

**Discussion of Cecchetti, Flores-Lagunes, and  
Krause, “Assessing the Source of Changes in  
the Volatility of Real Growth**

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Harvard University and the NBER

# **Outline of discussion**

1. **Brief overview**
2. **Contributions of CFK**
3. **A quick spin through the recent research:  
What have we learned?**

# 1. Brief Overview

**The big question – what is the source of the Great Moderation (in so many countries)?**

1. Policy changes (monetary; fiscal)
2. Structural changes (inventories; financial markets)
3. Good luck

These have very different implications

**Lots of recent research on this topic:**

Irvine-Schuh (2005), CFK (2005)

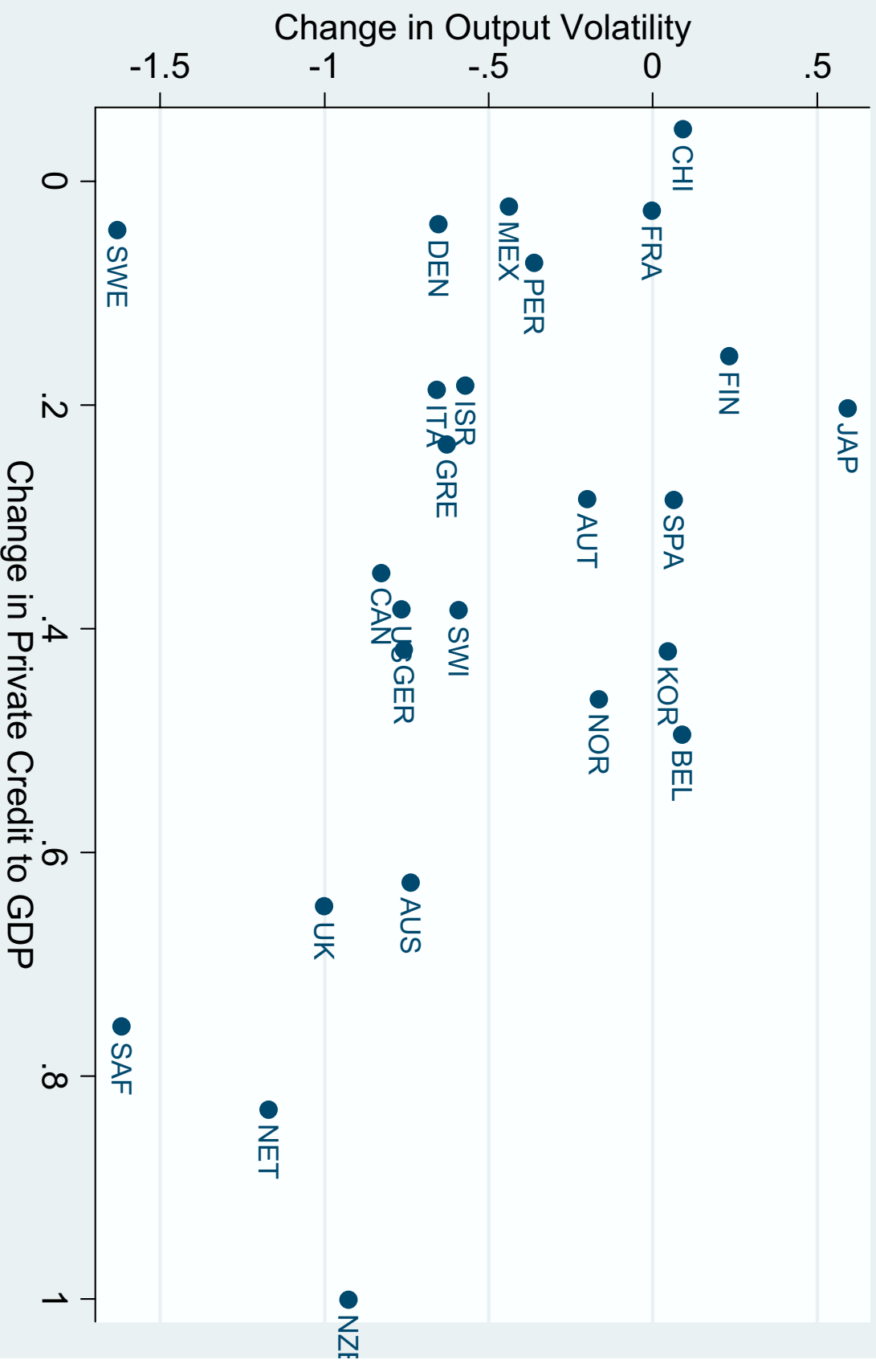
Boivin-Giannoni (2005), Justiniano-Primiceri (2005), Gordon (2005),

Dynan, Elmendorf, and Sichel (Carnegie-Rochester, 2005), Ramey-Vine (2005), Stock-Watson (JEEA, 2005)

