“Explaining the Great Moderation Exchange Rate Volatility Puzzle”

by Vania and Jenny

Discussion by Valentina Bruno

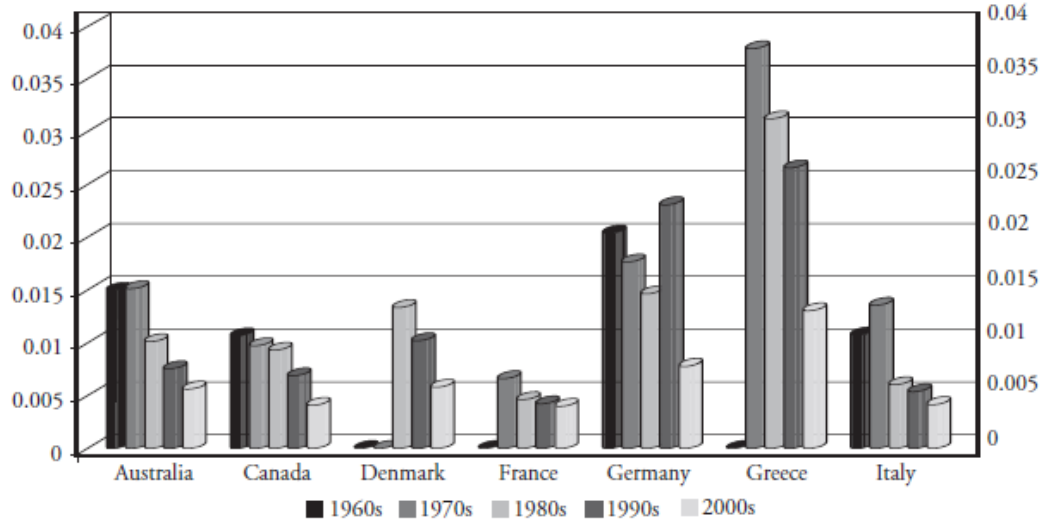
What is the Great Moderation?

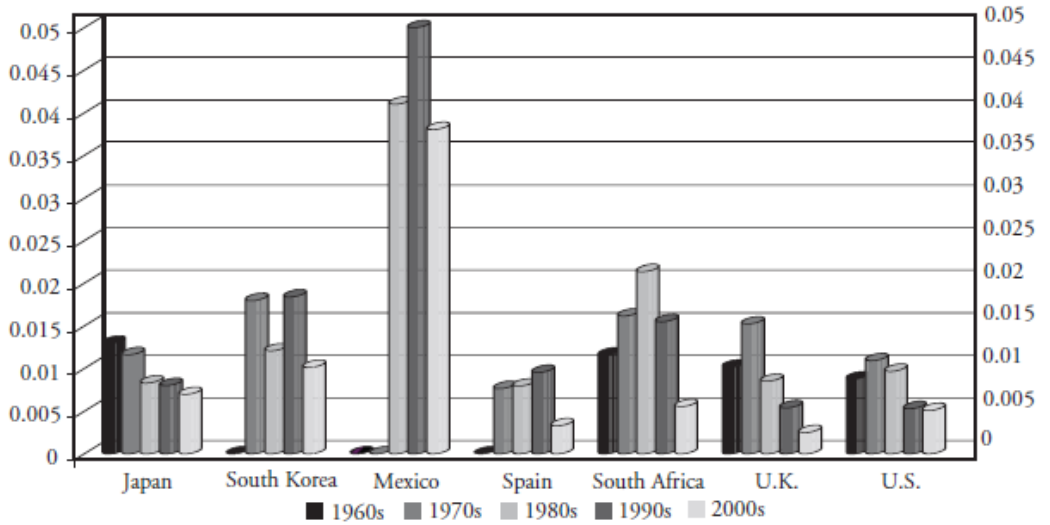
- Decline in output volatility in many countries over the past decades

What is the Great Moderation?

- Quarterly output growth volatility has fallen since 1970s
- In the US it fell by more than 50% from the 1970s

Rogoff, 2006, Jackson Hole





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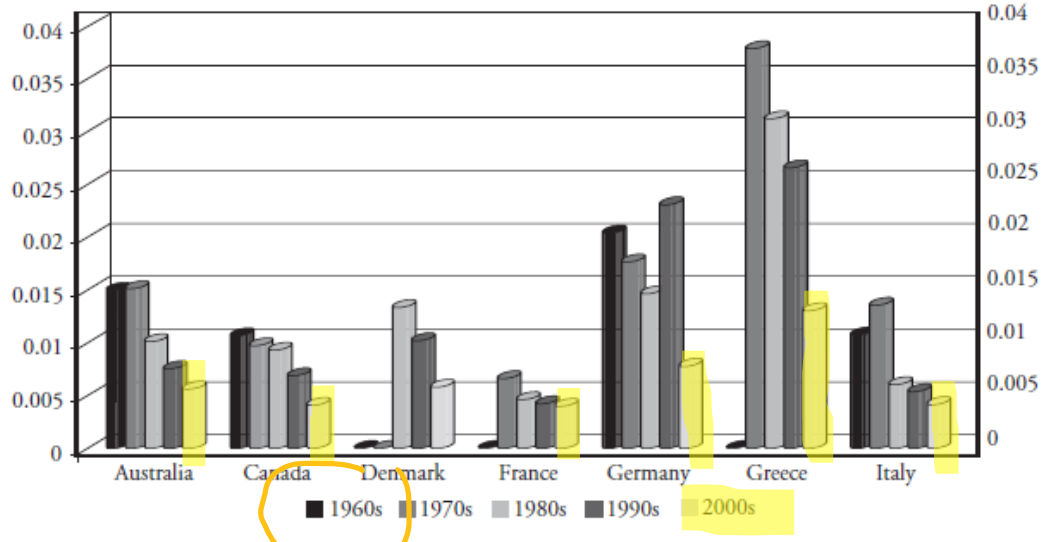
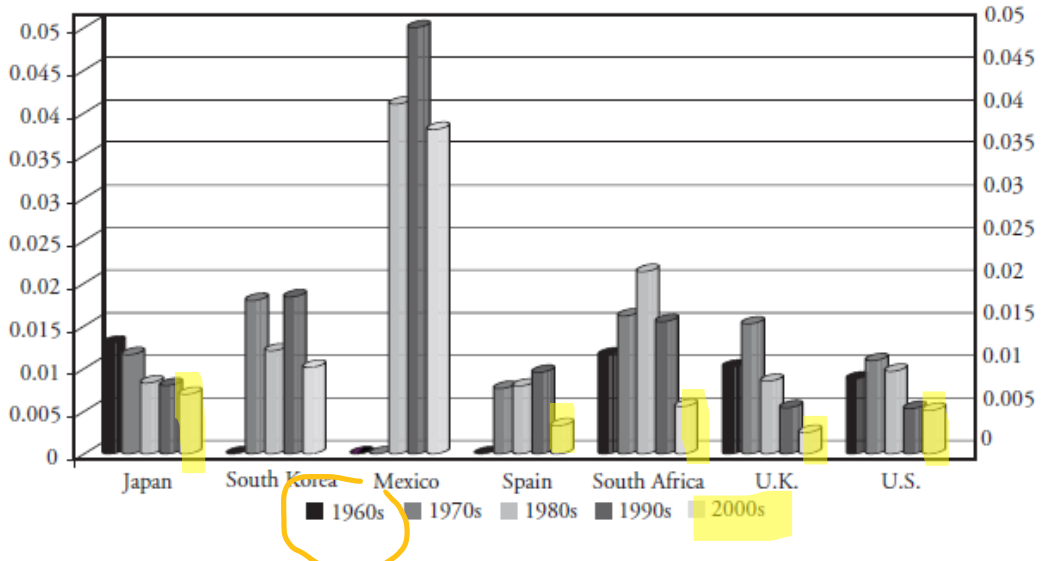
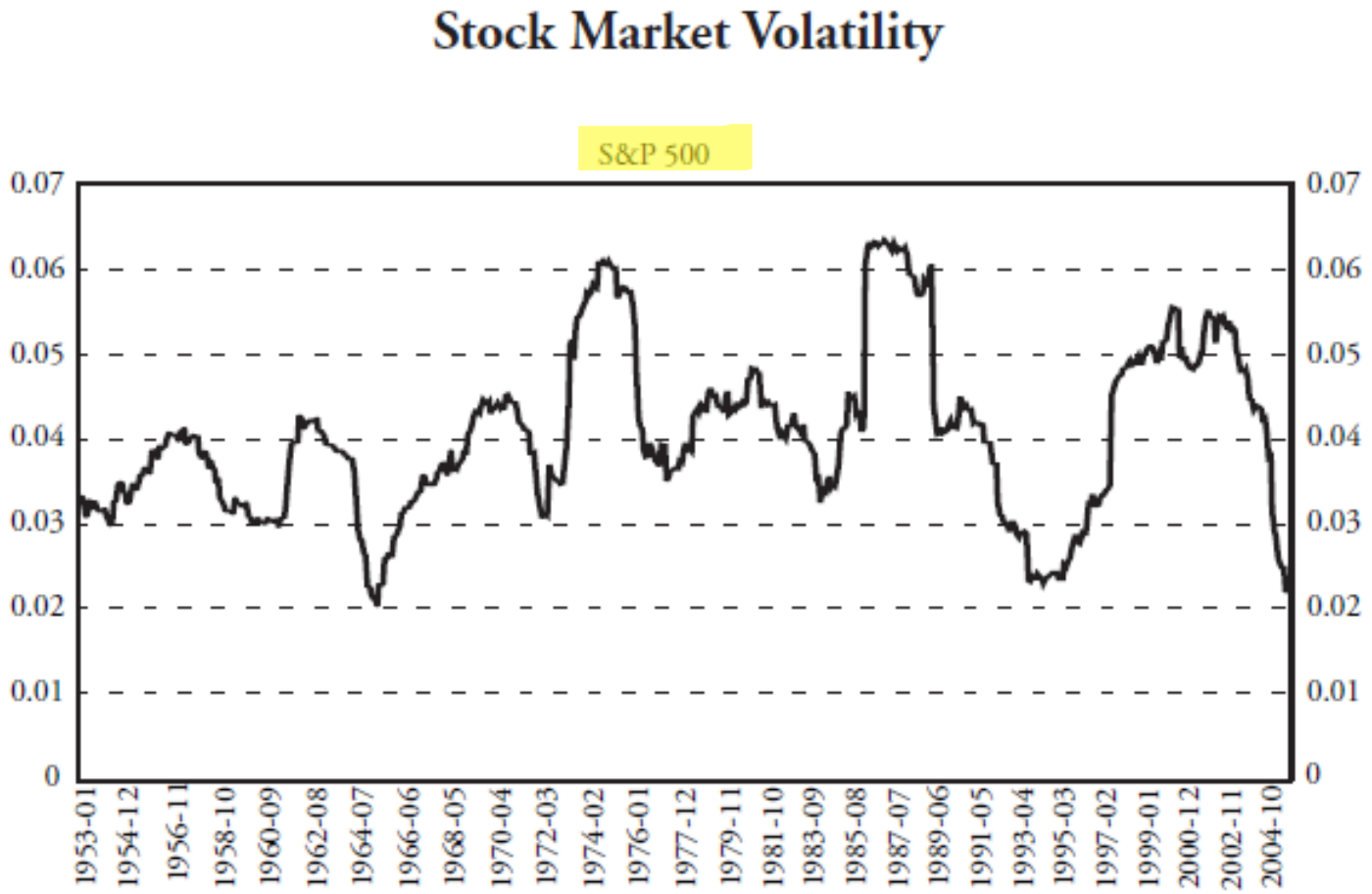




