



EUROPEAN CENTRAL BANK

EUROSYSTEM

Alberto Musso
European Central Bank

**Discussion of
“Uncertainty and Economic Activity:
a multi-country perspective”
by A. Cesa-Bianchi, M. H. Pesaran
and A. Rebucci**

*2nd Annual CEBRA International Finance and Macroeconomics Meeting “Risk,
Volatility and Central Bank’s policies”, Banco de España and CEBRA*

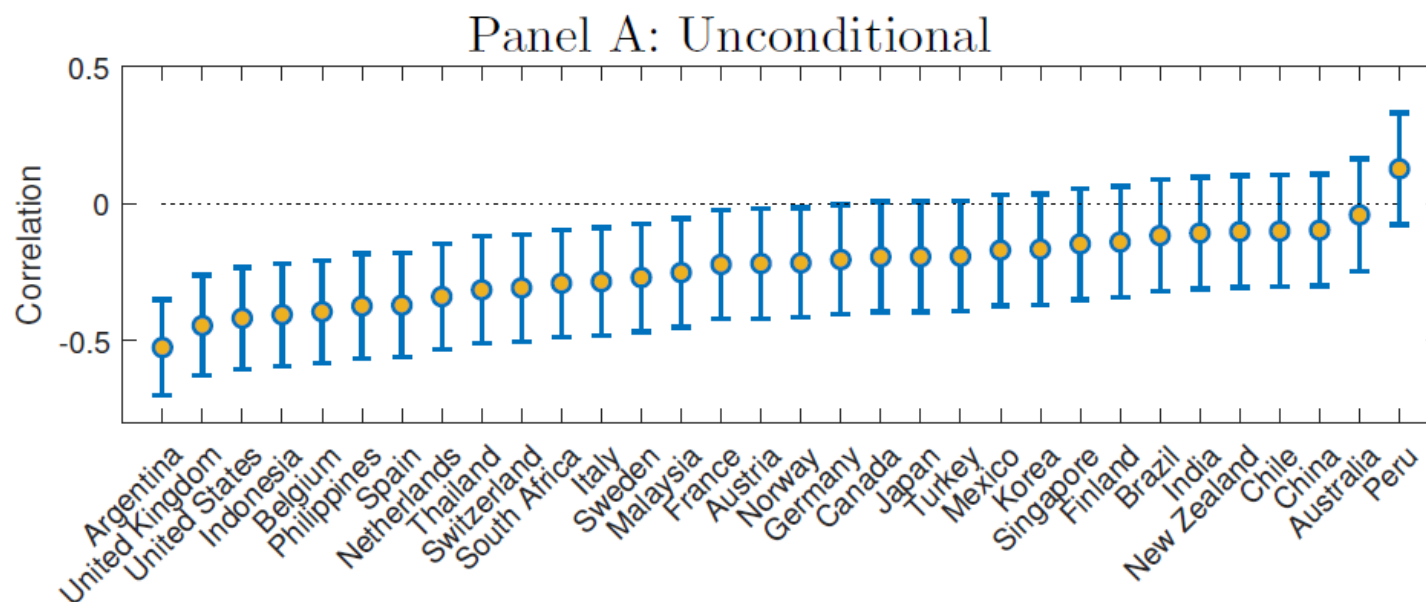
Madrid, 30 November 2018

*The views expressed in this presentation are those of author and do not necessarily reflect
the views of the European Central Bank or its staff.*

Summary of the paper: QUESTION

- Question addressed: What are the sources of the negative correlation between uncertainty (realized stock market volatility) and real GDP growth that can be observed for several countries?