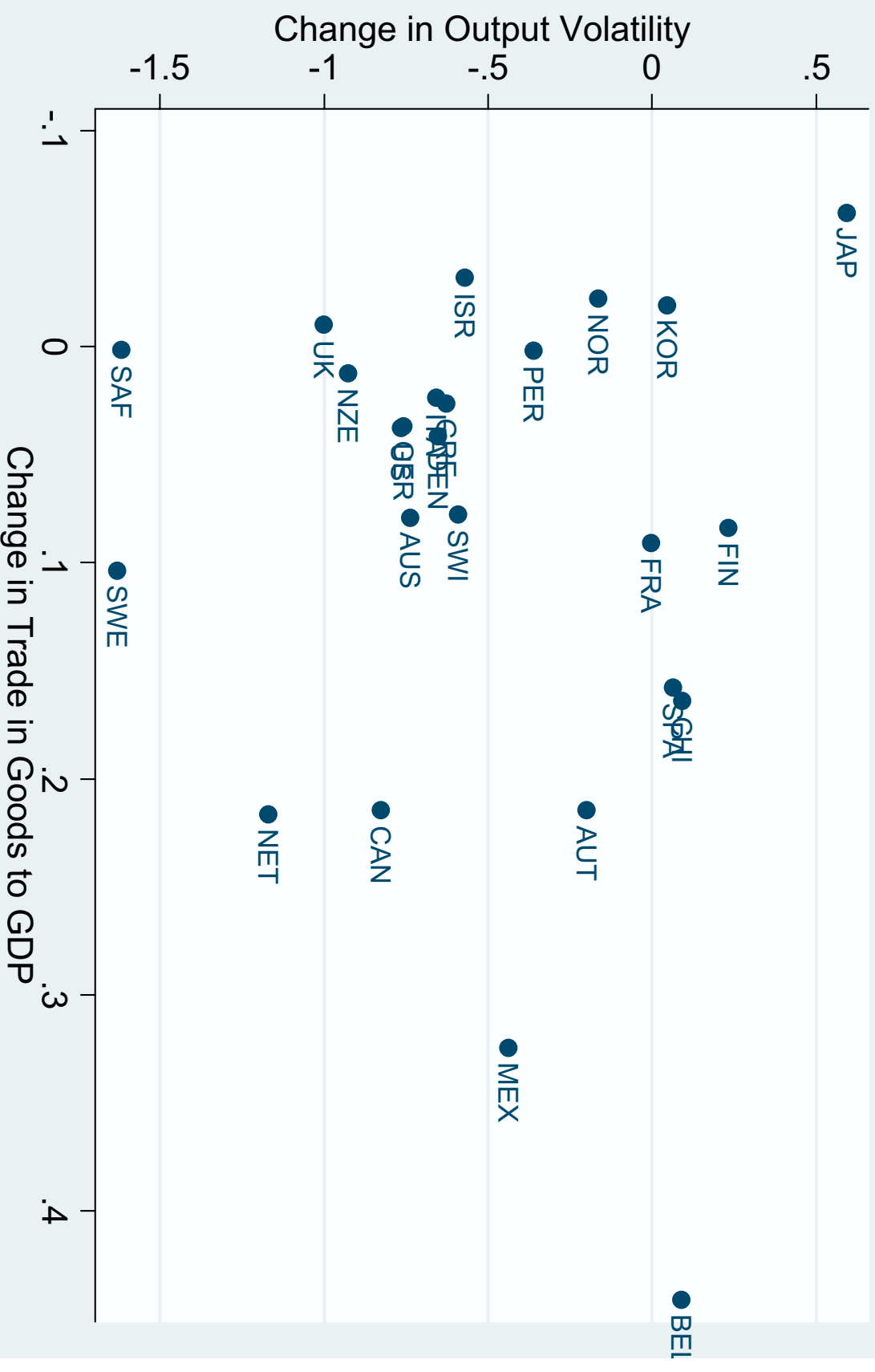
## 2. Contribution of CFK

- Previous studies have focused on US or G7 – CKF extend to OECD. CFK construct panel data on 25 countries, 1970 – 2004
- CFK adopt a break model – and find lots of breaks:
  - Close study of many of the countries suggests that the break approach doesn't generalize well – e.g. Germany (Blanchard and Simon (2001); SW (JEEA, 2005))
  - CFK's results don't hinge on the break approach
- CFK's empirical main finding:
  - Robust cross-country negative correlation between increases in consumer credit availability and output volatility

