

Discussion on “*Monetary Policy and the Equity Premium*”.

Workshop on Monetary Policy

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- What is the link between monetary policy and changes in risk premia?
- Objective of the paper: provide a theoretical framework in which monetary policy generates an endogenous movements in risk.
- Why is it interesting? Is there a role for monetary policy in explaining asset prices facts? Is there a two-way interaction?

Main results:

- Transmission mechanism of monetary policy shocks into equity returns and equity premium.

Models match Bernanke and Kuttner's (2005) evidence: following a monetary easing stock prices rises and equity premium decreases.

- Match size of equity premium and the risk-free rate even in a model CRRA preferences

Brief Summary

Structure of the model:

Household behaviour: access to goods and assets market is segmented; agents need to pay a constant fixed cost to transfer funds. Cost varies across households.

Model of endogenous rebalancing. (three types of agents)

Consumption behaviour is characterized as:

$$c_t = \frac{w_{t-1}}{\pi_t} + x_t(\gamma)z_t(\gamma) + A(\gamma)$$

Firms and Government: standard assumptions and monetary policy is modelled through money growth rule.

Equilibrium: consumption choices and fraction of agents that rebalance every period and then compute equity returns and equity premium.

Note that in these models the relevant stochastic discount factor is the one of the rebalancers.

Brief Summary

Mechanism behind results:

Focus on a simpler version of the model: constant annuity across households and uniform distribution.

Equilibrium is characterized by the following two equations system:

$$\frac{\gamma}{\gamma_u} c^A + \left(1 - \frac{\gamma}{\gamma_u} \right) c^I = y - \frac{\gamma^2}{2\gamma_u}$$
$$\left(c^A \right)^{1-\frac{1}{\sigma}} - \left(c^I \right)^{1-\frac{1}{\sigma}} = \left(c^A \right)^{-\frac{1}{\sigma}} \left(c^A - \frac{w}{\mu} - A + \gamma \right)$$

Determination of the fraction of agents that rebalance and consumption of active agents.

Effects on equity premium:

Direct effect coming from fixed costs

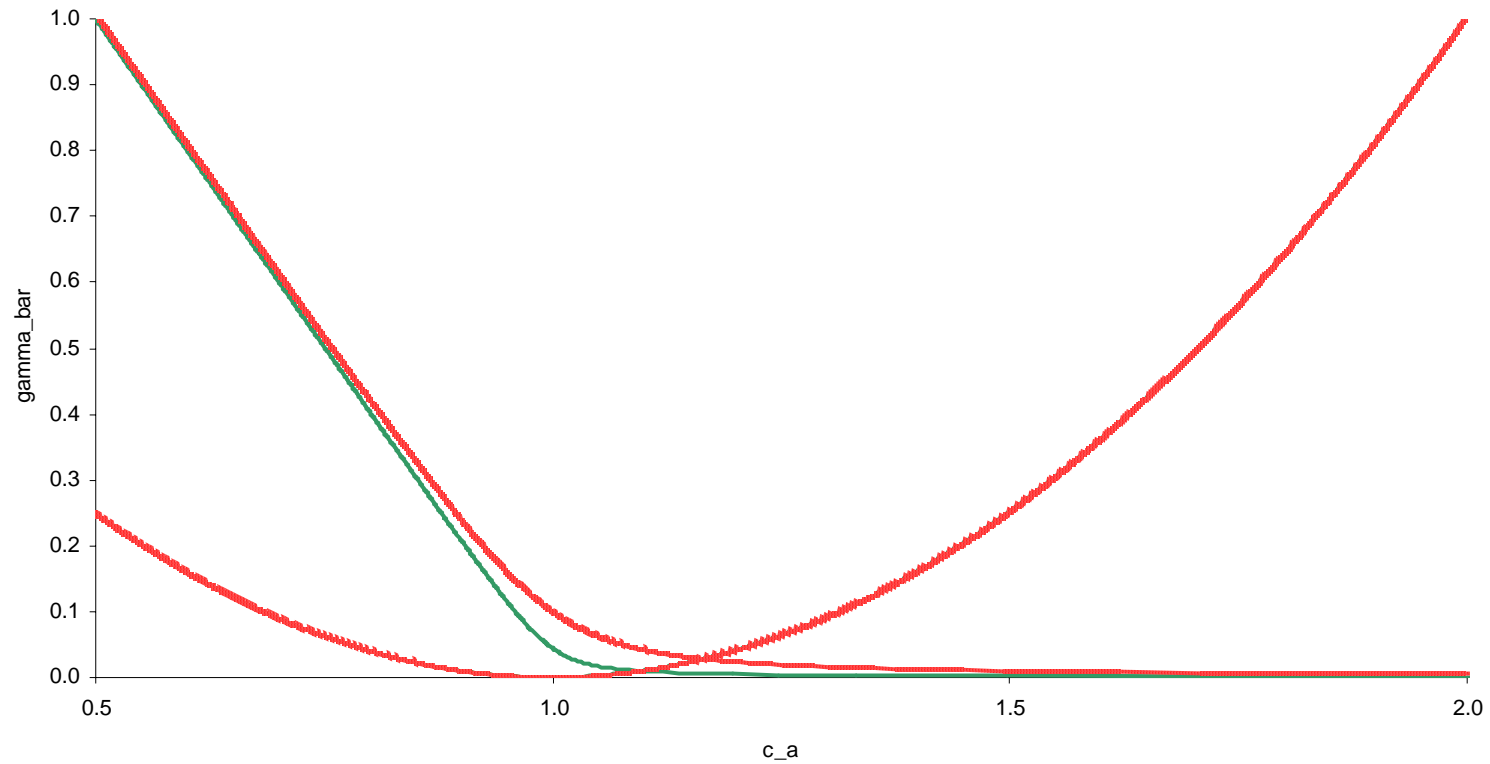
Indirect effect coming from rebalancing. Rebalancing increases the volatility of active agents' consumption; active household consumption is more volatile.

