

Are there policy alternatives to Ireland's austerity?

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What happened to Ireland?

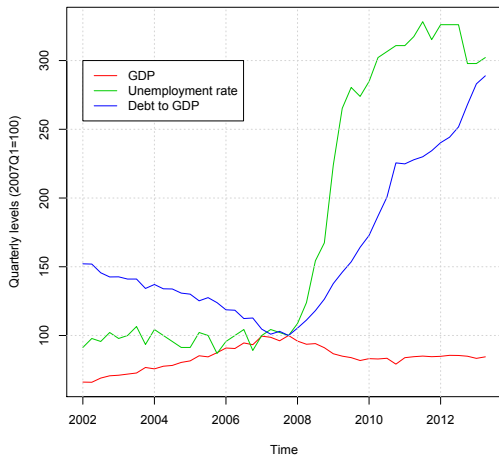


Figure: Levels of Unemployment, GDP, and Debt to GDP. Q1, 2007 = 100. Source: Central Statistics Office.

Domestic Credit Boom/Bust

But while Icelandic males used foreign money to conquer foreign places—trophy companies in Britain, chunks of Scandinavia—the Irish male used foreign money to conquer Ireland. Left alone in a dark room with a pile of money, the Irish decided what they really wanted to do with it was to buy Ireland. From one another.

Michael Lewis, *When Irish Eyes Are Crying*, Vanity Fair, March 2011.

Trade Balance: Austerity's safety valve?

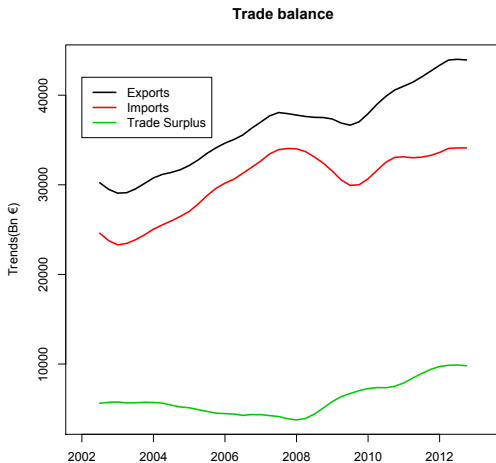


Figure: Trade Balance. Source: Central Statistics Office.

Sectoral Balances. Finely (im)Balanced.



Figure: Sectoral balances for Ireland, 2002Q1-2013Q1. Source: Central bank of Ireland.

Sectoral Balances

A really good way to frame macroeconomic debates.

Deficit spending by the government is merely the counterpart of private sector saving. What government deficit spending does is to permit the private sector to achieve its level of desired saving. When the latter changes, government spending ought to be adjusting in the opposite direction to offset it (unless the current account balance happens to do the job).

(See <http://macrobits.pinetreecapital.com/should-we-tax-excess-corporate-profits/>)

Authorities getting it very, very wrong.

The economic and fiscal outlook over the period 2008 - 2010 is as follows: GDP is forecast to expand at an average rate of 3.5% per annum (GDP by just under 3.5%). The average annual increase in employment is projected to be just under 11.5%, with unemployment assumed to average about 5.5%. (Department of Finance, 2007, pg. A.3)

The point of all this: why?

- ▶ Failure to recognize the importance of capital flows, and intersectoral flows.
- ▶ Inattention to necessary adjustment processes within a fiscal union.
- ▶ Models built using 'representative' agent structure with no real feeling for banking/money/default issues. You can't default on yourself.
- ▶ New model based on Godley & Lavoie's work building sectoral models from balance sheet data.
- ▶ **Enormous** issues around data quality, calibration, and estimation.

Stock Flow Consistent Models. Lovely idea, horrible name.

- ▶ Adding up constraints/quadruple accounting following Copeland (1949), Godley and Cripps (1983), Godley & Lavoie (2006), Zhao & Lavoie (2012).
- ▶ Large models built at sectoral level with several asset classes (Tobin (1982)/Brainard & Tobin (1968)).
- ▶ Dynamic behaviour via influence of past periods (usually but not always via wealth in consumption function).
- ▶ Steady state solution, simulation, policy experiments.
- ▶ Generally post-Keynesian features, effective demand, endogenous money, markup based pricing, procedural rationality, etc.
- ▶ Now calibration using balance sheet data, moving on to estimation of various kinds. OLS Estimation (Kinsella & Tiou Tagba Aliti, 2012), VECM (the Levy Model, Zezza et al 2013 for Greece), VAR-VECM, Reis & Mazier (2013), VAR-SVAR.
- ▶ Limited attempts at empirical calibration so far.