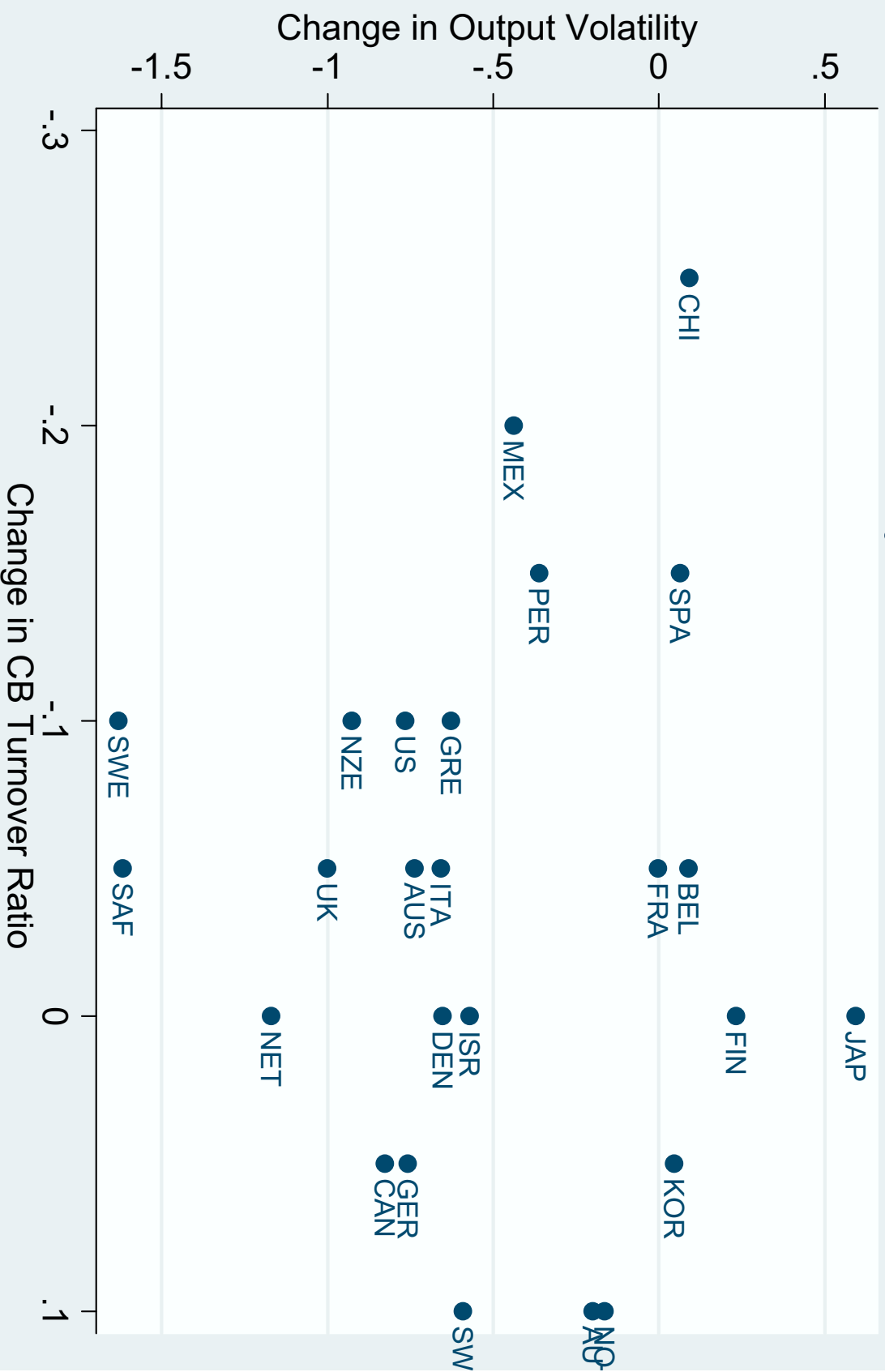
## Volatility and Private Credit to GDP



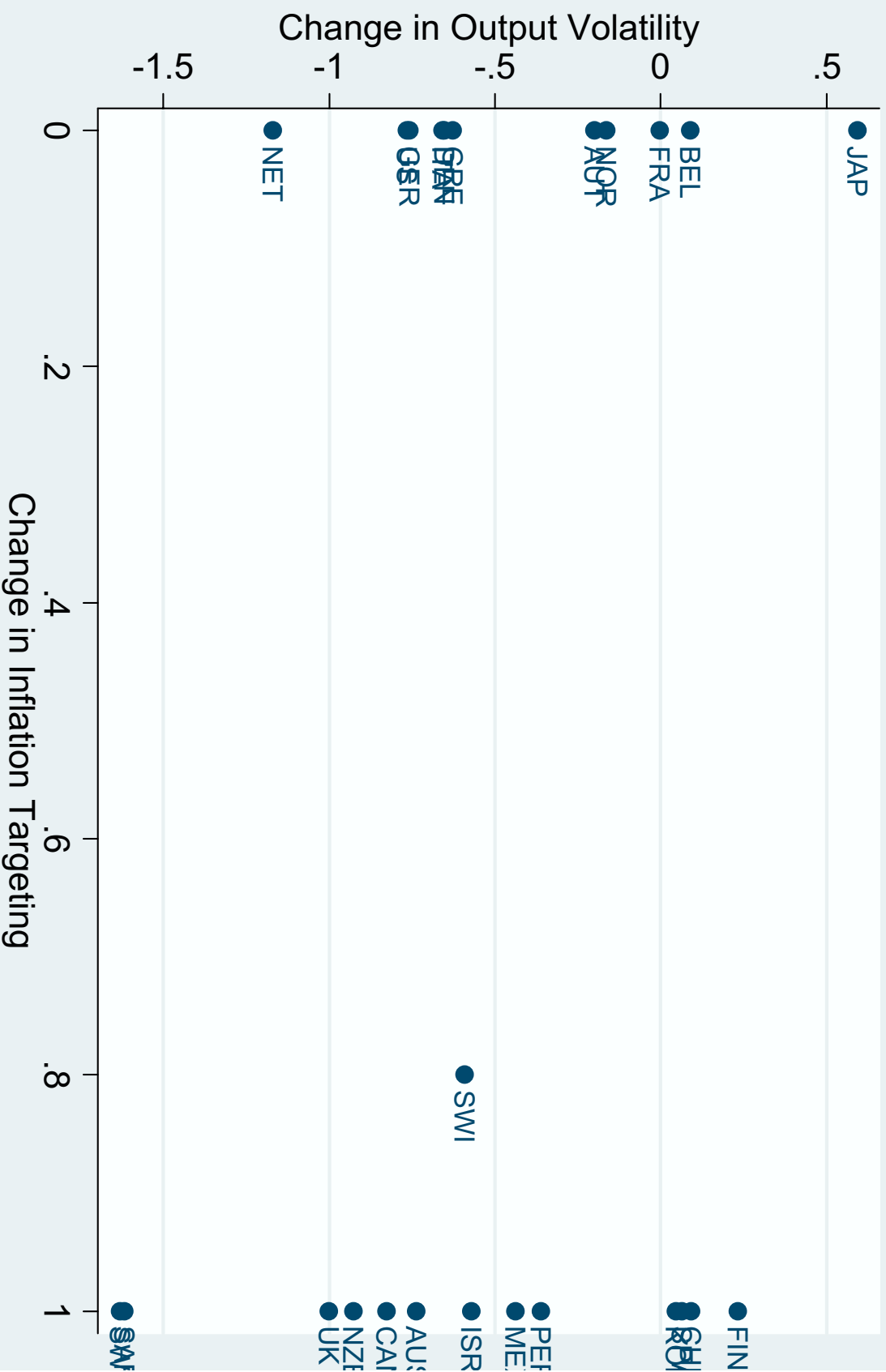