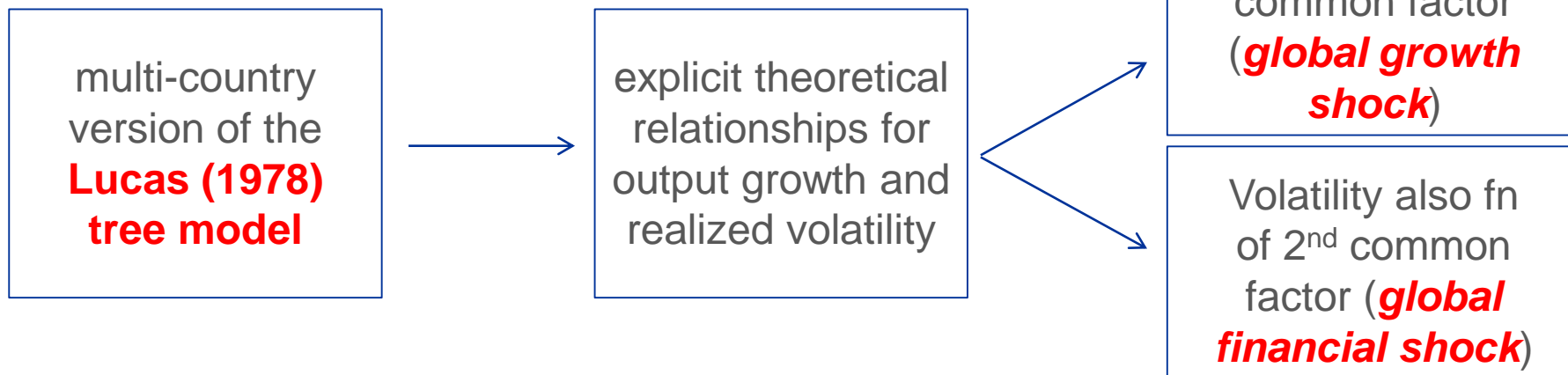
Figure 2 COUNTRY-SPECIFIC CORRELATIONS BETWEEN VOLATILITY AND GROWTH INNOVATIONS



NOTE. Panel A displays the unconditional correlations between (log) realized stock market volatility and real GDP growth. The dots represent the contemporaneous correlations. The lines represent 95-percent confidence intervals. Sample period: 1993:Q1-2016:Q4.

Summary of the paper: APPROACH

➤ Theoretical framework



- **Measure of volatility:** realized volatility of equity returns computed from squares of daily returns within a quarter