Two key elements:

Timing on cash in advance constraint;

Rebalancing costs

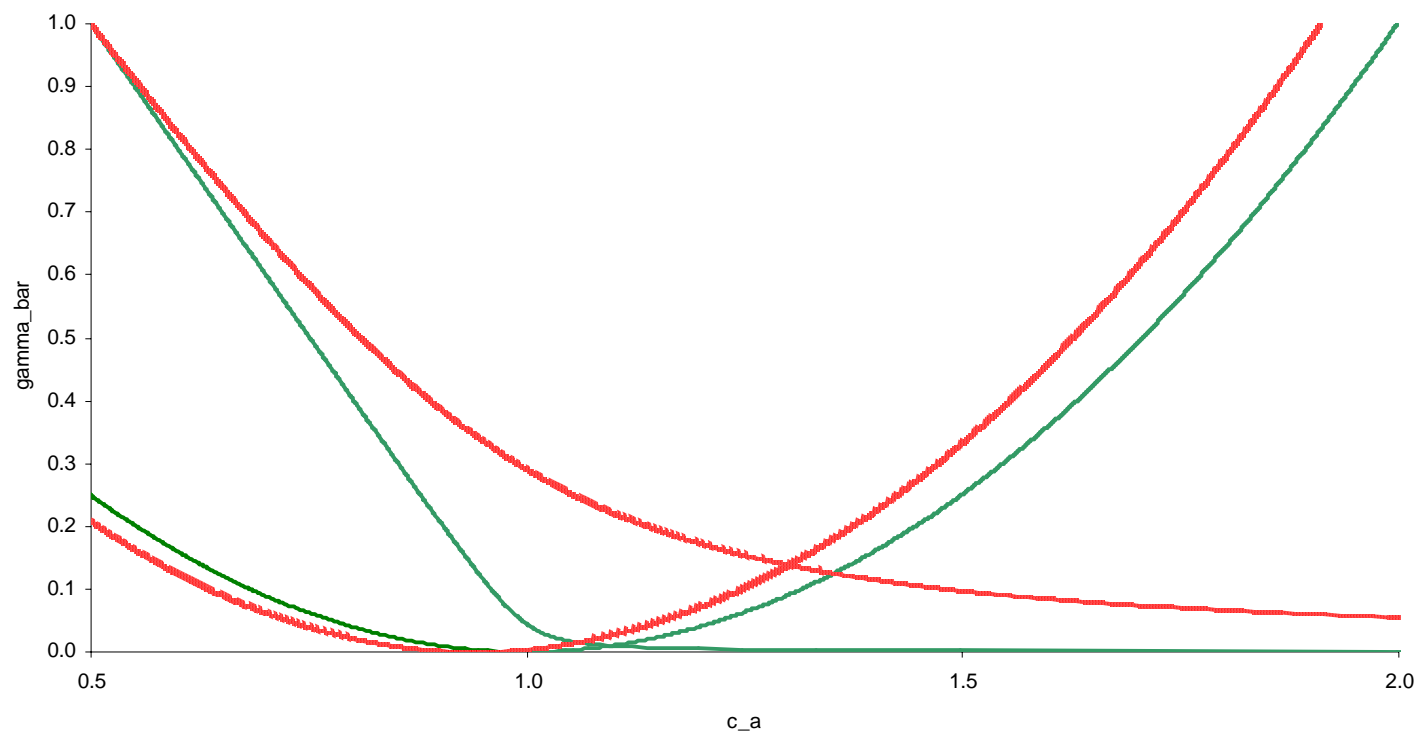
Effect of an average increase in the rebalancing cost