## Volatility and Trade in Goods to GDP



## Volatility and CB Turnover Ratio

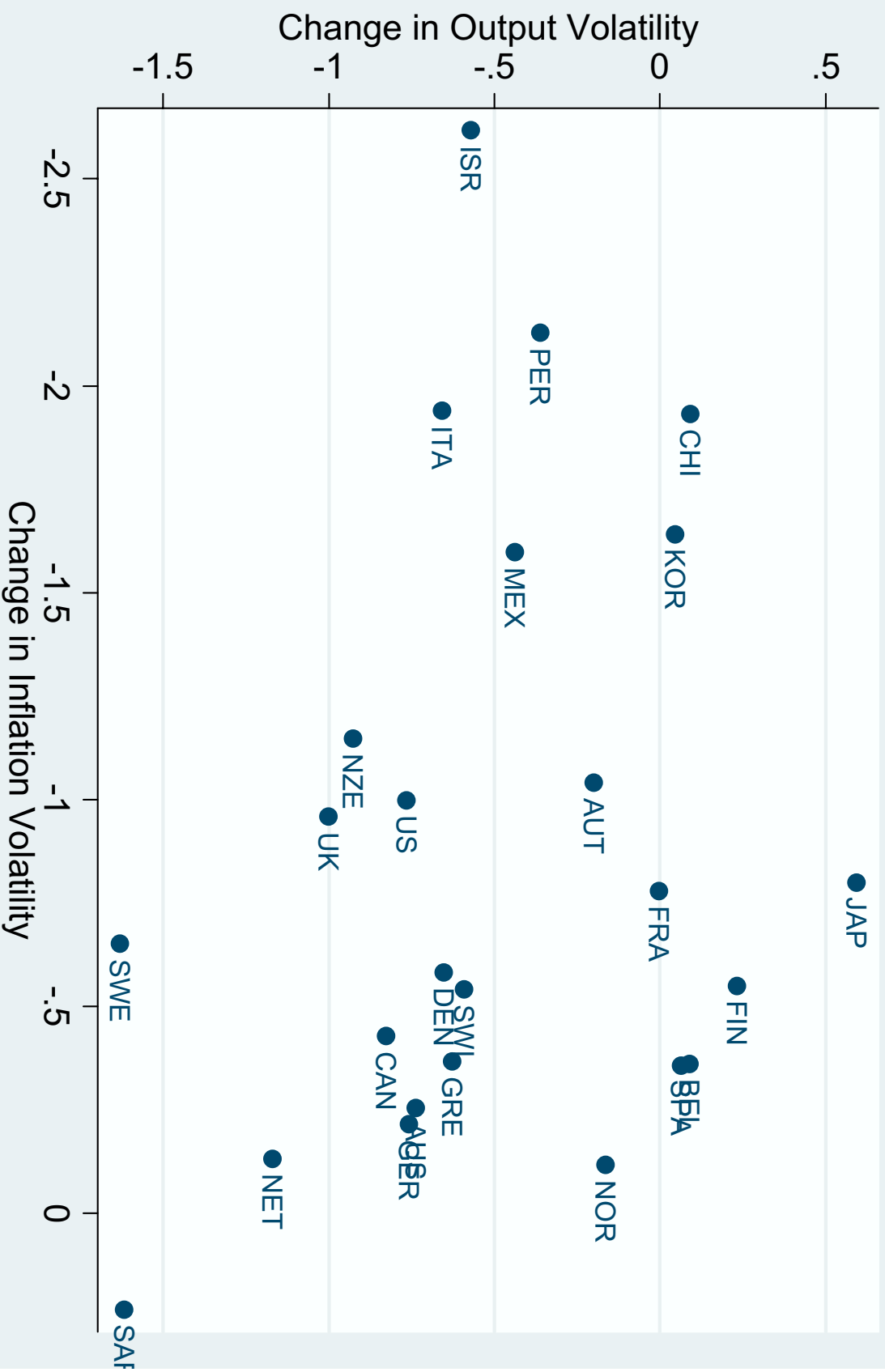