What about the volatility of asset prices?



Rogoff (2007)

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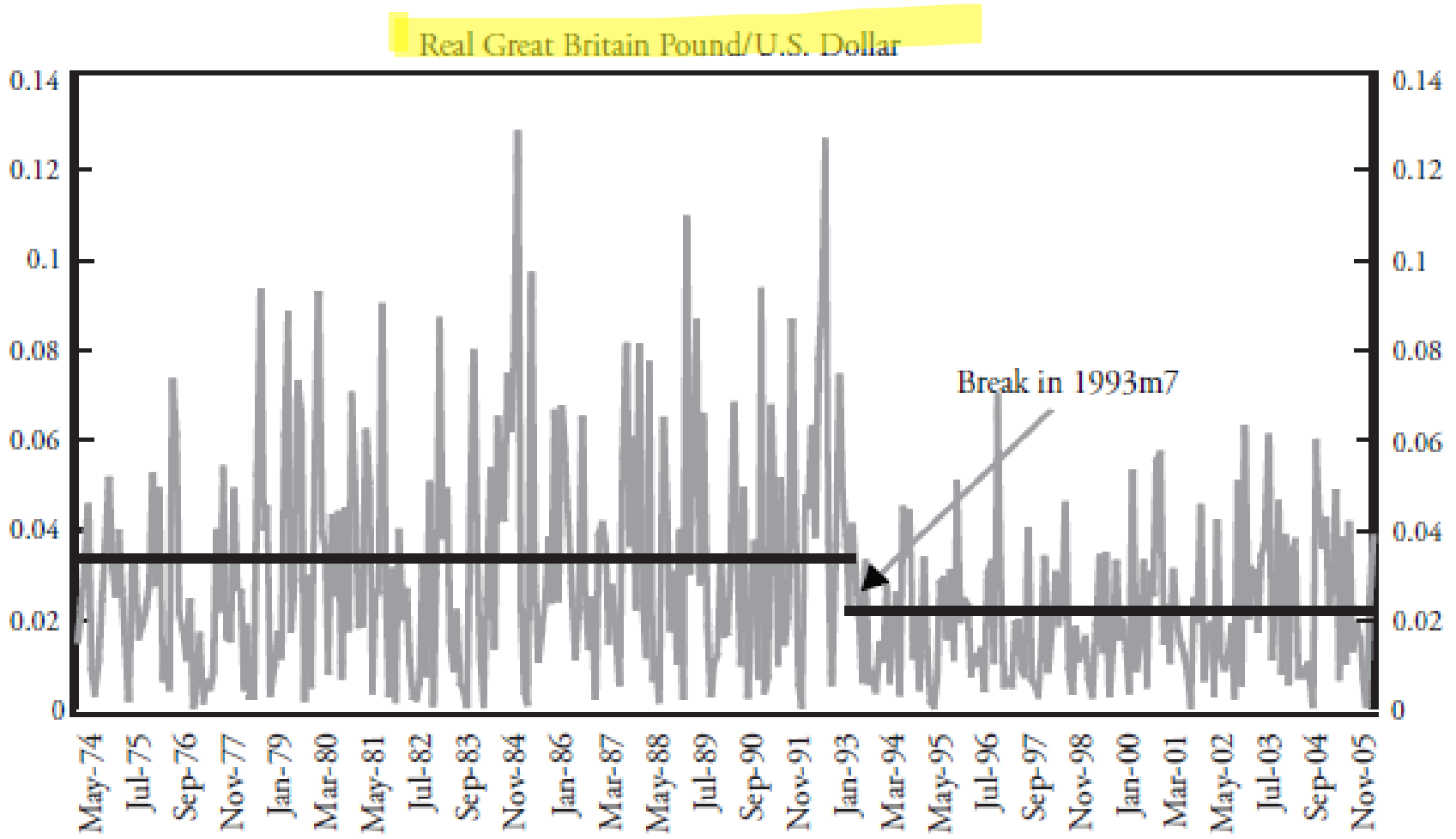

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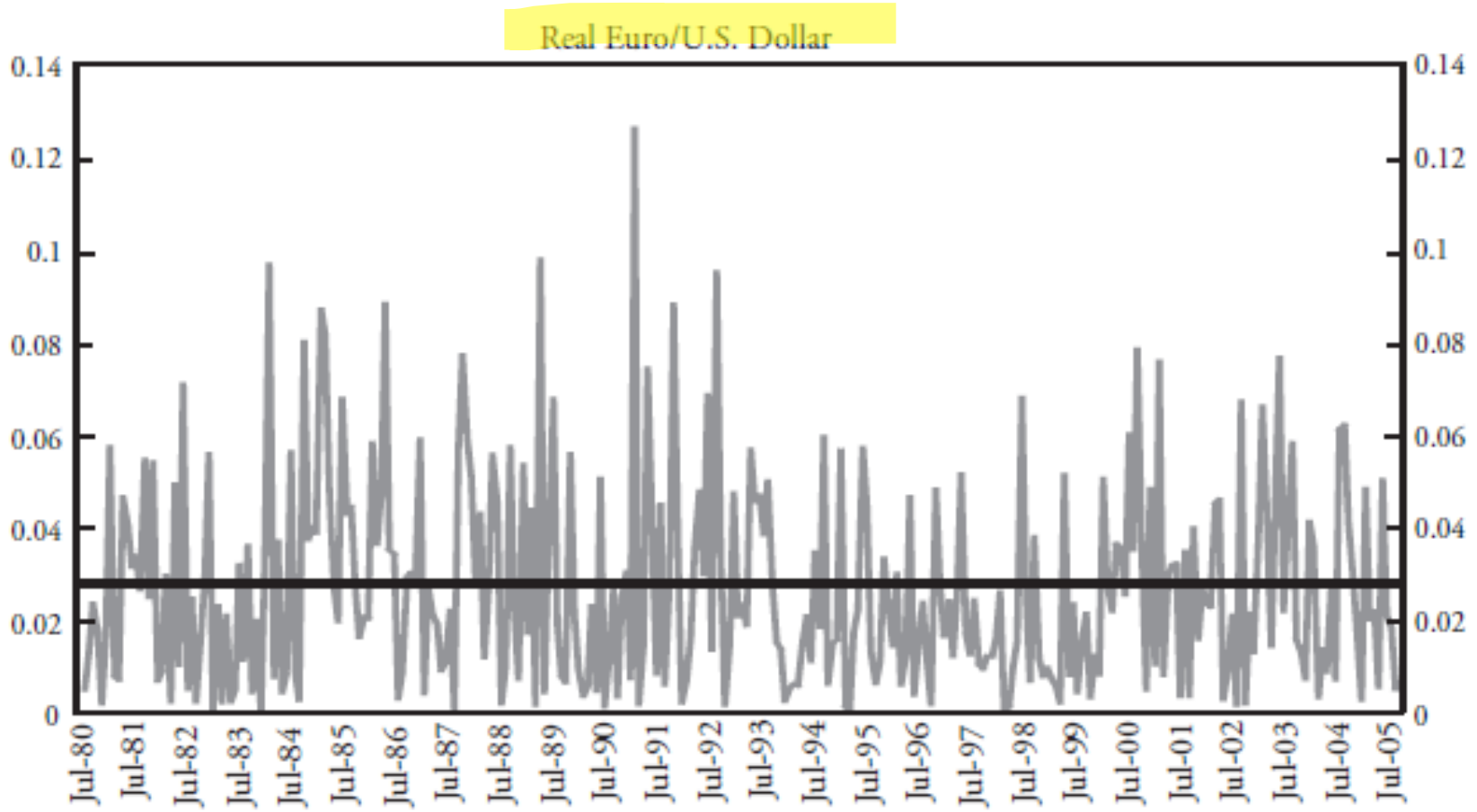

