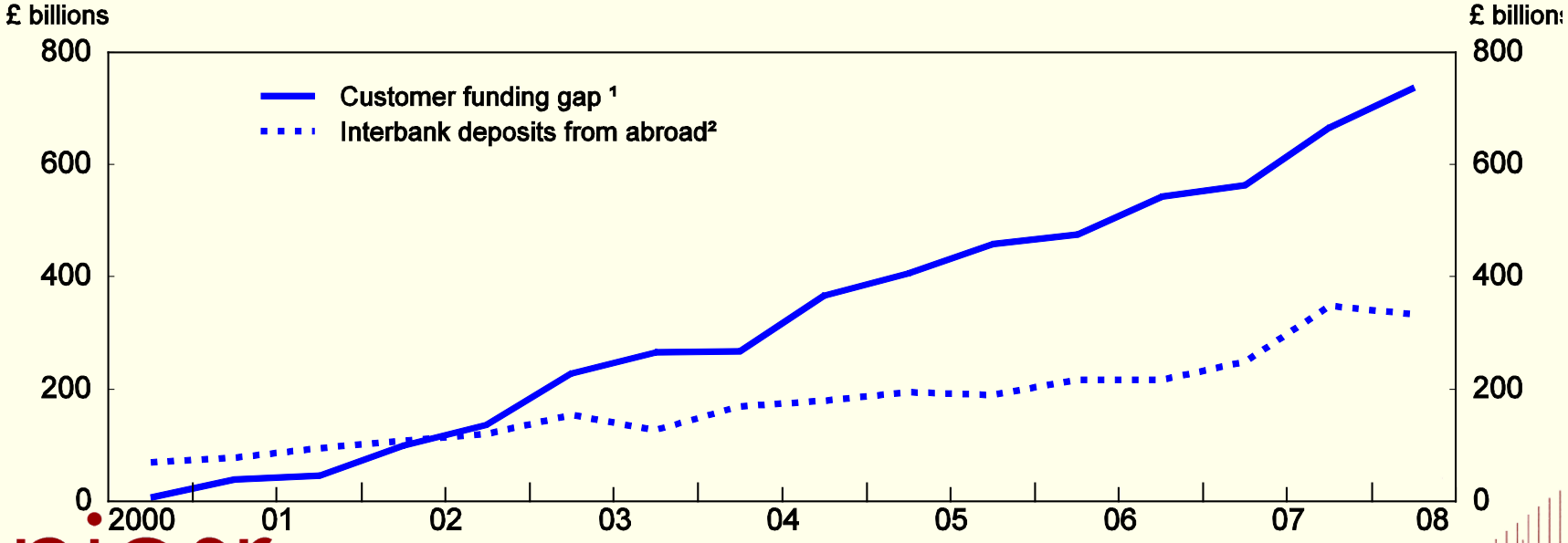


Julia Kiraly

- Good to highlight the needs for coordination of macroprudential policies – helpful contribution to debate
- Local example of Austria and Hungary particularly relevant, but suggest shows need for **product regulation** to complement macroprudential – retail FX loans should have been banned in Hungary given floating exchange rate and uninformed consumers
- Doubtful about **global credit growth based macroprudential policy** (countries with slow growth and no cross border lending penalised, liquidity growth from non banks unaffected) – better in terms of contribution to cross border bank lending growth?

- Paper again raises issue of whether there are sufficient macroprudential levers to control exposure to **(cross border) wholesale funding.** Arguably needs to be viewed at system wide level and not just individual banks. See UK chart below as illustration



- Not clear that **LTV regulation** needs to be fixed – good case for lowering LTVs during periods of house price boom o/a risk of mortgage shortfall being greater, as well as macroprudential risks
- Again, lack of **procyclical policies** in CGFS study due to early stage of adoption rather than
- Case against **common shock in subprime** is the contagious effect of CDOs on banking systems otherwise unaffected (notably in Continental Europe)
- Suggest that our work (further table shown below) could help in definition of a **macroprudential stance** (e.g. using crisis probability as measure)

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- Out of sample rolling probabilities

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BG	0.005	0.003	0.003	0.003	0.006	0.003	0.003	0.008	0.014	0.027	0.033
CN	0.032	0.052	**0.051**	0.026	0.011	0.012	0.014	0.019	0.013	0.015	0.023
DK	0.015	0.038	**0.055**	0.034	0.032	0.015	0.021	0.012	0.016	0.007	**0.044**
FN	0.004	0.005	0.008	0.004	0.000	0.000	0.000	0.001	0.000	0.001	0.002
FR	0.025	0.016	0.010	0.011	0.029	0.018	0.019	0.033	**0.066**	**0.137**	**0.153**
GE	0.026	0.025	0.026	0.041	**0.054**	0.024	0.010	0.012	0.003	0.003	0.002
IT	0.001	0.002	0.002	0.007	0.013	0.013	0.016	0.025	0.018	0.030	0.013
JP	**0.071**	0.023	0.007	0.007	0.005	0.005	0.002	0.001	0.000	0.000	0.001
NL	0.020	0.016	0.042	0.036	**0.122**	**0.096**	**0.047**	0.011	0.005	0.005	0.002
NW	0.011	0.005	0.034	0.010	0.000	0.000	0.001	0.001	0.000	0.000	0.000
SD	0.019	0.014	0.028	0.036	0.025	0.032	0.006	0.001	0.002	0.002	0.002
SP	0.005	0.005	0.008	0.024	0.036	0.034	0.033	**0.062**	**0.217**	**0.493**	**0.675**
UK	0.049	**0.057**	**0.079**	**0.157**	**0.176**	**0.152**	**0.077**	**0.134**	**0.199**	**0.197**	**0.251**
US	0.025	0.029	0.038	**0.062**	**0.064**	**0.046**	**0.070**	0.039	**0.045**	**0.052**	**0.109**
Prob threshold	0.057	0.054	0.050	0.048	0.045	0.043	0.041	0.039	0.037	0.036	0.040