# Output Volatility and Inflation Targeting





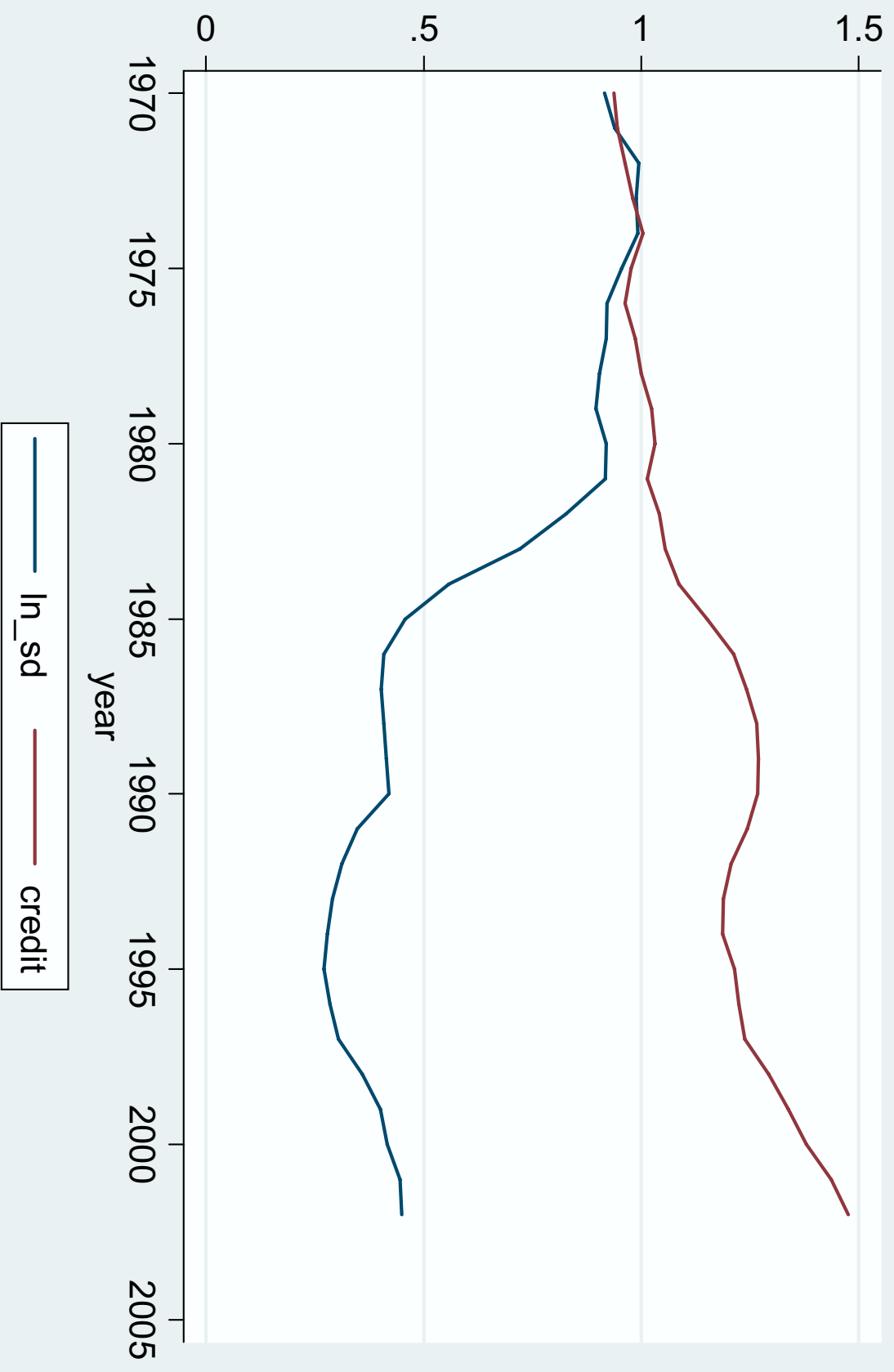
# Output Volatility and Inflation Volatility