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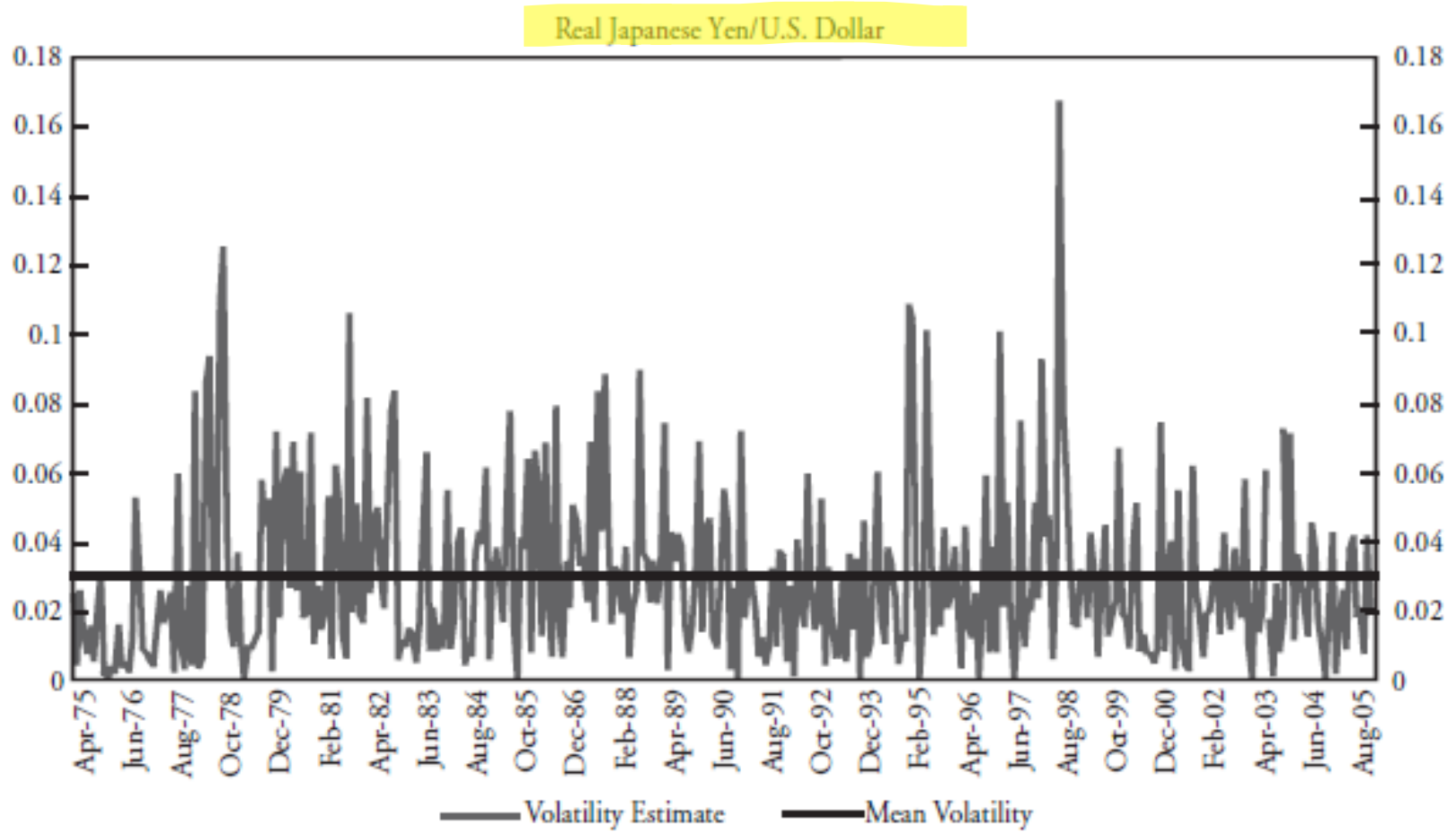

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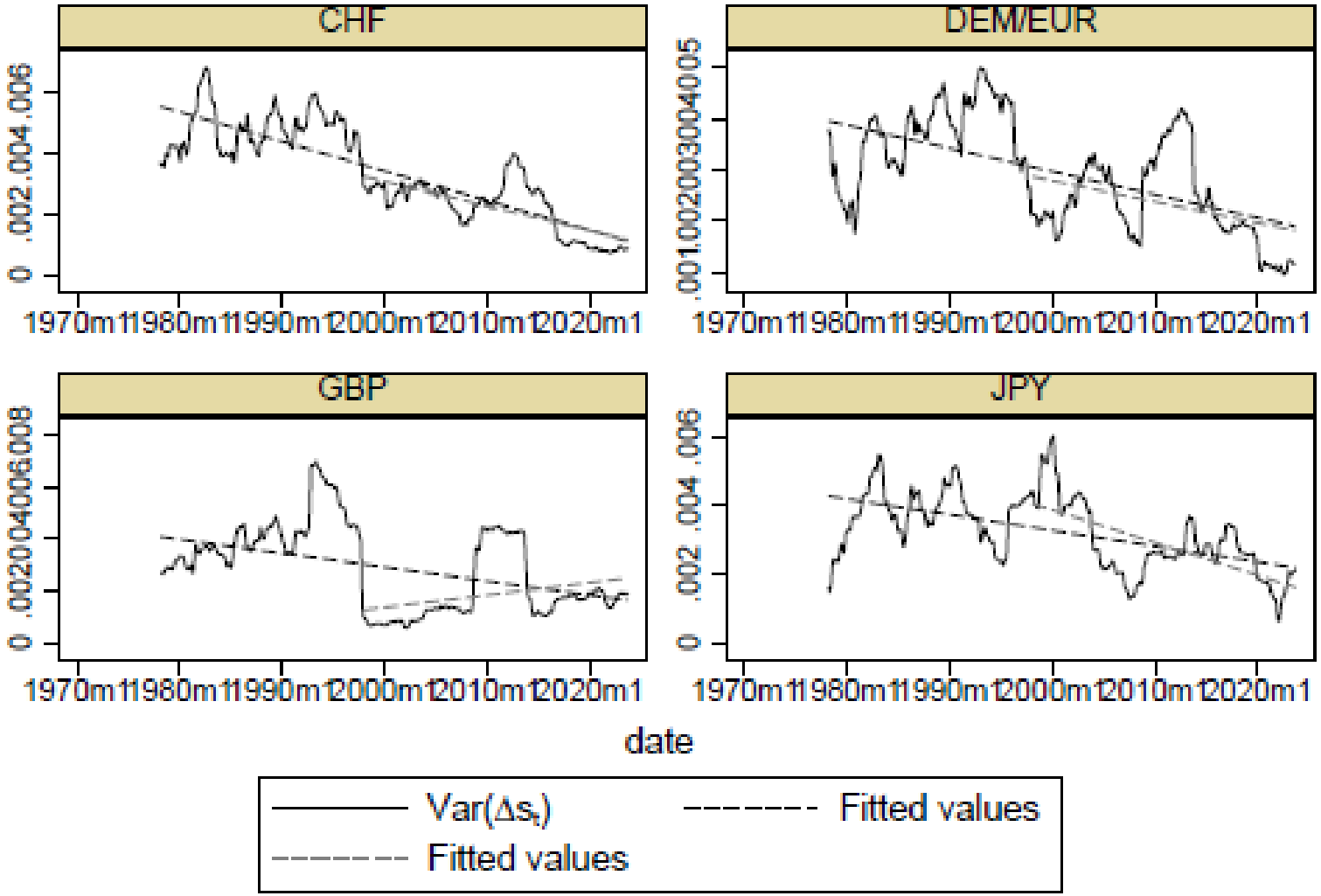
Vania and Jenny

What could *explain* the time varying volatility of seven currencies against the US dollar?