Higher rebalancing costs will reduce the fraction of active agents.

Effect of an increase in the growth rate of money

Higher money growth increase the rebalancers.



Implications of the model

Calibration: critical to model average rebalancing agents.

In the model, decreasing the average fraction of rebalancers produces a rise in risk premium; (direct effect)

Indirect effects depends on initial level of consumption of rebalancers relative to ones of non-rebalancers.

How we choose average fraction of rebalancers and relative consumption seems important for quantitative message of the model

Consumption of rebalancing is more volatile than consumption of inactive agents

Biliass, Georgarakos and Haliassos (2008)

- About 70% to 80% of households don't rebalance in a periods of 5 years.

In the Gust/Lopez-Salido model, 85% of households don't rebalance in a "quarter". But this implies that, that over 5 year periods a lot less than 85% of households are inactive in the model (a household inactive in one quarter may become active in the next; over 5 years).

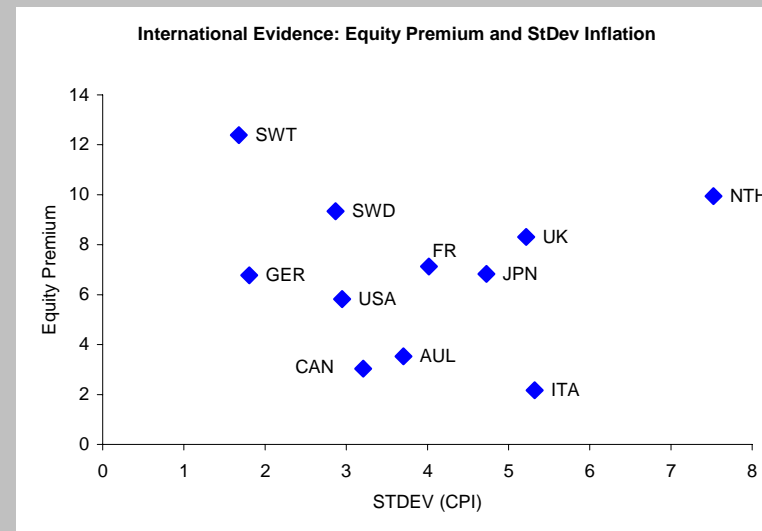
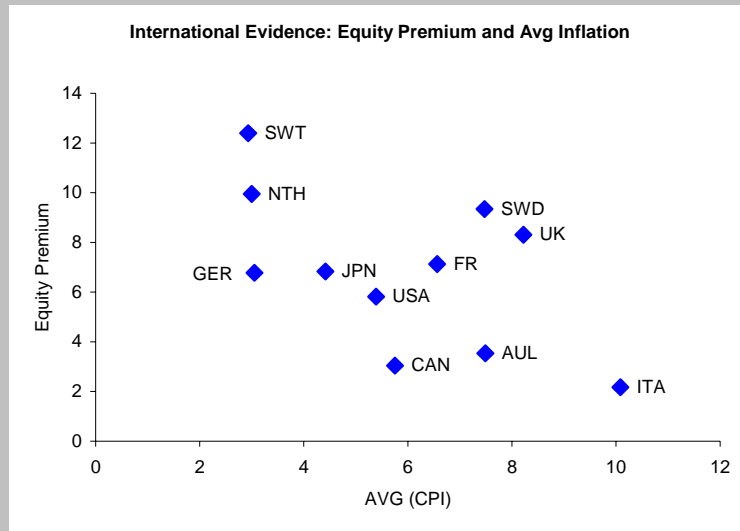
In this sense, I think the model may exaggerate the number of rebalancing and this is crucial for generating the equity premium.