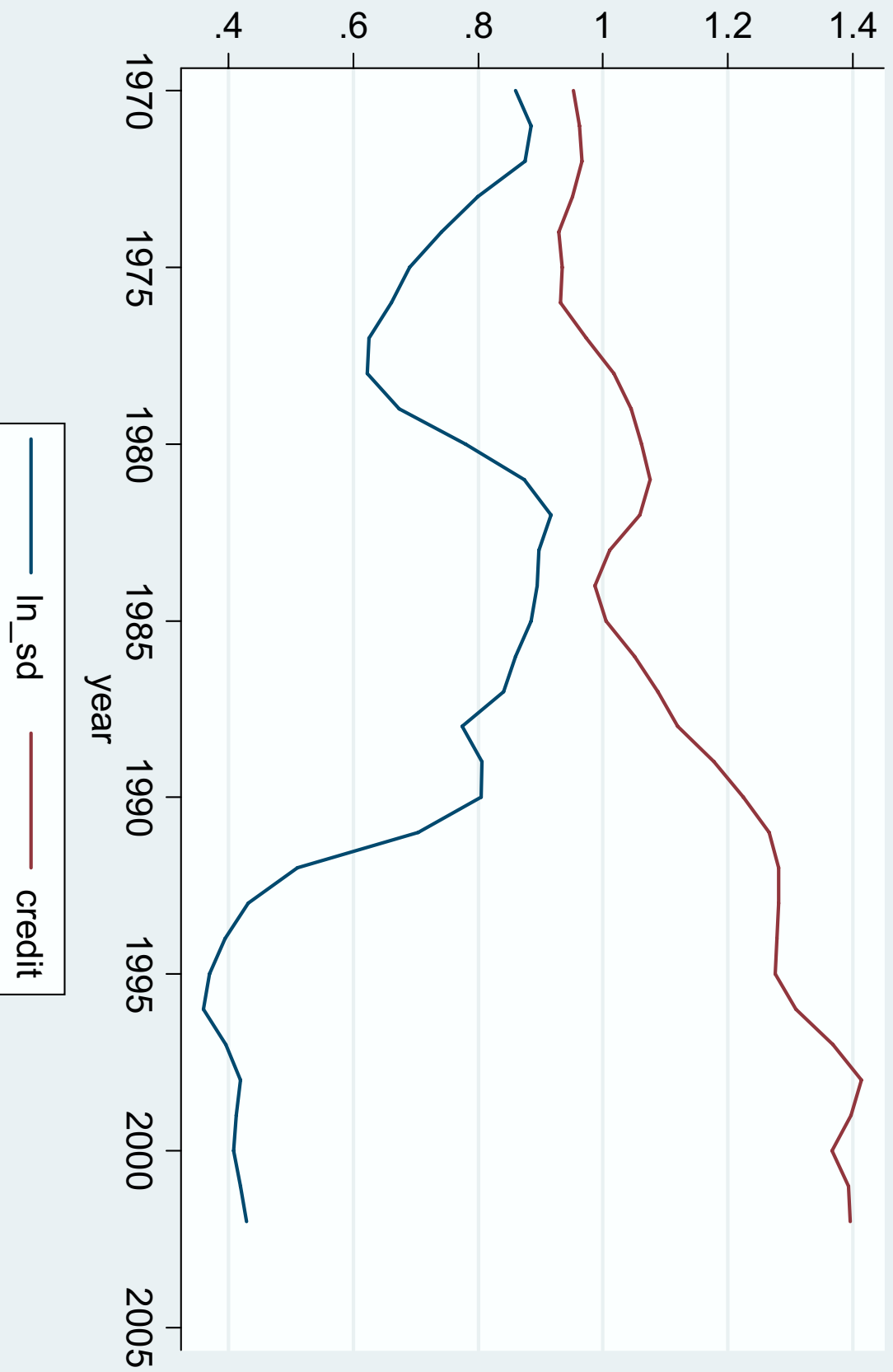
## Additional evidence using the CFK data:

- What does the time pattern of this relationship look like within countries?
- Some time series plots:
  - ln\_sd**: log of SW (2005) G7 time-varying standard deviation of 4-quarter output growth
  - credit**: CFK credit to GDP ratio

