Discussion of Christiano, Motto and Rostagno "Financial Factors in Business Cycles"

Matteo Iacoviello
Boston College

DSGE Conference, Bank of Italy, June 23, 2008

1 What Does the Paper Do?

Broad Questions

- Do financial shocks contribute to business fluctuations?
- Do financial factors propagate macroeconomic shocks?
- Should policy respond to financial market shocks?

Medium-scale new Keynesian model with:

- Banking sector as in Chari-Christiano-Eichenbaum (1995)
- Entrepreneurial Financing Frictions as in BGG (1999)
- Lending contracts denominated in nominal terms
- Working capital requirement

  Other stuff: oil, M aggregates, 10-year spread, L-K-C taxes

  15 shocks

2 The Emphasized Findings (1)

- Financial frictions amplify demand shocks, stabilize supply shocks (distributional effects and debt-deflation channel)

- A financial shock (shock to the demand for capital, moves P^K and Q^K together) plays an important role in driving macroeconomic variables

- Reacting to the stockmarket stabilizes economic activity

3 The Emphasized Findings (2)

Given:

- Positive comovement between I and P_K (**Shocks to the entrepreneurial survival probability γ)**

- Countercyclicality of External finance premium (**BGG)**

- Procyclicality of Credit and equity (**Expectations channel and a fractional banking system)**

- Association between M3 and the finance premium (**riskiness shock** σ)

CMR have enough shocks and variables and frictions to explain everything is in the data

4 So, what's in this paper?

You get 4 papers for the price of one (and for the length of 4)

- An estimated model for the Euro area (with EA features)
- An estimated model for the US
- An empirical analysis of the debt deflation
- A policy analysis of what to do in presence of financial frictions

5 The end result?

- A dense and entertaining paper

- However, a paper that is (still) written for the authors, not for the readers

6 Model setup

1. Households (supply L)

2. Firms (produce goods)

3. Capital Producers (CP, produce new K)

4. Entrepreneurs (purchase K from CP - through internal funds and loans -, transform K into ωK, rent it to firms, sell it back to CP; some E pay back, some don't, get monitored, as in BGG)

   E survival probability γ_t is time-varying (bubble interpretation)

5. Banks (produce transaction services)

7 Estimation

- 55 estimated parameters of which:

  15 measurement errors

  29 shock parameters

  4 monetary policy parameters

  7 wage, price rigidity and capital utilization

- Whatever happened to the estimation of all the "financial factors" having to do with the model? Used to pin down the steady state...

8 Properties of Estimated Model

1. Debt-deflation plays big part in transmission mechanism, amplifying demand shocks, stabilizing "supply" shocks

2. Increase in γ_t : more entrepreneurs enter the economy, capital demand and asset prices rise, could be deregulation of financial market...

   Could be positively related to average life of a firm? Gross entry?

   Two investment shocks don't do the trick....

   1) GHH style investment shock μ_Y

   2) Shock to the marginal efficiency of investment $\zeta_{i,t}$

   The γ shock does... shifts the black box from the investment shock μ_Y to the γ shock.

9 Simplify, simplify, simplify....

Two examples of unnecessary objects?

- The σ_N (term premium shock) shock only affects the long term interest rate, and no other variable in the model

- The σ_t (entrepreneurial riskiness shock) explains lion's share of the risk premium and predicts the right movements in M3, and little of the other variables

10 Try to convince the reader more effectively

- At some point, the paper is all about the incredible properties of the γ shock...

  "The CMR model can generate the correct co-movement between investment and the price of capital by adding one observable variable (a stock market index, proxying for the price of capital) and one shock. This shock, which we denominate the financial wealth shock, introduces an autonomous source of variation in the valuation of investors' net worth."

- Use indirect evidence that maps γ_t (or doesn't) to some other observables

  e.g. is γ_t purely exogenous? Can some financial variables forecast it?

11 Back to the questions

- Do financial shocks contribute to business fluctuations?

  Yes for the γ_t shock, little for money and banking shocks

  Especially true for US in the current decade

- Do financial factors propagate macroeconomic shocks?

  Apparently debt deflation is answer here

- Should policy respond to financial market shocks?