Data/Methods

- ▶ Strategy is: Data \longrightarrow Calibration \longrightarrow OLS \longrightarrow VAR/SVAR.
- ▶ Data from Irish flow of funds, NIPA and market sources for financial prices of bonds, etc.
- ▶ Ireland's treatment of NFC foreign holdings very significant here, care required to treat these data appropriately.
- ▶ $N = 42$, small(ish) sample of relatively noisy data of a small open economy experiencing a macroeconomic heart attack halfway through the sample.
- ▶ Generalisation of findings therefore rather difficult.

Model. Really sorry about the size!

Sectors	NFC	FC	Govt	HH	ROW
Flows	GDP, I, NX, C, W, T_G^N , P^N , P_N^N	P^F , P_F^F	G, T, P_F^G	C, T_G^H , Y_d , P_H^N	CAB
Instruments	Deposits	-	-	-	-
	-	-	Securities	-	Securities
	Equities	Equities	-	-	-
	-	Loans	Loans	-	-

Calibration

- ▶ Not a simple task.
- ▶ 'Pure' calibration allows the modeller to calibrate/simulate a theoretical model with values having constraints that generate consistent ratios.
- ▶ Essentially relies on finding long run 'stock flow norms' on which one can hang a model. Parameter discovery no joke, especially for the Irish economy. How to define norms for a public debt ratio that jumped from 25% in 2007 to 2010 and 121% in 2012?
- ▶ Approach: Allow parameter values to change, but constrain them via the balance sheet. The model structure is under strong constraint to fit empirical norms.
- ▶ BUT the results are therefore proportional to the empirical calibration values. Choice of reference period very important.

How to read the calibration results.

We impose *More* austerity on the Irish economy from the outset, pushing for an ECB-type solution.

- ▶ Table shows effects of changes in taxes and spending on important variables relative to the steady state value (Q4 2007).
- ▶ We see the change in disposable income as a percentage of GDP, calculated in period changes as: $(Y_{d,t} - Y_{d,0})/GDP_{t-1}$ and change in taxes as a percentage of GDP, $(T_t^H - T_0^H)/GDP$.
- ▶ We express each statistic as a percentage. We calculate the effects 3 period from the shock, 13 periods from the shock, and 23 periods from the shock, on both taxes and spending.
- ▶ So, for example, at T+3, with a small spending shock, the change in disposable income as a percentage of GDP declines by 0.73% relative to the steady state.

An austerity shock: Results

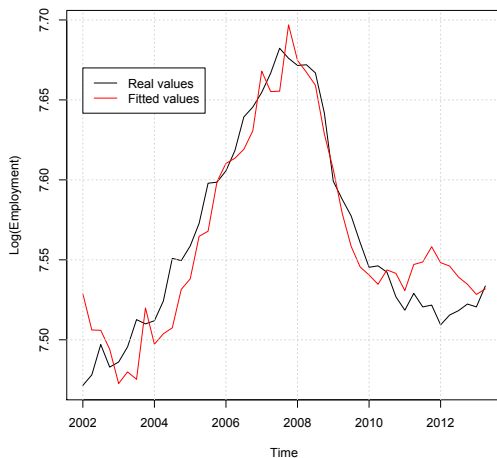
Impact:	Y_d/GDP						C^H/GDP
Shock	Spending			Tax rate			Spending
Time	T+3	T+13	T+23	T+3	T+13	T+23	T+3
10% Less	-0.73	-1.07	-1.45	1.62	1.86	2.12	-0.45
20% Less	-0.84	-1.24	-1.68	0.81	0.92	1.05	-0.52
Base	-0.95	-1.4	-1.91	-	-	-	-0.59
10% More	-1.07	-1.57	-2.14	-0.8	-0.91	-1.03	-0.66
20% More	-1.18	-1.75	-2.38	-1.59	-1.81	-2.04	-0.73
Impact:	T^H/GDP						ΔGDP
Shock	Spending			Tax rate			Spending
Time	T+3	T+13	T+23	T+3	T+13	T+23	T+3
10% Less	-0.27	-0.4	-0.56	-0.96	-0.86	-0.75	-4.01
20% Less	-0.31	-0.47	-0.65	-0.48	-0.43	-0.37	-4.59
Base	-0.35	-0.53	-0.74	-	-	-	-5.19
10% More	-0.39	-0.6	-0.83	0.47	0.42	0.36	-5.78
20% More	-0.43	-0.66	-0.92	0.94	0.83	0.72	-6.37

That's Grand. So what?