Figure 1: 60 Month Rolling Variance of the Quarterly Exchange Rate Change



Vania & Jenny, Figure 1

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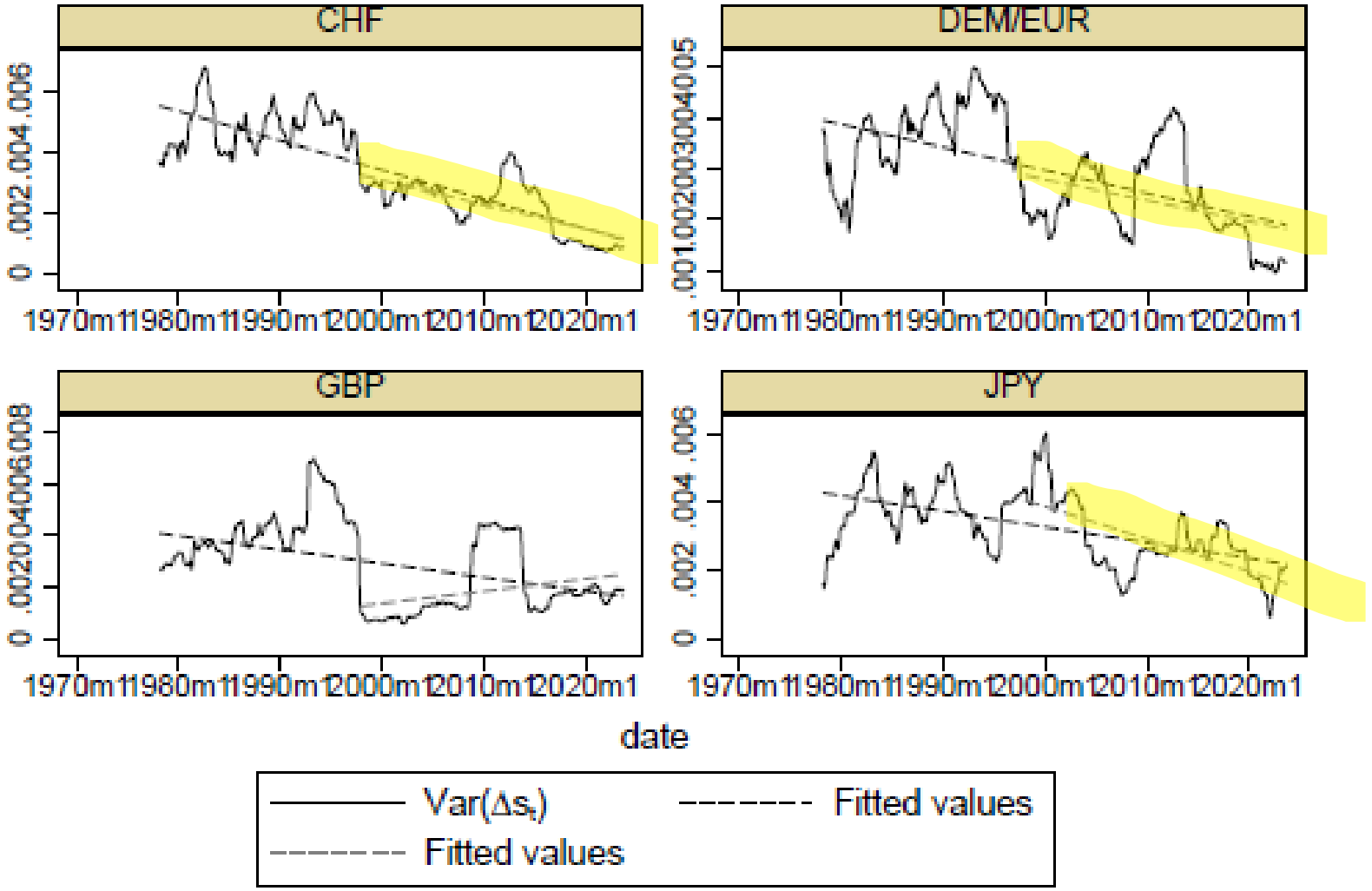

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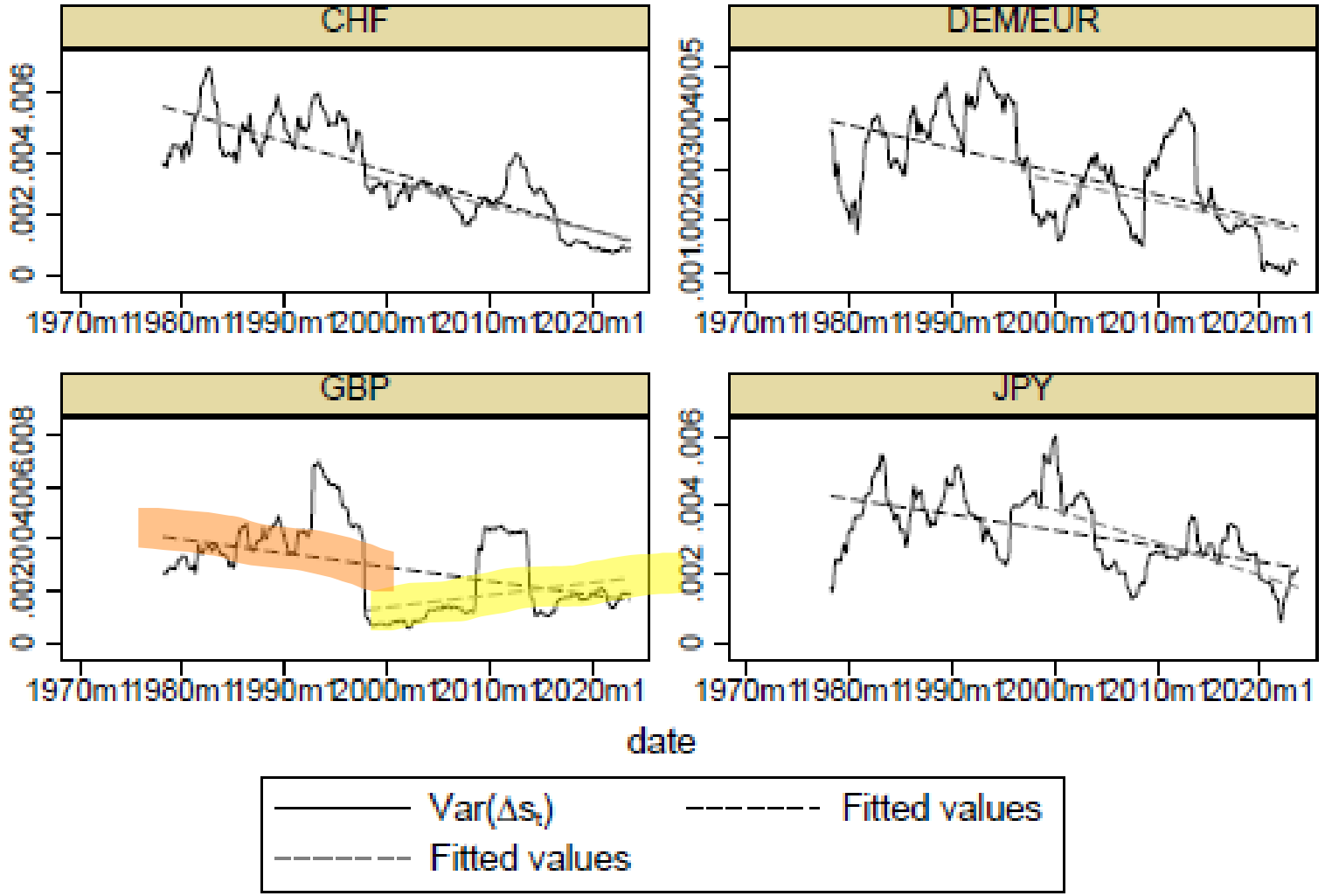