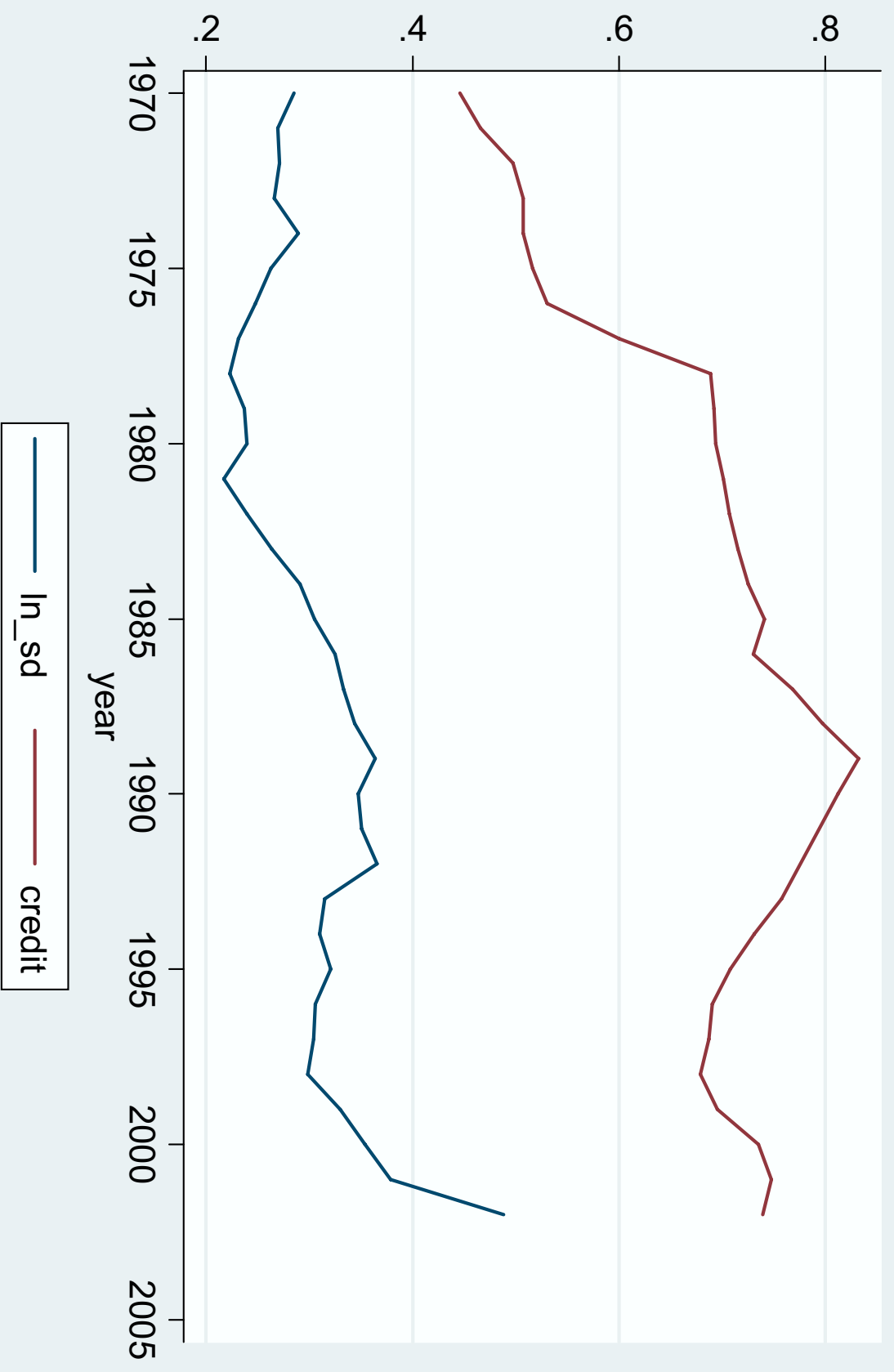
# U.S.