Relative high rebalancing is accompanied by small gap between consumption of active and non-active agents in order to obtain volatility effects.

Indirect test of the model:

What are the implications of the model once we look at it over time and across countries? Empirical evidence on the equity premium

Cross Country Evidence on Inflation Performance and Equity Premium



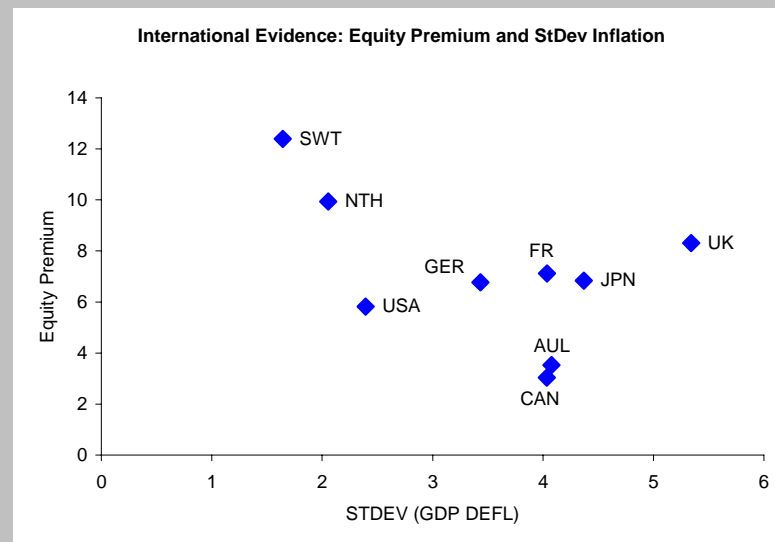
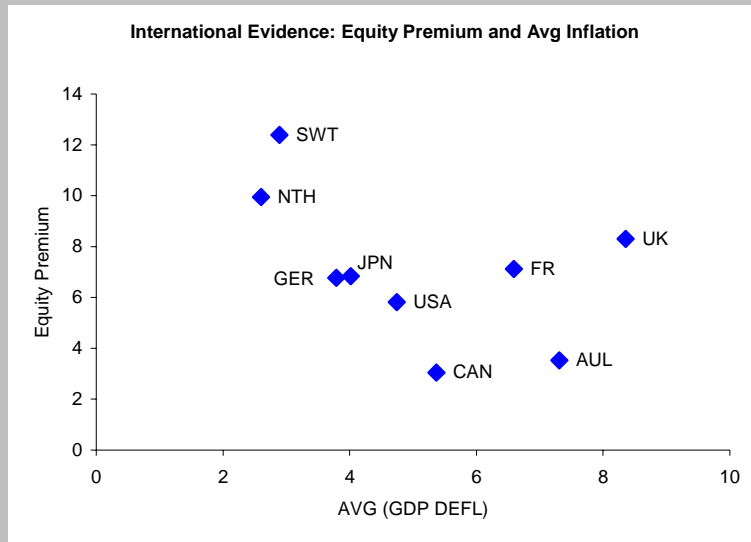
Abbreviations:

AUL	Australia
CAN	Canada
FR	France
GER	Germany
ITA	Italy
JPN	Japan
NTH	Netherlands
SWD	Sweden
SWT	Switzerland
UK	United Kingdom
USA	United States

Data Sources:

Equity Premium	---	Campbell (1999) - Handbook of Macroeconomics
Inflation	---	IFS data (IMF)

Cross-Country Evidence on Inflation Performance and Equity Premium (GDP deflator)



The Equity Premium over time (U.S. evidence)

Chart 5 Differences Between Yields on Stocks and Bonds
Yield on Each Stock Portfolio* Less Yield on Long-Term Bond



Sources: Ibbotson Associates 2000;
Center for Research in Security Prices,
Graduate School of Business,
University of Chicago; FR Board,
various dates; U.S. Commerce,
various dates

*For definitions of the stock portfolios, see Charts 1-2.

Conclusions

- Interesting model for explaining the link between monetary policy and time-varying risk.
- Critical interaction between rebalancing agents (frequency of rebalancing) and monetary policy. Calibration of average rebalancing costs and gap between active and inactive consumption seems crucial.
- Model of rebalancing costs or monetary policy for explaining the equity premium?