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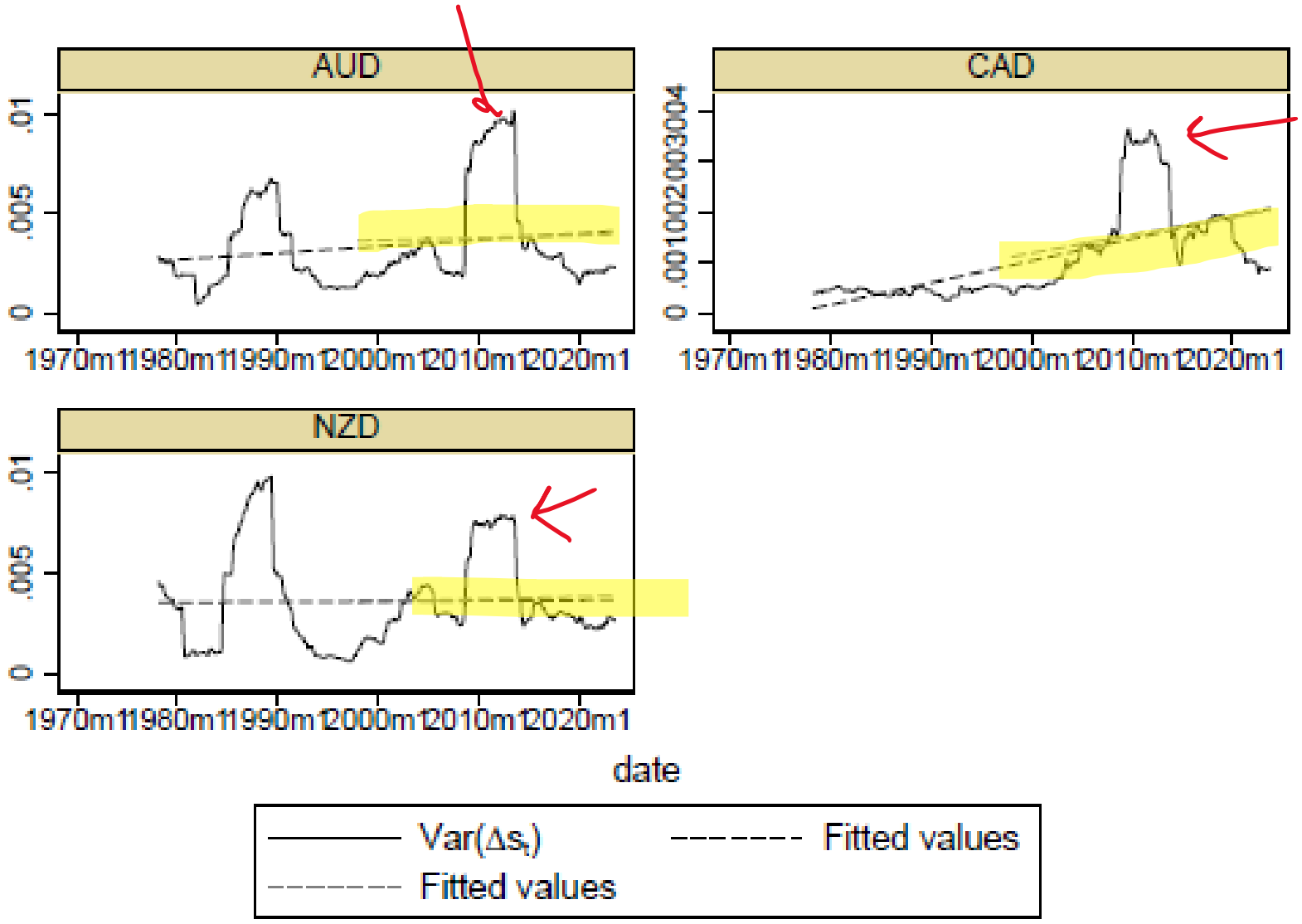

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Figure 1

To what extent do macro variables *explain* the time-varying exchange rate volatility?

- They explain some, but they are not the whole story!

- For **CHF, EUR, and JPY,** exchange rate volatility is explained by the declining variance of the currency risk premia
- For **AUD, CAD, and NZD**, exchange rate volatility is explained by the weakening of the Fama Puzzle and by how MP responds to expected inflation
- **GBP** ?

It’s a puzzle in the puzzle

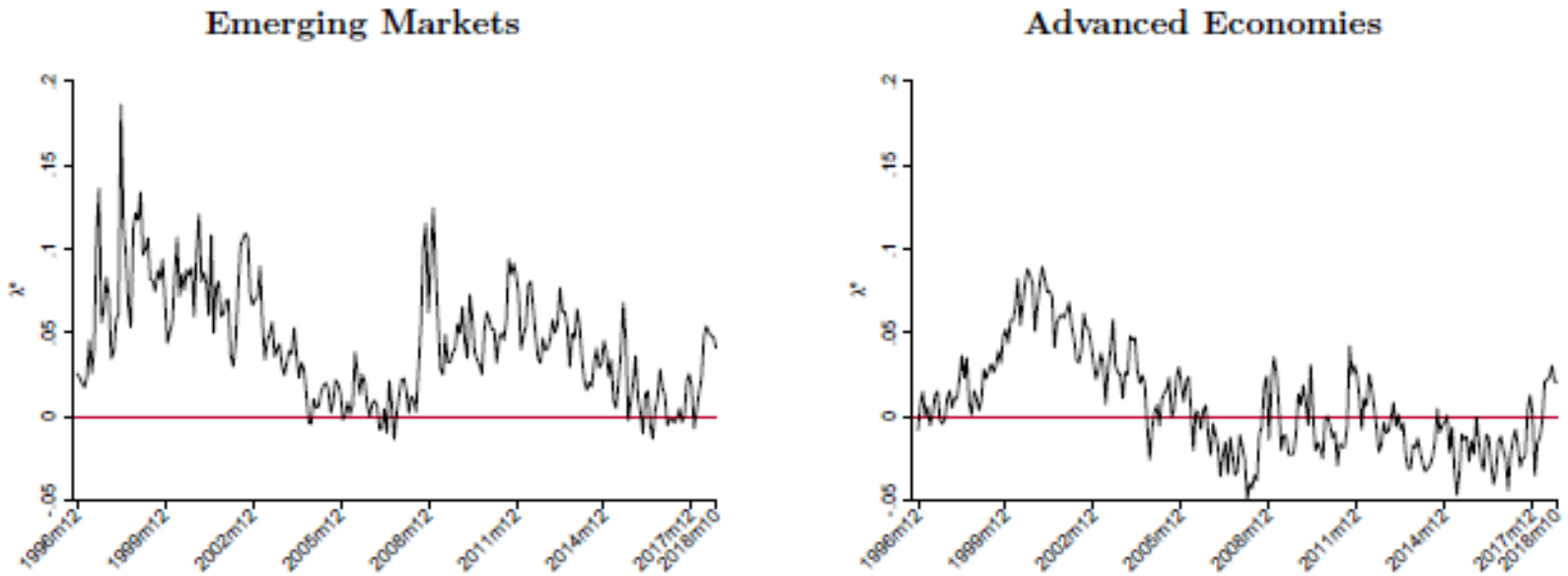
- Obstfeld and Rogoff (2000) coined the catchphrase “*Exchange-Rate Disconnect Puzzle*”, alluding to the weak relationship between the exchange rate and macroeconomic aggregates.
- This puzzle can be measured/captured by the unobserved deviation from UIP – the *Fama Puzzle*.

- “Risk Premia” is at the core of it.

Sebnem: Let’s not forget about the EMEs!

Excess Currency Return co-moves with global risk

UIP on average holds for AE, but it never holds for EME.