  Reacting to the stockmarket stabilizes economic activity

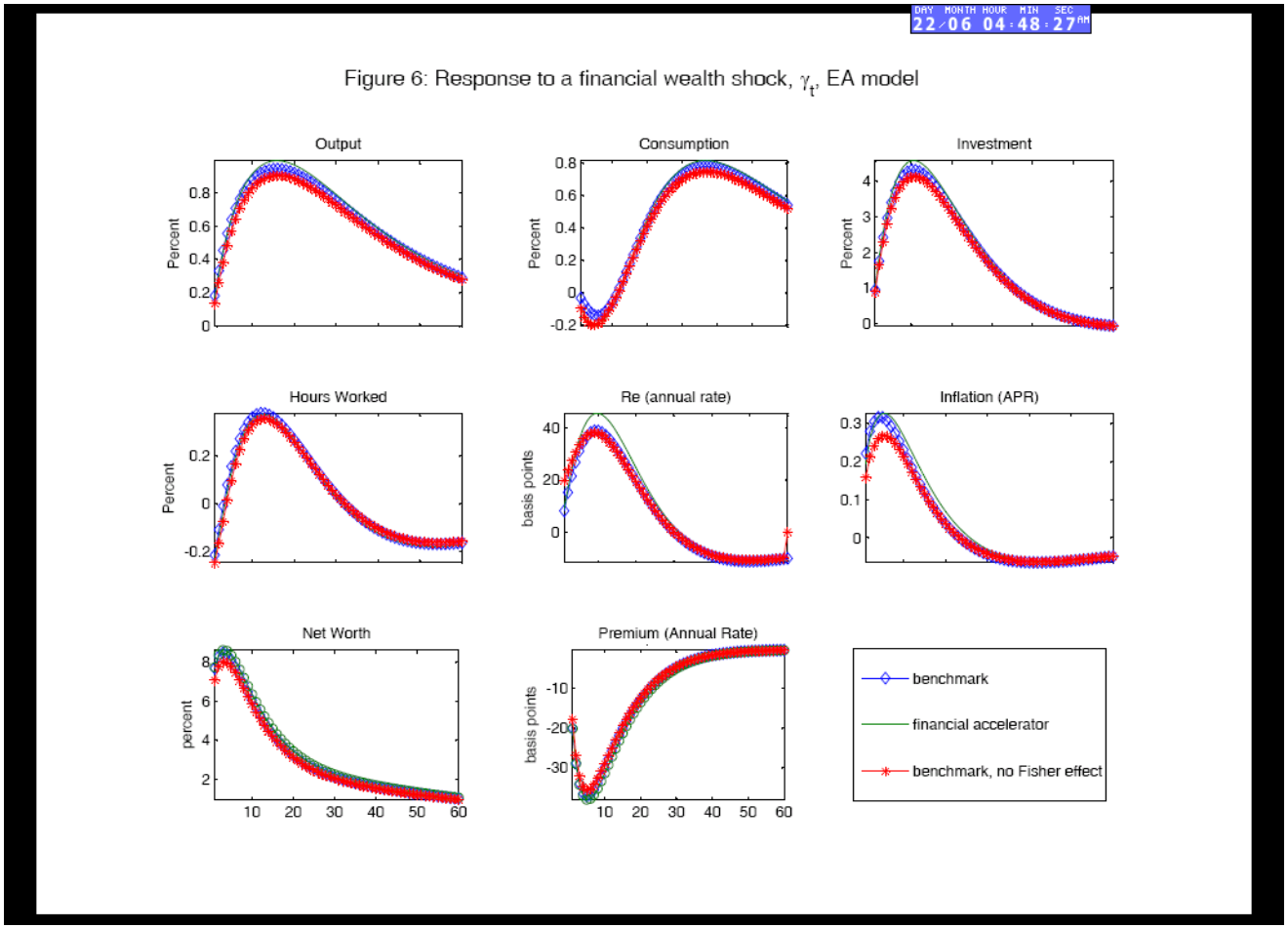

Figure 6: Response to a financial wealth shock, γ_t, EA model

12 Some Issues

1. Entrepreneurial net worth is measured with the Dow

   The model variable is the price of capital

   Not sure if the Dow is the best proxy for wealth of credit-constrained entrepreneurs

   Quantitatively paper makes a big deal of the response of investment and output to Dow shocks...

2. How to interpret the γ_t shock

   Multiple interpreatations in the paper

   (a) for the 2001 expansion, it works like a bubble

(b) for the 1990 recession, it becomes a proxy for time-varying credit conditions of the entrepreneurial sector

3. What role do banks play?

   Banks produce transaction services

   Not clear what effect the bank production function has for the provision of liquidity to entrepreneurs

   A technology shock to the bank production function has not major effect on the economy (like a MS shock in a MIU model)

   Given the paper emphasis on storytelling, there is no aspect of the recent credit crunch that the model seems to capture

13 Conclusions

- Shocks to investment demand appear important drivers of business fluctuations

  I believe this is an important finding

  Quite important since price and quantity of capital are necessary to uncover this shock

- Probably this result will survive removing from the model too many unnecessary elements that are present for now