Discussion of "Why do non linear model provide poor macroeconomic forecasts?"

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Frankfurt, ECB May 2012

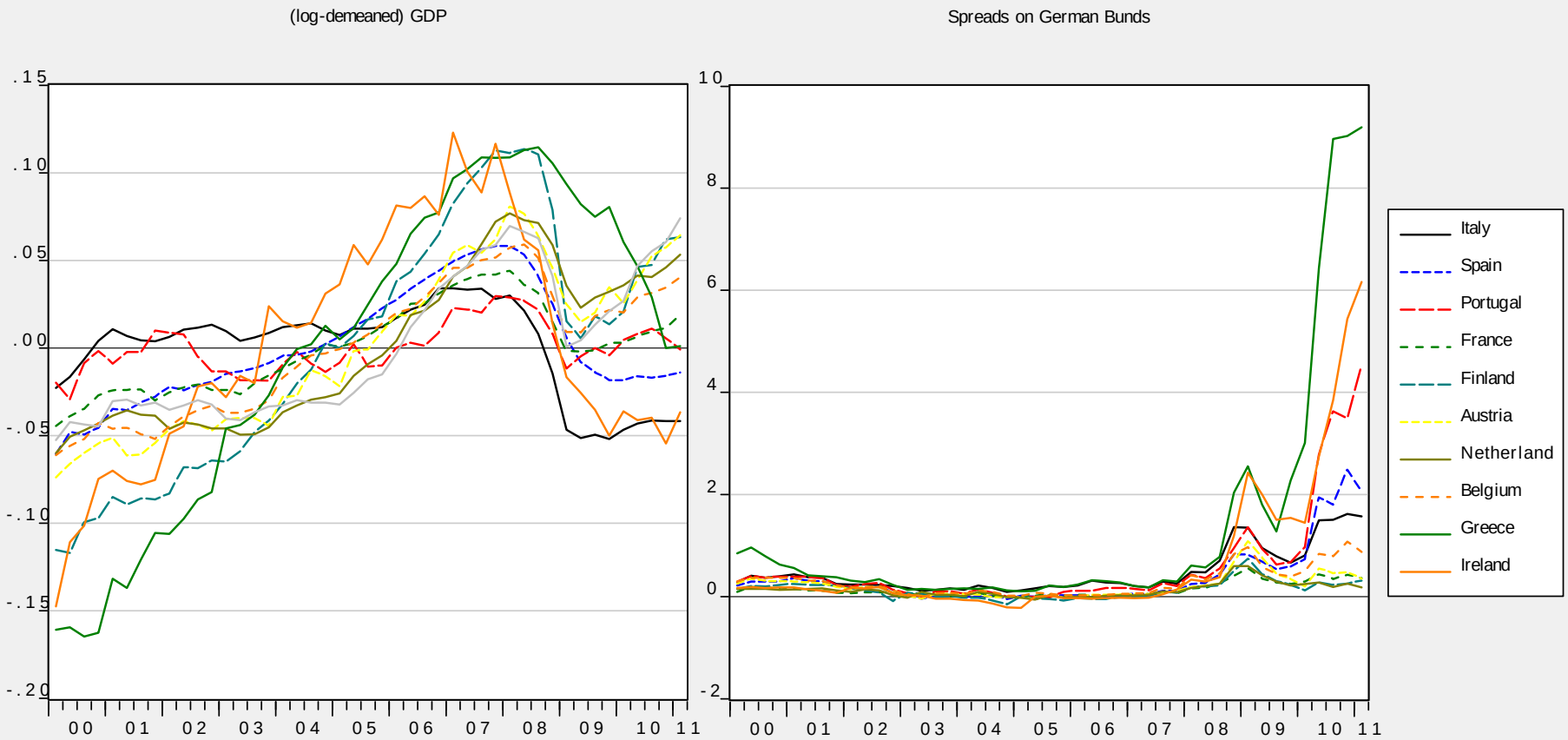
Introduction

- This paper starts from the observation that macro theory (DSGE) predicts non linear relationships, but empirical macro is linear
- to investigate the size of the returns to non-linearity in an univariate framework
- Conclusions: most of the series are identified as non-linear by tests, however non-linear models do not outperform linear benchmark, gains from non-linearity are small while losses are large