a) UIP Premium

Kalemli-Ozcan and Varela, *Five Facts about the UIP Premium*

Excess Currency Return co-moves with global risk

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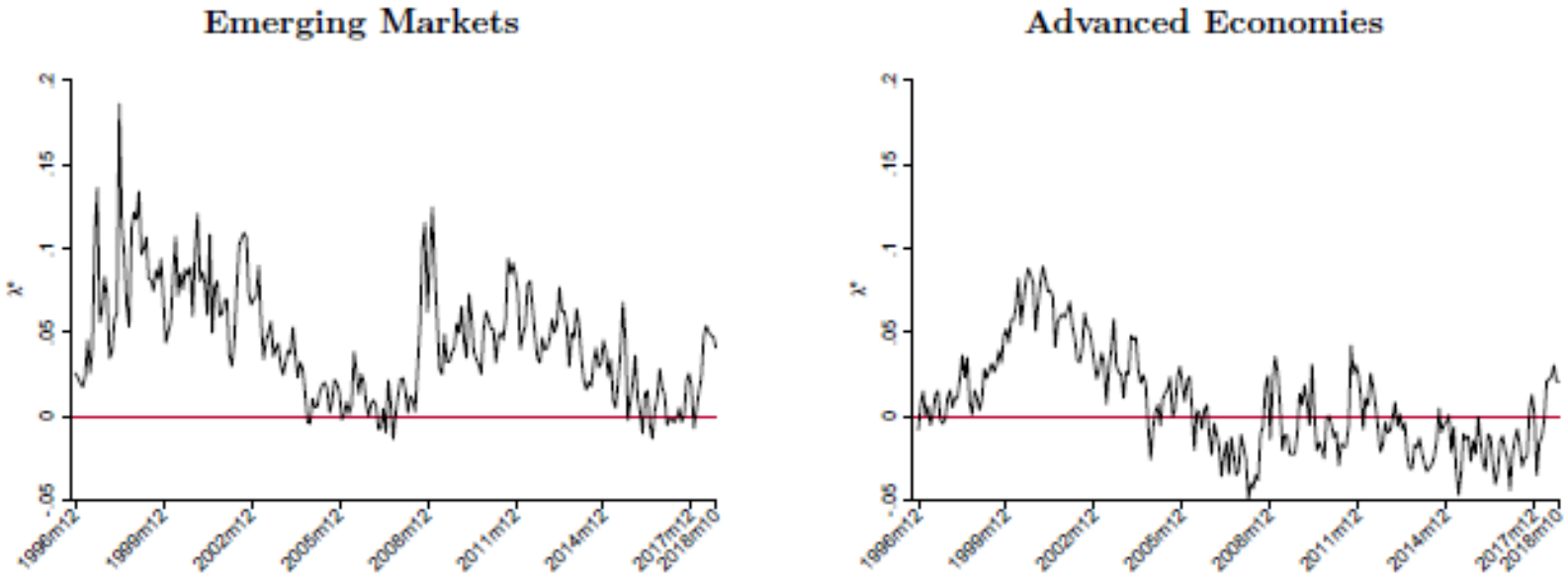
Importantly, global risk sentiments are positively correlated with UIP for both EME and AE.



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Bruno, Shim, Shin (2022)

Drilling down

The US dollar and the risk-taking channel

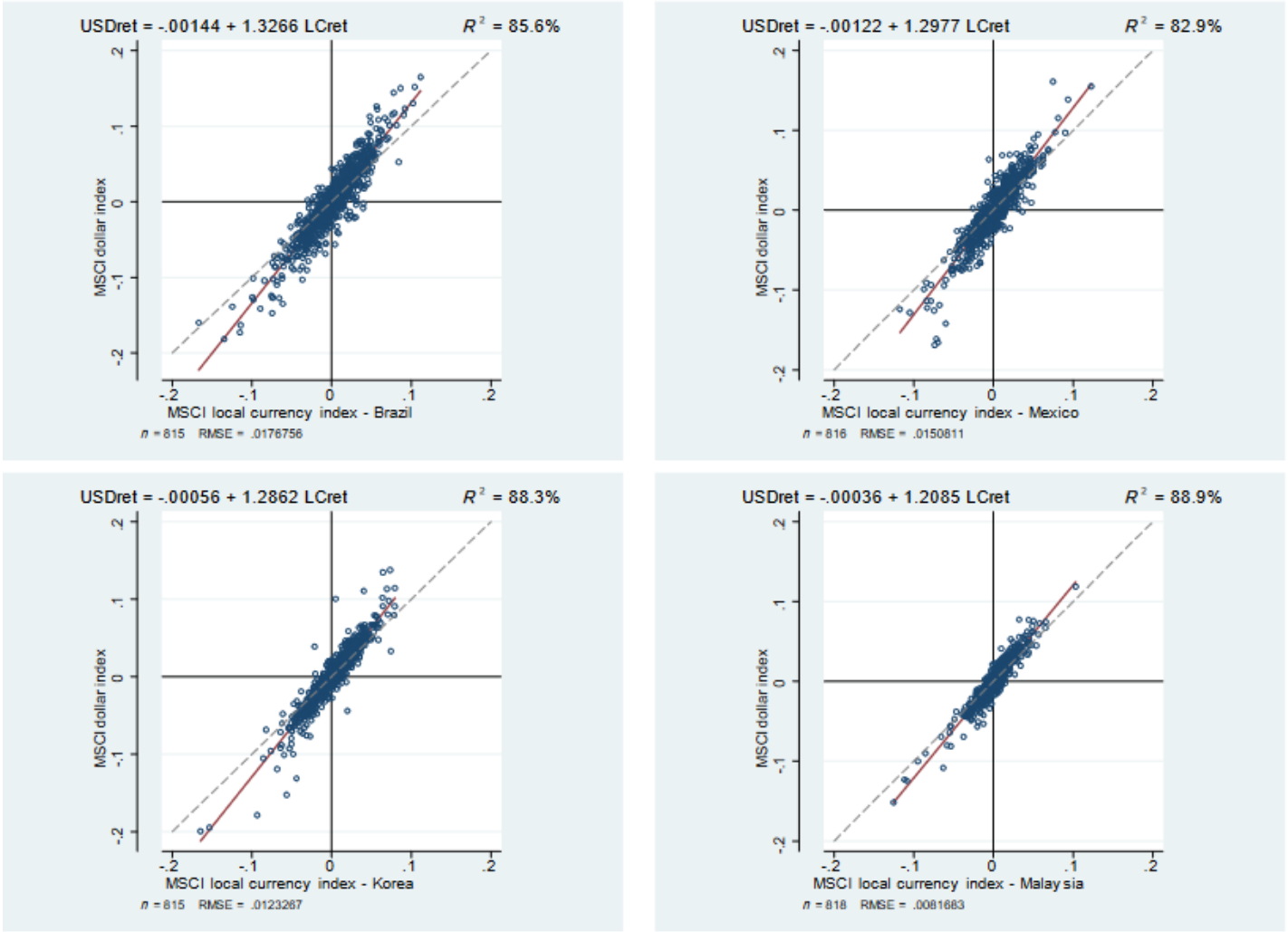

Figure 1: **Dollar return multiplier for Brazil, Korea, Mexico and Malaysia**

On the horizontal axis: stock market returns denominated in local currency

On the vertical axis: US dollar returns

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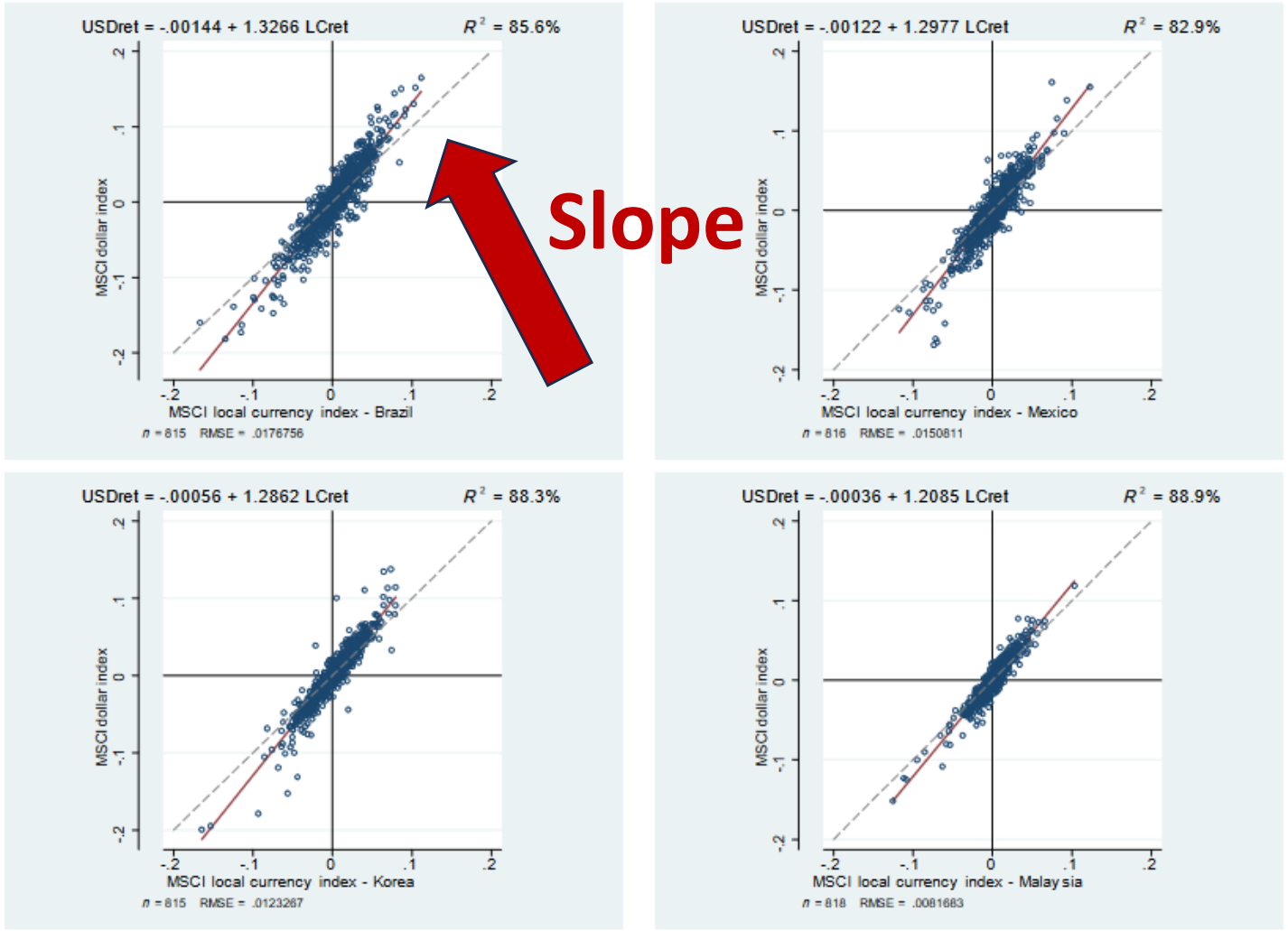