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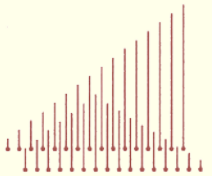
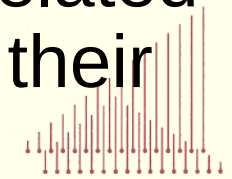


- Stability and growth pact type fiscal rules shouldn't be just used as an example – important **role of fiscal coordination in macroprudential**
- This is due to need for sufficient fiscal flexibility to respond to future banking problems (and not impose costs solely on future generations). Arguably for most countries more important reason for consolidation than risk to long rates.
- Effective fiscal coordination can make a major contribution to this objective
- Proposed EU levy on banks has fiscal as well as macroprudential implications – can relate to related to the "liquidity insurance" banks receive and their contribution to systemic risk.



- Further fiscal interaction links to related estimates of trend growth. Government may mislead population and banks leading to greater risk taking than is warranted by actual economic performance
- And Greek example shows risk of contagion from uncontrolled fiscal policies with cross border lending
- Paper raises question whether **home/host** issues have been sufficiently dealt with in Basel III and related discussions:
  - Countercyclical buffers are clearly “host”
  - Widespread suggestions that host regulation is the way forward (FSA)
  - Austrian/Hungarian case show limitations of current situation

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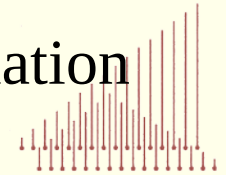

- At NIESR we have made estimates of cross border effects on crisis probabilities based on use of a variable showing the weighted incidence of ongoing crises elsewhere (WYCRISC) using 2005 GDP weights - doesn't distinguish common shock and contagion, but more general than work using lending or asset prices for cross border effects
- Shows major differences in impact of crises and vulnerability cross border (see table)
- Small countries have an incentive to induce large countries to improve their regulatory framework, and large countries have an incentive to co-operate - although the US as a dominant player may require side payments

Induced changes to crisis probabilities

	Country i													
	US	***UK***	***SP***	***SD***	***NW***	***NL***	***JP***	***IT***	***GE***	***FR***	***FN***	***DK***	***CN***	***BG***
BG	5.42	0.40	0.23	0.06	0.04	0.11	0.91	0.33	0.54	0.38	0.03	0.03	0.22	0.00
CN	9.25	0.71	0.42	0.10	0.07	0.19	1.61	0.59	0.95	0.68	0.05	0.06	0.00	0.11
DK	18.39	1.57	0.92	0.22	0.16	0.43	3.52	1.31	2.11	1.51	0.12	0.00	0.88	0.25
FN	3.53	0.26	0.15	0.04	0.03	0.07	0.58	0.21	0.34	0.25	0.00	0.02	0.14	0.04
FR	8.35	0.63	0.37	0.09	0.06	0.17	1.44	0.53	0.85	0.00	0.05	0.05	0.35	0.10
GE	4.98	0.37	0.21	0.05	0.04	0.10	0.83	0.30	0.00	0.35	0.03	0.03	0.20	0.06
IT	1.80	0.13	0.07	0.02	0.01	0.03	0.29	0.00	0.17	0.12	0.01	0.01	0.07	0.02
JP	0.13	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.00
NL	26.86	2.61	1.54	0.37	0.27	0.00	5.75	2.18	3.48	2.51	0.20	0.22	1.47	0.42
NW	15.54	1.28	0.75	0.18	0.00	0.35	2.88	1.07	1.72	1.23	0.10	0.11	0.72	0.20
SD	12.04	0.95	0.56	0.00	0.10	0.26	2.15	0.79	1.28	0.92	0.07	0.08	0.53	0.15
SP	3.59	0.26	0.00	0.04	0.03	0.07	0.59	0.22	0.35	0.25	0.02	0.02	0.14	0.04
UK	13.19	0.00	0.62	0.15	0.11	0.29	2.38	0.88	1.42	1.02	0.08	0.09	0.59	0.17
US	0.00	0.14	0.08	0.02	0.01	0.04	0.31	0.11	0.19	0.13	0.01	0.01	0.08	0.02
Avge	**8.79**	**0.67**	**0.42**	**0.09**	**0.07**	**0.15**	**1.66**	**0.61**	**0.96**	**0.67**	**0.05**	**0.05**	**0.39**	**0.11**

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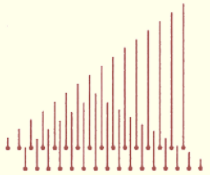

The financial_stability e group

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