Discussant comments on
FX co-movements: disentangling the role of global market factors, carry-trades and idiosyncratic components
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* These comments reflect the views of the author and not necessarily those of the BIS or of central banks participating in the meeting.
FX Comovements: Disentangling the Role of Market Factors, Carry Trades and Idiosyncratic Components

Discussion by Ric Colacito

Contribution

Decompose volatilities and correlations of FX excess returns into short- and long-run components.

1. Long-run volatility of common risk factors increased after 2008
2. Long-run volatility of idiosyncratic risk factors decreased after 2008
3. Long-run correlations increased after 2008
4. What macro variables can explain FX volatility?
This methodology could have much broader implications for International Finance.

1. Benefits for asset allocation
2. Other relevant trends?
3. Determinants of FX volatility?
Benefits for asset allocation: short-run

- A US investor chooses how much to invest in int’l stock markets.

\[
\min_{w_t} w'_t H_t w_t
\]
\[
s.t. \quad w'_t 1 = 1
\]

- \(H_t\) is the conditional covariance matrix

- Conditional variances follow GARCH(1,1).

- Conditional correlations:
  1. Constant
  2. DCC (mean revert to unconditional correlations)
  3. DCC-MIDAS (mean revert to time-varying correlations - functions of low-frequency variables.)

How much smaller is the realized portfolio volatility?
Benefits for asset allocation: long-run

- What are the benefits if the investment horizon is longer than a week?
- Hard to tell, but benefits are likely to be even larger!
Asset Allocation: bottom line

- What are the financial benefits of decomposing volatilities and correlations into short- and long-run components?
- Comparison of methodologies?
- Why focus only on carry-trade?
- What fraction of the results is driven by emerging markets?
Other trends?

Are there other relevant empirical relationship between macro and financial variables?

- International debt vs FX volatility?
- International debt vs consumption growth volatility?
- International correlation of stock market returns and FX volatility?

→ Provide richer set of restrictions for international finance models.
International Debt and FX Volatility

[Graph showing correlation between % Change in σ(Δe) and % Change in abs(NFA/OUTPUT) for various countries such as CAN, DK, DEU, FRA, ITA, JPN, NLD, AUT, ESP, AUS, FIN, and KOR]
Correlation of Stock Returns and FX Volatility
Correlation of Stock Returns and FX Volatility: high frequency

Figure 13: Conditional second moments. This figure shows conditional correlations (horizontal axis) and volatilities of exchange rate movements (vertical axis) in nine countries from 1970 to 2007. Exchange rates are always computed against the US dollar.

This can be readily seen by decomposing returns as

$$\sigma_t(\Delta e_{t+1})$$

and noticing that the Euler equation restriction implies a constant price-consumption ratio. Hence the correlation of asset returns is driven by the cross-country correlation of consumption growth rates. As discussed in the previous section, the correlation of consumption growth and exchange rate’s volatility are inversely related.
This technology could be used to bridge part of the gap between the joint dynamics of international prices and quantities.

Better assessment of link between time-varying second moments and current accounts, net exports, ...

Useful for international finance modeling, practitioners, and policy makers.
Determinants of FX volatility

Gonzalo suggests that:

the variation in FX volatilities may largely come from systematic risk factors, and that the idiosyncratic component shows only a mild response to country-specific fundamentals.

Go for it!

Literature is trying to provide conclusive evidence on the dynamics of common international risk factors

→ Colacito and Croce (JPE, 2011)
→ Lustig, Roussanov, and Verdelhan (RFS, 2011)
→ Stathopoulos (2010)
→ ...
Can a better measure of long-run correlation help us to better understand FX volatility?

R² = 0.9238

![Graph showing the relationship between long-run risks and FX volatility](image)
Determinants of FX volatility: bottom line

- Can long-run correlations predict FX volatility?
- Why focus only on forecasting power of country-specific macro variables?
- What about bilateral trade variables?
- How does this look in the cross-section of countries?
- What macro variables are responsible for the dynamics of international correlations?
Concluding remarks

- A very interesting paper!

- Suggestions:
  1. benefits?
  2. other trends?
  3. what variables are responsible for FX fluctuations?