- ▶ A smaller adjustment in government spending, coupled with an increase in taxes (the inverse of the celebrated $2/3$ G, $1/3$ T finding by Alesina et al, 2013, the design of fiscal adjustments).
- ▶ For Ireland the adjustment should have taken place through taxes first, and then through slower decreases in government spending.
- ▶ The model also indicates capital taxes would have not been as effective as taxes on income in closing deficit gap. The determinants of tax revenues are mostly direct taxes like income tax and indirect taxes like VAT.
- ▶ There were policy alternatives to Ireland's austerity.

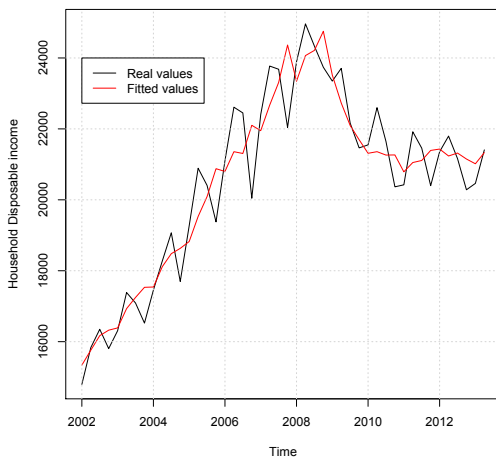
Estimations: Employment

$$\text{Employment} = -4.9 + 0.9(\text{GDP}_{t-1})^{***} + 0.3(\text{RealWage})^{***} - 0.06(\text{Time})^{**}$$



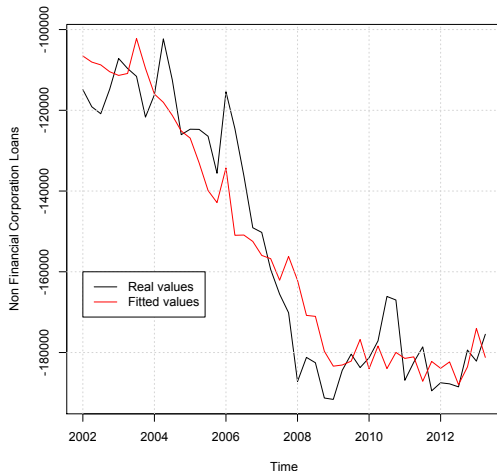
Household disposable income

$$HHGDI = 4389 + 0.544(NominalWages)^{***} - 0.44(Taxes)^{***}$$



Financial Corporation Loans

$$FCL = -83 + -0.5(FC)^{***} + 0.2(Securities)^{***} + 0.5(GGloans)^{***} - 0.2(GGS)$$



Financial corporation holdings:

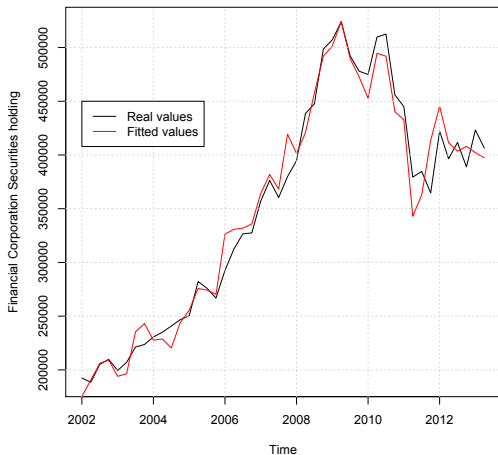


Figure: Financial corporate securities holdings in the Irish economy, real and estimated values.

Further work

Any SFC system can be written as an SVAR:

$$\mathbf{B}\mathbf{X}_t = \sum_{i=0}^n \mathbf{A}\mathbf{X}_{t-i},$$

Where the SFC part gives the theory one should apply to the A and B matrices. Variables in a SVAR model can have contemporaneous impact on other variables, which is perfect to describe relationships in a SFC model. They are very computationally intensive however.