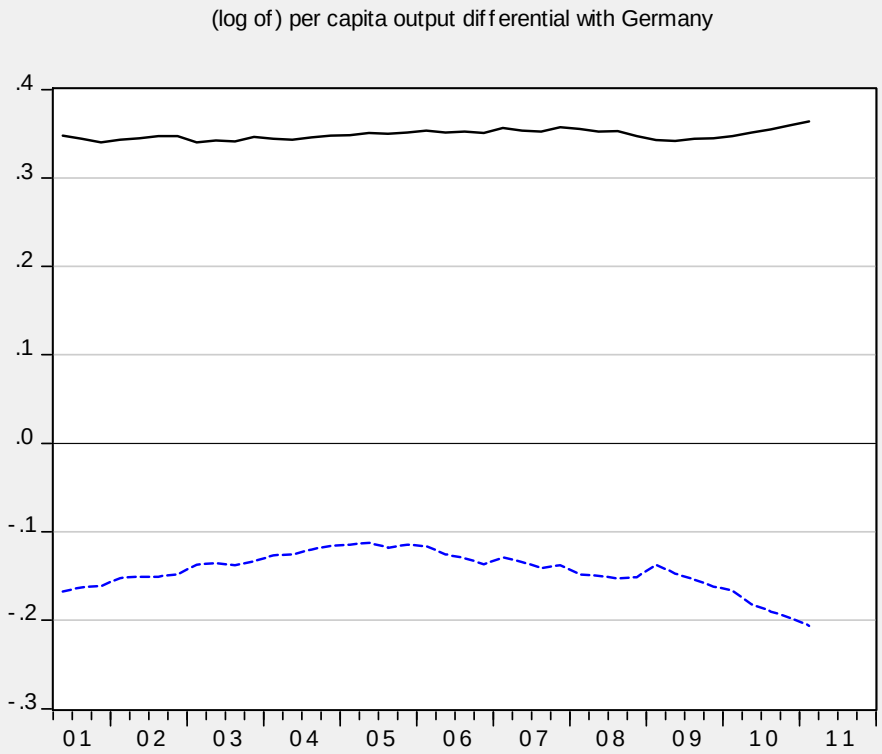
Main Points

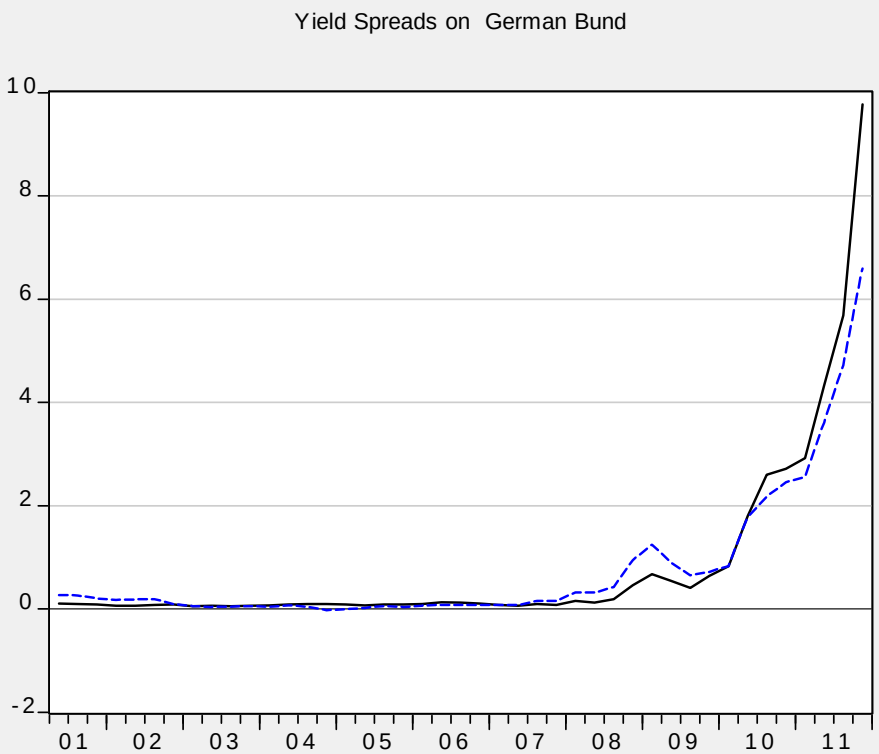
- gains from non-linearity could emerge in a multivariate context, when financial and real variables are jointly modelled
- non-linearity in financial variables should be function of the horizon at which returns are defined
- Non-linearity could be exploited for DSGE model evaluation
- Which Model Evaluation ?

The different co-movement between financial and real variables



The different co-movement between financial and real variables





Cross Sectional dispersion
Cross Sectional mean

On the different nature of returns at different frequencies

- high frequency returns are dominated by noise, (conditional) first moments of their distribution are unpredictable while higher moments are. The main source of non-linearity among them are probably interdependence and contagion. (Multivariate GARCH or Stochastic Volatility Models)
- low frequency returns are much more related to information than high frequecy returns, they are predictable and moments higher than the first ones are rather stable over time. The main- source of non-linearity is in their co-movement.

DSGE Model evaluation

- DSGE model evaluation has been conducted using a VAR as a benchmark: the DSGE-VAR tradition.
- Is the VAR the correct benchmark when the original model is non linear ?
- How do linearized DSGE-VAR perform against a non-linear benchmark ?

Which Model evaluation ?

- Models can be wrong for many reasons
- Being wrong because of not predicting shocks is very different from being wrong for not gettng the transmission mechanism right
- The importance of non-linearities should emerge when we investigate how models perform conditional on shocks