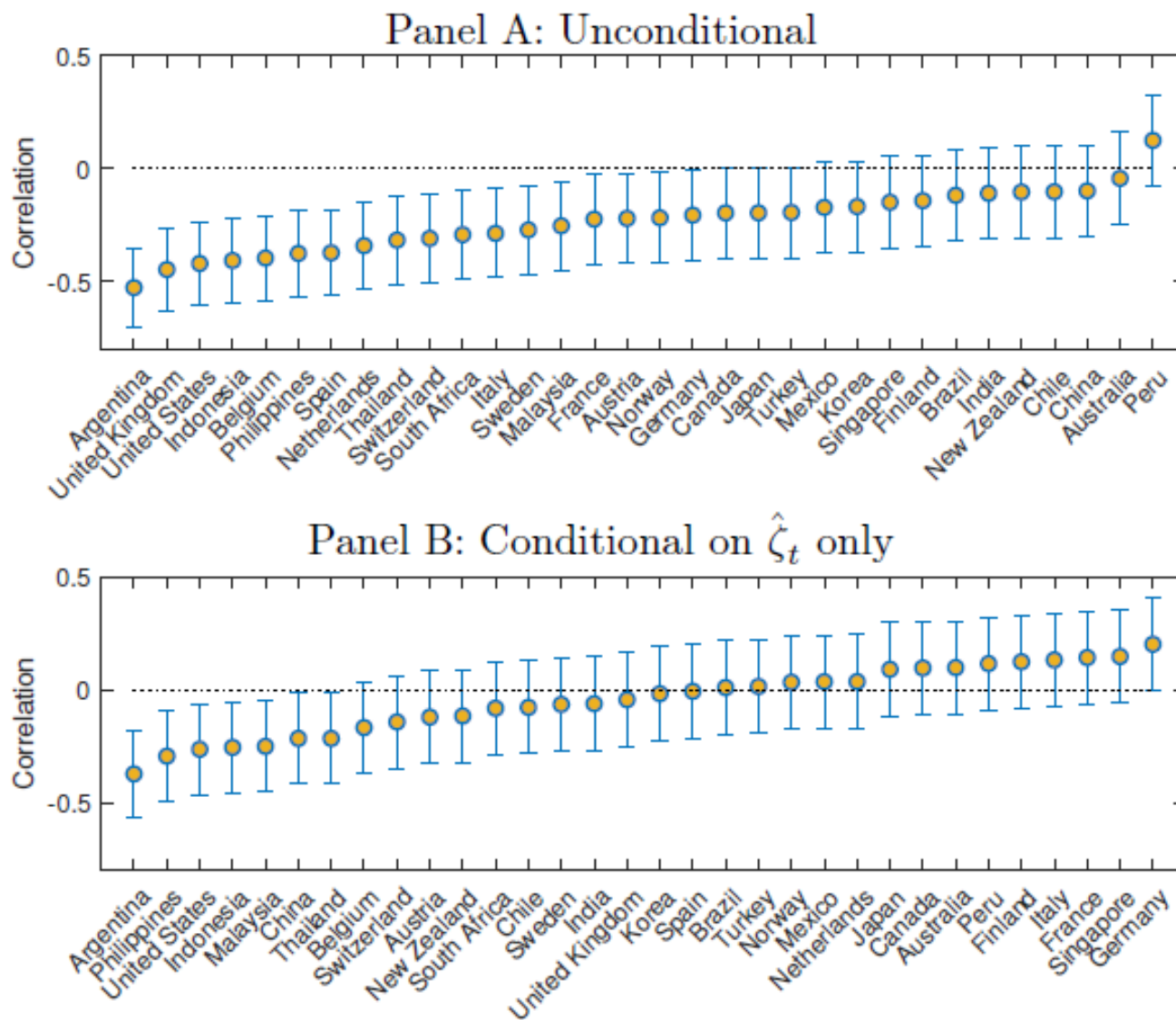
➤ Empirical model

factor-augmented multi-country panel VAR model

$$\begin{aligned} e_{iv,t} &= \lambda_i \zeta_t + \theta_i \xi_t + \eta_{it}, \\ e_{iy,t} &= \gamma_i \zeta_t + \varepsilon_{it}, \end{aligned}$$

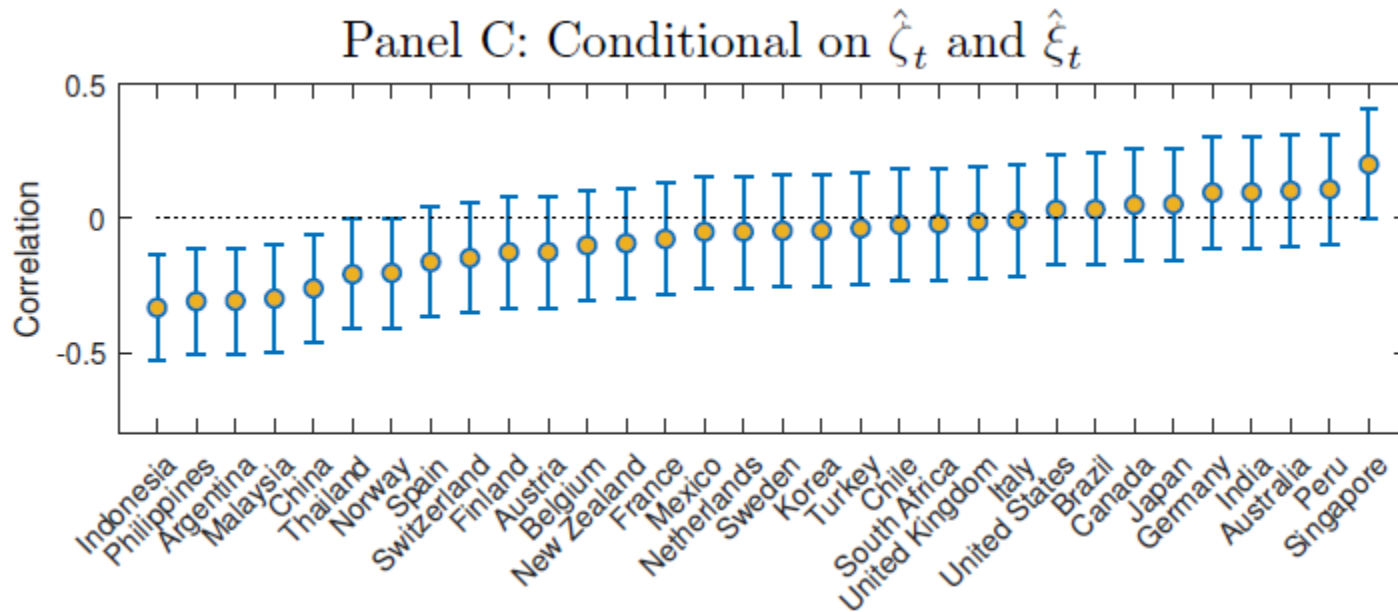
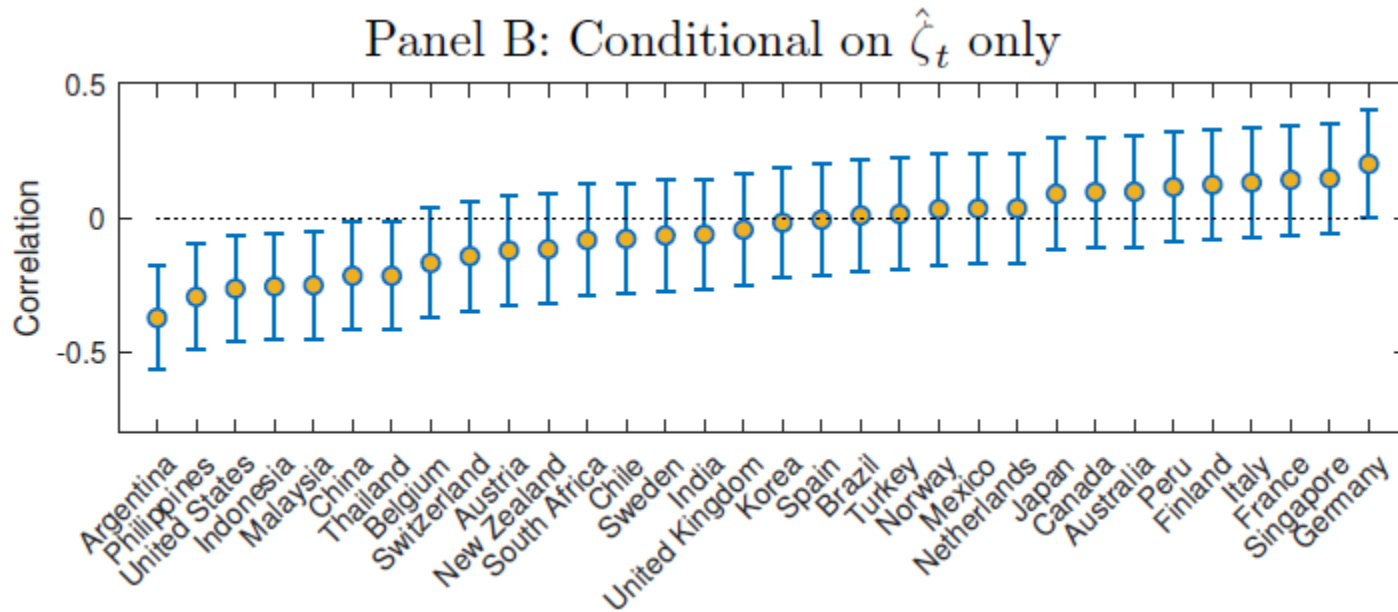
Assumptions needed for identification and estimation

