

DISSERTATION ABSTRACTS

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1. WHAT HAS FUNDED GOVERNMENT DEBT? (WITH ERIC LEEPER)

Equilibrium models imply that the real value of debt in the hands of the public must equal the expected present-value of surpluses. Empirical models of fiscal policy typically do not impose this condition and often do not even include debt. Absence of debt from empirical models can produce non-invertible representations, obscuring the true present-value relation, even if it holds in the data. First, we show that small VAR models of fiscal policy may not be invertible and that expanding the information set to include government debt has quantitatively important implications. Then we impose the present-value condition on an identified VAR and characterize the way in which the present-value support of debt varies across types of fiscal shocks. The role of expected primary surpluses in supporting innovations to debt depends on the nature of the shock. Debt is supported almost entirely by changes in the present-value of surpluses for some fiscal shocks, but for other fiscal shocks surpluses fail to adjust and instead leave a large role for expected changes in discount rates. Horizons over which debt innovations are financed are long – on the order of 50 years.

2. ESTIMATING DYNAMIC CROSS-SECTIONAL EFFECTS OF IDENTIFIED MACROECONOMIC SHOCKS (JOB MARKET PAPER)

This paper bridges a gap between micro-econometric studies of income and wealth dynamics based on cross-sectional or panel data and the dominant approach in macro-econometrics based on vector autoregressions of aggregate data. I derive an approximation to the underlying non-linear dynamical system in which the cross-section is flexibly and efficiently characterized by a (relatively) small number of parameters, evolving linearly as a function of an associated dynamic factor model. The framework readily accommodates multidimensional distributions and estimation of transition densities, given suitable data.

Given an identification scheme for shocks in the factor model, it is possible to describe the reaction of the entire joint distribution of agent types. Using data from the IRS Statistics of Income, I describe the response of income and tax liability distributions to a fiscal policy shock identified following Blanchard and Perotti ([2]). Results indicate that the stochastic dimensionality of the income and tax liability distribution is relatively high and that the reaction of agents to the fiscal policy shock exhibits substantial heterogeneity.

3. A PERTURBATIVE APPROACH TO SOLVING AND ESTIMATING GENERAL EQUILIBRIUM MODELS WITH INCOMPLETE MARKETS

Research on general equilibrium models with incomplete markets and non-degenerate wealth distributions is ultimately constrained by the rapid growth of the state space. Under these circumstances, perturbative solution approaches seem natural and have been investigated by, among others, Preston and Roca ([3]) and Reiter ([4]). In this paper, I extend Reiter's perturbative characterization of an equilibrium in the neighborhood of an associated stationary distribution to allow for more flexible and efficient representations of the joint distribution of agent states. Having derived a first-order solution in this limit, I show that it is possible to use the empirical results from my paper "Estimating Dynamic Cross-Sectional Effects of Identified Macroeconomic Shocks" to estimate the parameters of the model using a nested fixed point algorithm similar to Aguirregabiria and Mira ([1]).

REFERENCES

- [1] "Sequential Estimation of Dynamic Discrete Games" Victor Aguirregabiria and P. Mira *Econometrica*, 75(1), 2007
- [2] Olivier Blanchard and Roberto Perotti "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output" *QJE* 2002
- [3] Bruce Preston and Mauro Roca Columbia University, October 2005.
- [4] Michael Reiter, "Solving Heterogeneous Agent Models by Projection and Perturbation" Universitat Pompeu Fabra, September 2006