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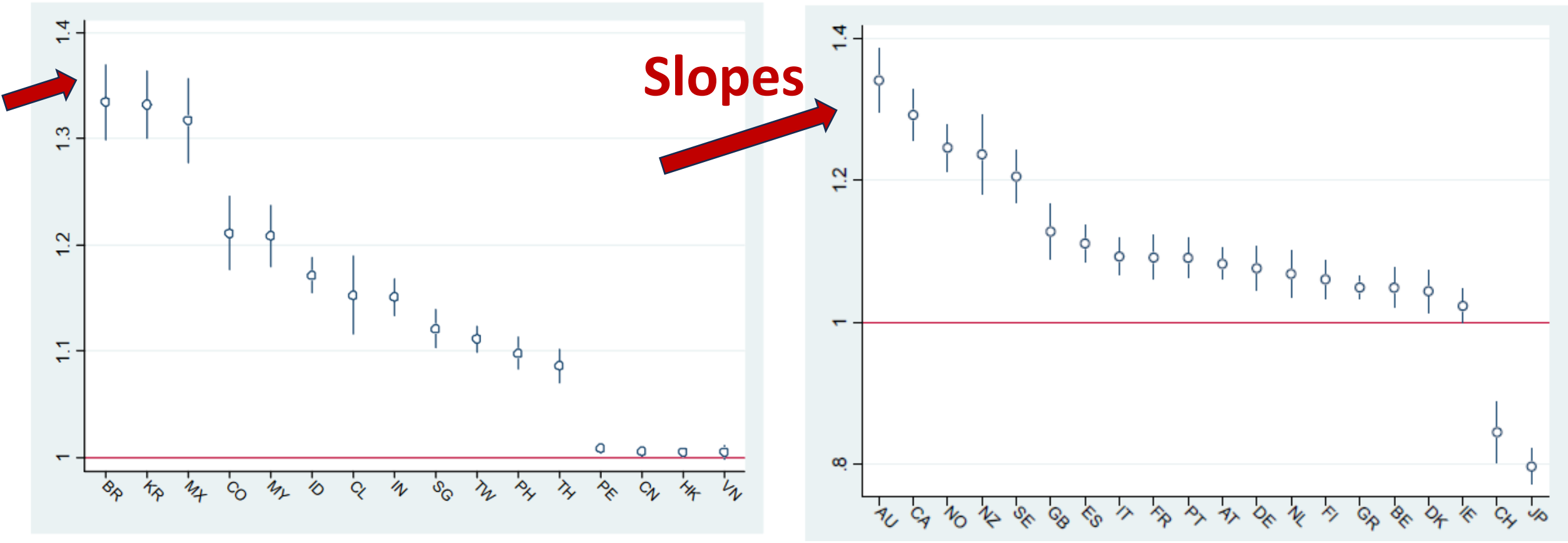
The US dollar as a cross-section risk factor



On the vertical axis: Dollar beta (Slopes)

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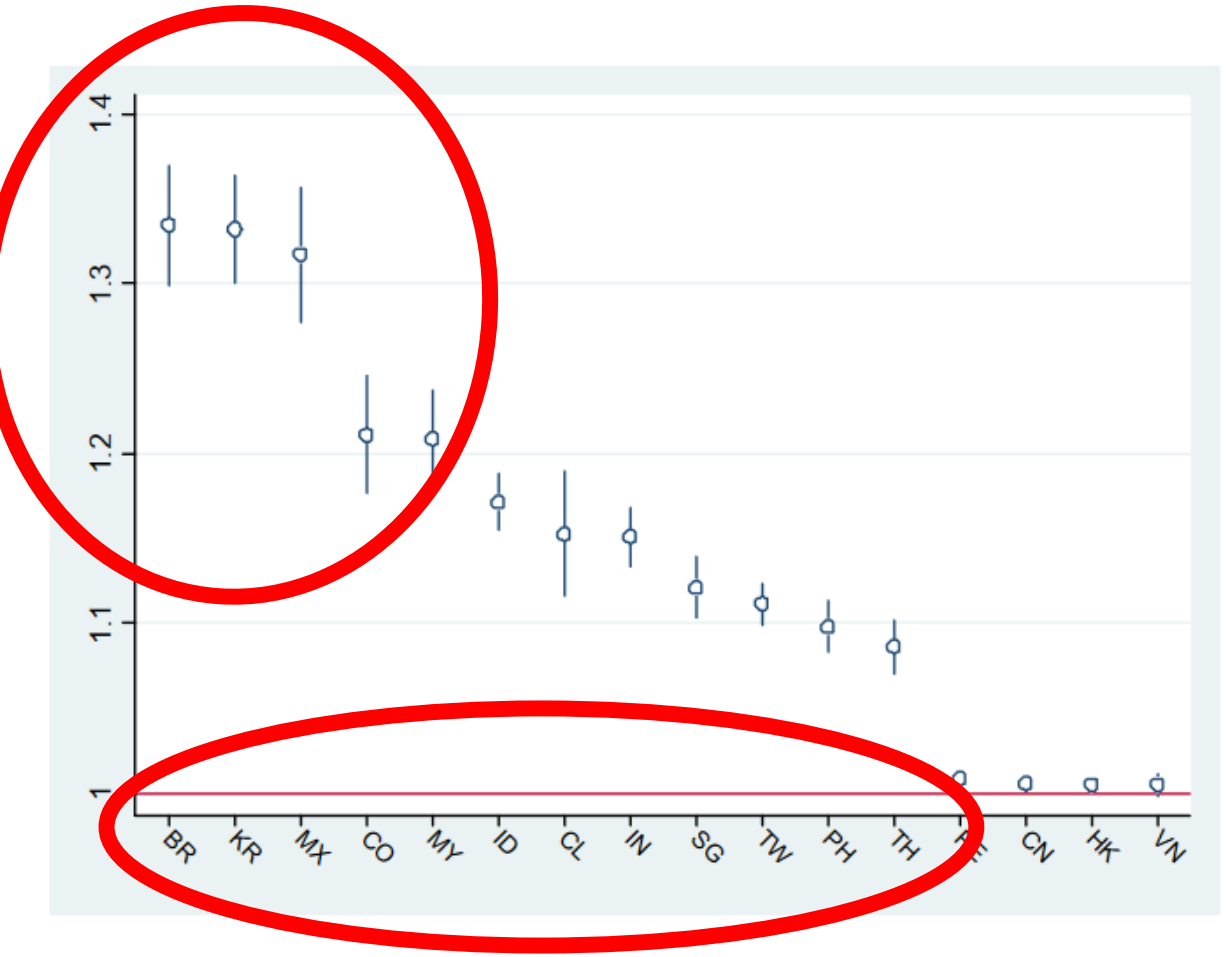