Summary of the paper: RESULTS



➤ Conditioning on the common growth shock captures most of the correlation

Summary of the paper: RESULTS



Overall assessment:

- ✓ Interesting question
- ✓ Very good idea to adopt a theoretical framework to guide the empirical analysis
- ✓ Advanced econometric analysis
- ✓ Extensive robustness analysis
- ✓ Lots of interesting results

Questions:

- theoretical framework
- interpretation of shocks
- empirical issues

Questions: theoretical framework

- Why this particular theoretical framework?
 - *complete markets* assumption
 - *granularity* assumption
- Could it be that different types of economies may need different types of background theoretical frameworks?
 - Large (open) economies → Basu-Bundick (2017), Bloom et al. (2018), ...
 - Advanced small open economies → Open economy extensions of BB17 or BFJSET18
 - Emerging small open economies → Fernandez-Villaverde et al. (2011), ...

Questions: interpretation of shocks

- **Global growth shock**

- correlation with global TFP measures, global capacity-adjusted TFP measures, global natural interest rates measures, global long-run risk measures,...

- **Global financial shock**

- “common factor combining all common factors other than the common growth factor”, labelled as common (or global) financial shock as it reflects second and higher order moment innovations
- “can also include any additional factors that may influence realized equity market volatilities, such as market imperfections, bubble effects, or time-varying risk preferences”
- correlation with measure of US financial uncertainty of Ludvigson et al. (2015), US Baa-Treasury credit spread and Excess Bond Premium of Gilchrist and Zakrajsek (2012), ...

- **No structural identification: cannot interpret them!**

Questions: empirical issues

- Discuss more in detail results, ex for US, DE and China
- Link to literature on volatility and growth (Ramey and Ramey AER 1995, Kose et al. IMF SP 2005, etc.)
- Differentiate components of uncertainty: global, regional, domestic, idiosyncratic (Kose et al. AER 2003, Mumtaz and Musso ECB WP 2018)
- Allow for possible time-variation in co-movement/relationships: extend to time-varying parameters

Concluding remarks

Overall assessment:

- ✓ Interesting question
- ✓ Very good idea to adopt a theoretical framework to guide the empirical analysis
- ✓ Advanced econometric analysis
- ✓ Extensive robustness analysis
- ✓ Lots of interesting results

For follow-up work:

- Move towards a more structural approach

Thank you