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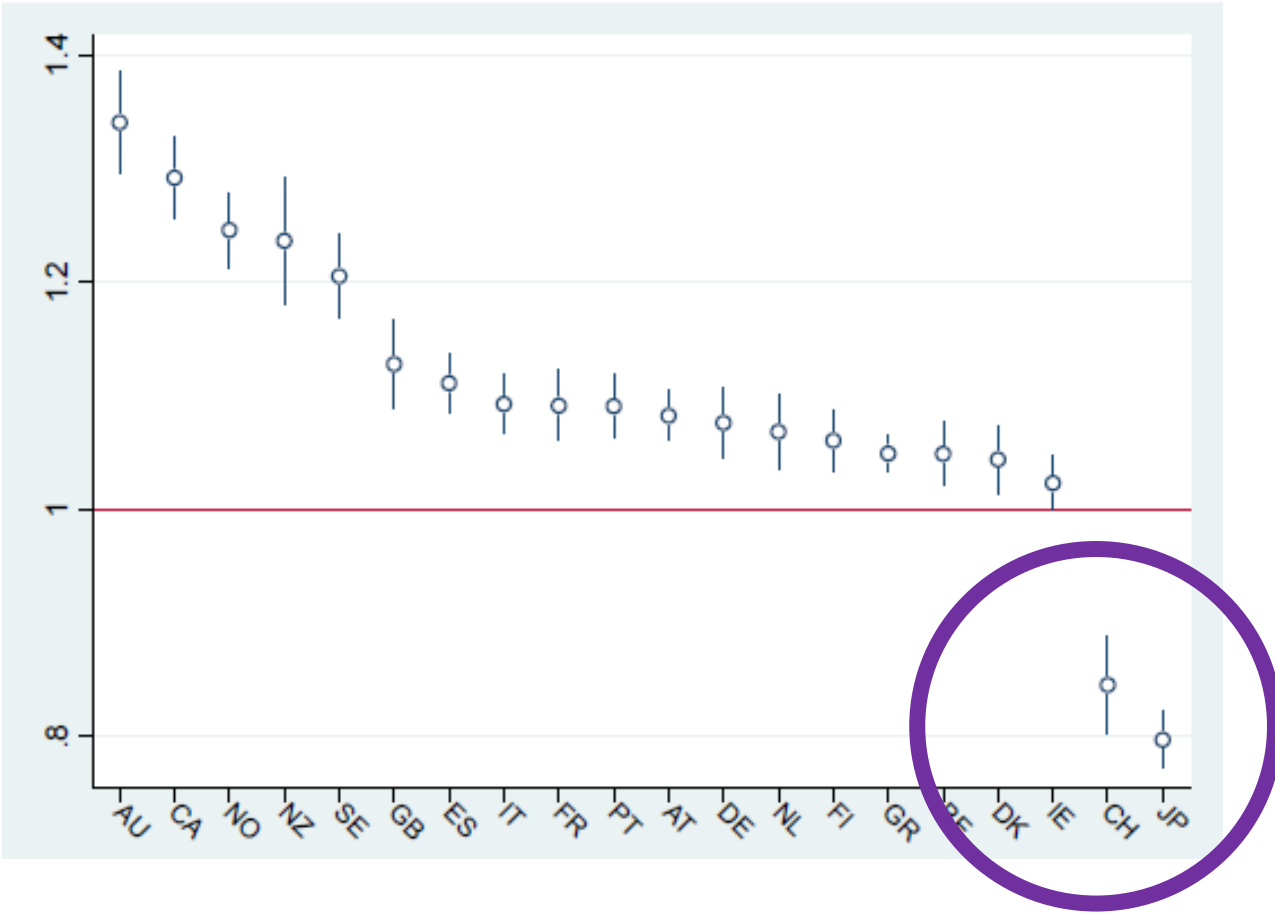
The US dollar as a cross-section risk factor

Japan and Switzerland are special because of the hedged trades using swaps via the dollar (Shin, 2023)



The US dollar as a cross-section risk factor

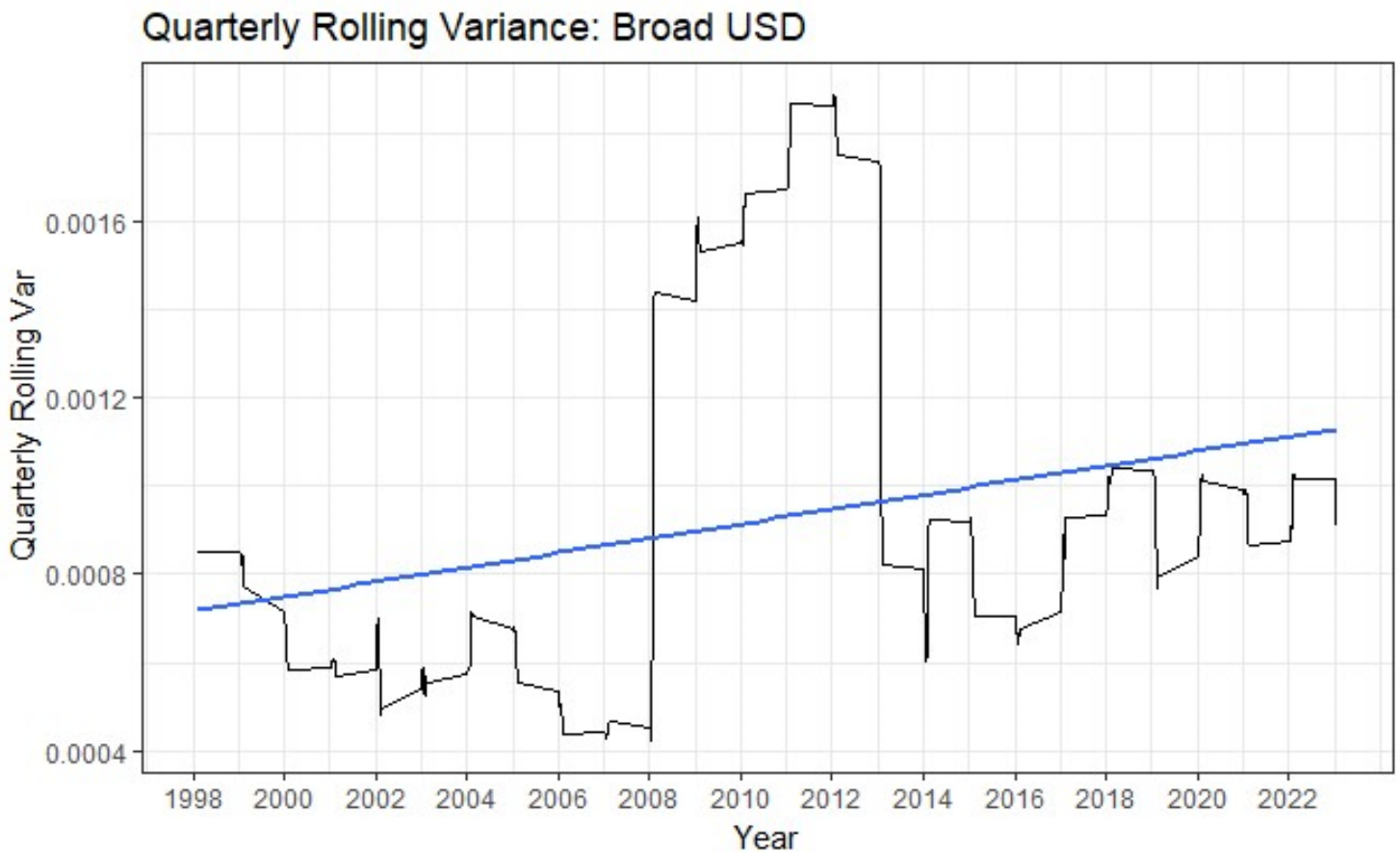
Verdelhan (2018):

> **the dollar and carry** account for a substantial share of the exchange rate time series. They are risk factors in the asset pricing sense. Cross-country differences in systematic currency risk are correlated to differences in capital flows co-movements, more than in trade flows.
>
> ***The dollar can be interpreted as a global macroeconomic level risk***

Hau and Rey (2006):

> higher returns in the home equity market relative to the foreign equity market are associated with a home currency depreciation
>
> net equity flows into the foreign market are positively correlated with a foreign currency appreciation.

Drilling-up: the Broad US dollar Index



Quibbles

- Variance and covariance (Tables 3 and 4) do not pick up tail risk
  - UIP disappears when tail risk is taken into account (Dobrynskaya, 2014, RoF)
  - *Exchange rates go up by the stairs and down by the elevator* (Brunnermeier, Nagel, Pedersen (2008)
- Brexit volatility?
- Central banks interventions in FX markets or monetary policy is also a factor for the past 2-3 years.
- Chart showing the relationship between lower exchange rate volatility and carry trade

Wrapping-up

What could *explain* the time varying volatility of seven currencies against the US dollar?

- The Great Moderation does not explain the whole story
- Volatility of the currency risk premia, the Fama Puzzle, and how monetary policy responses to inflation explain a lot.

What is behind the *explanation*?

- **The US dollar emerges as a global risk factor correlated with common movements across risky assets, consistent with a financial channel operating through swings in risk-taking by global investors.**

A cautionary tale

- Rogoff (2007) on the *Impact of Globalization*:
  - Higher productivity, gains from trade, lower output growth volatility.
  - But also… asset price volatility, including exchange rate volatility.

  …. interest rates and risk premia fall… they become simultaneously more sensitive to perceived change to risk, offsetting the volatility reduction that would otherwise come from lower macro volatility. ***Even as risk levels have fallen, they remain volatile.***

- Shin (2010): ***The action-inducing nature of market prices*** *are the most dramatic during crisis episodes, but they* ***are the most damaging in boom times when they operate away from the glare of the television cameras.***

Main References

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