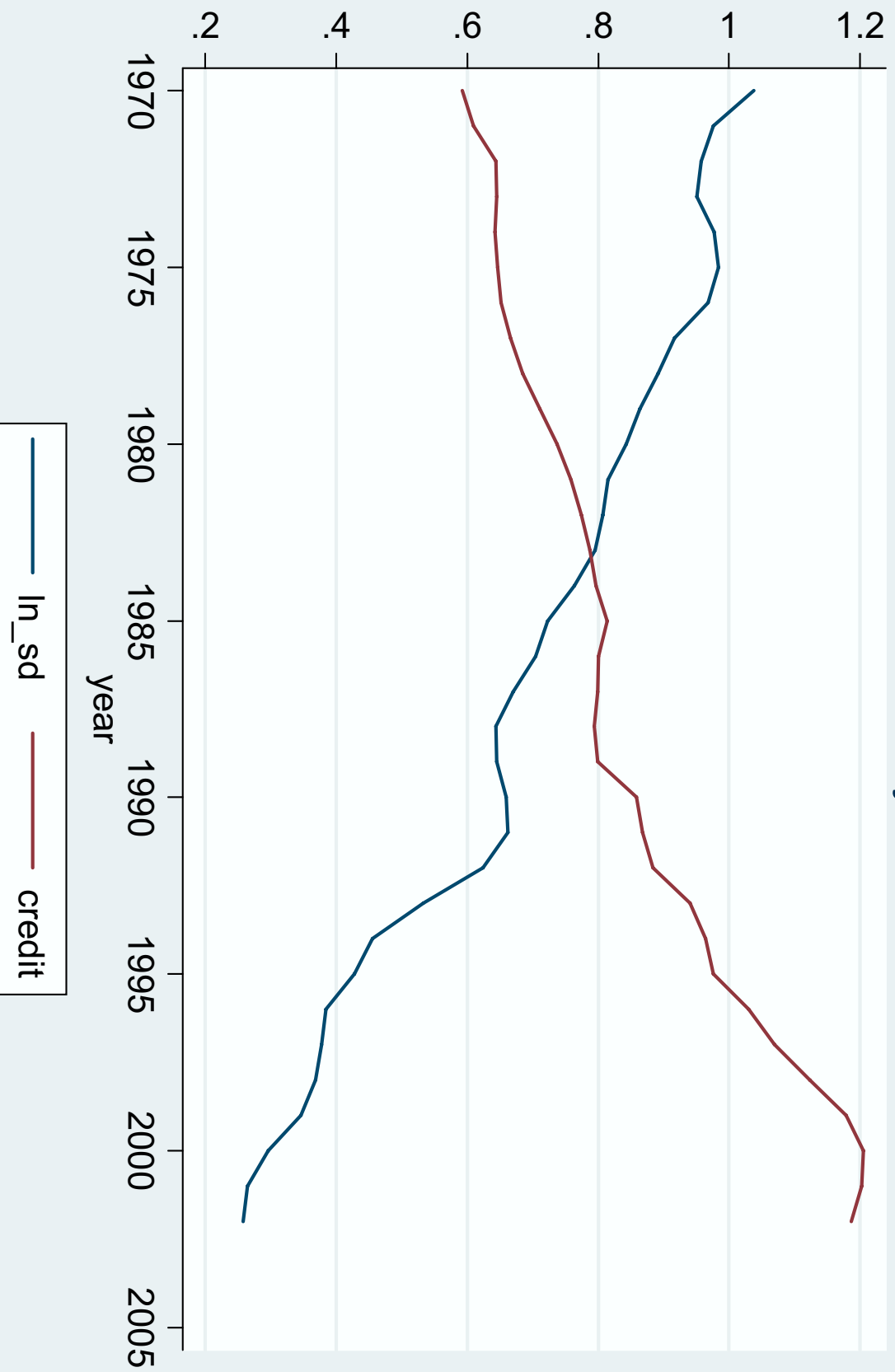
# Canada



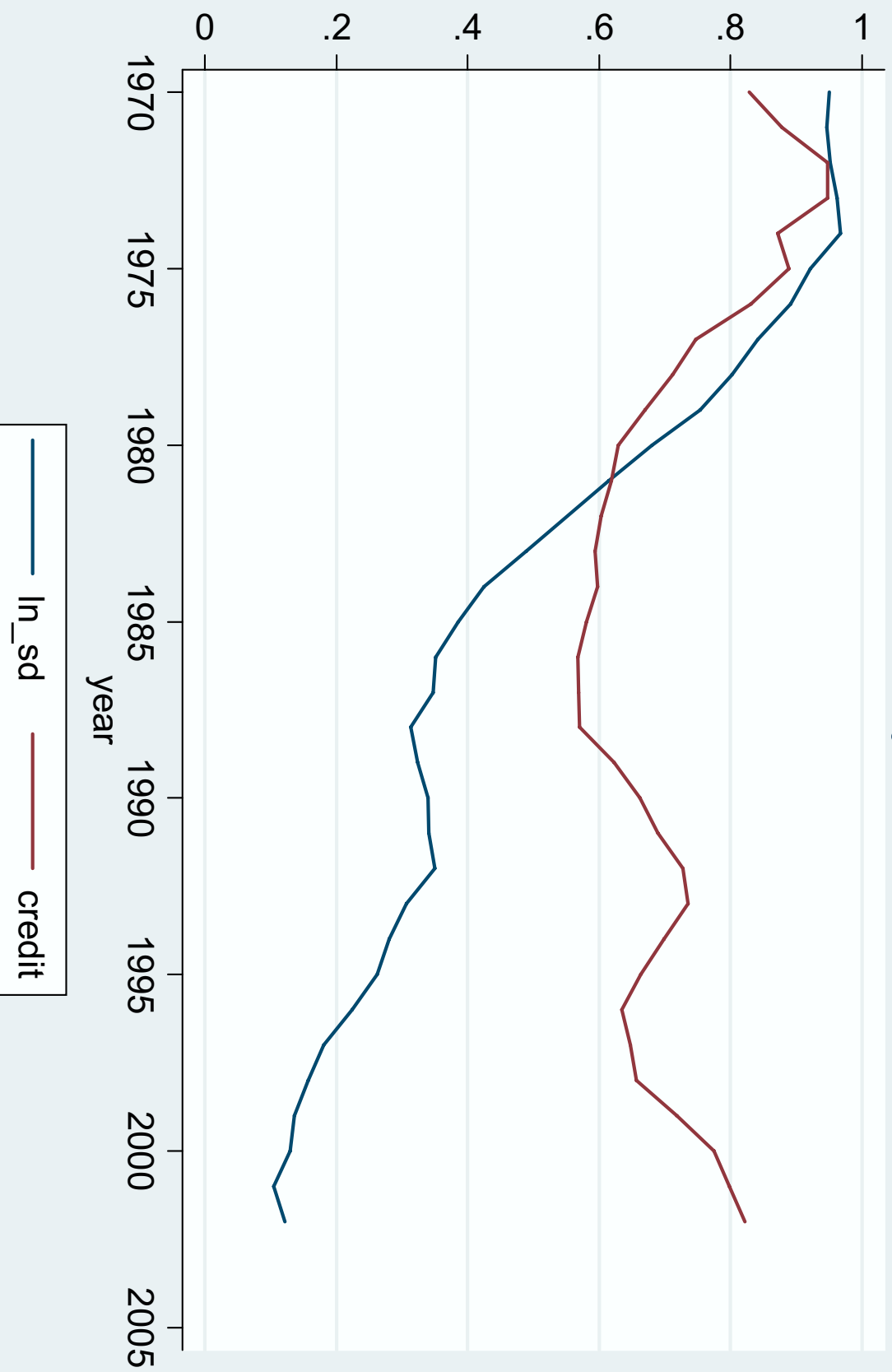
# France



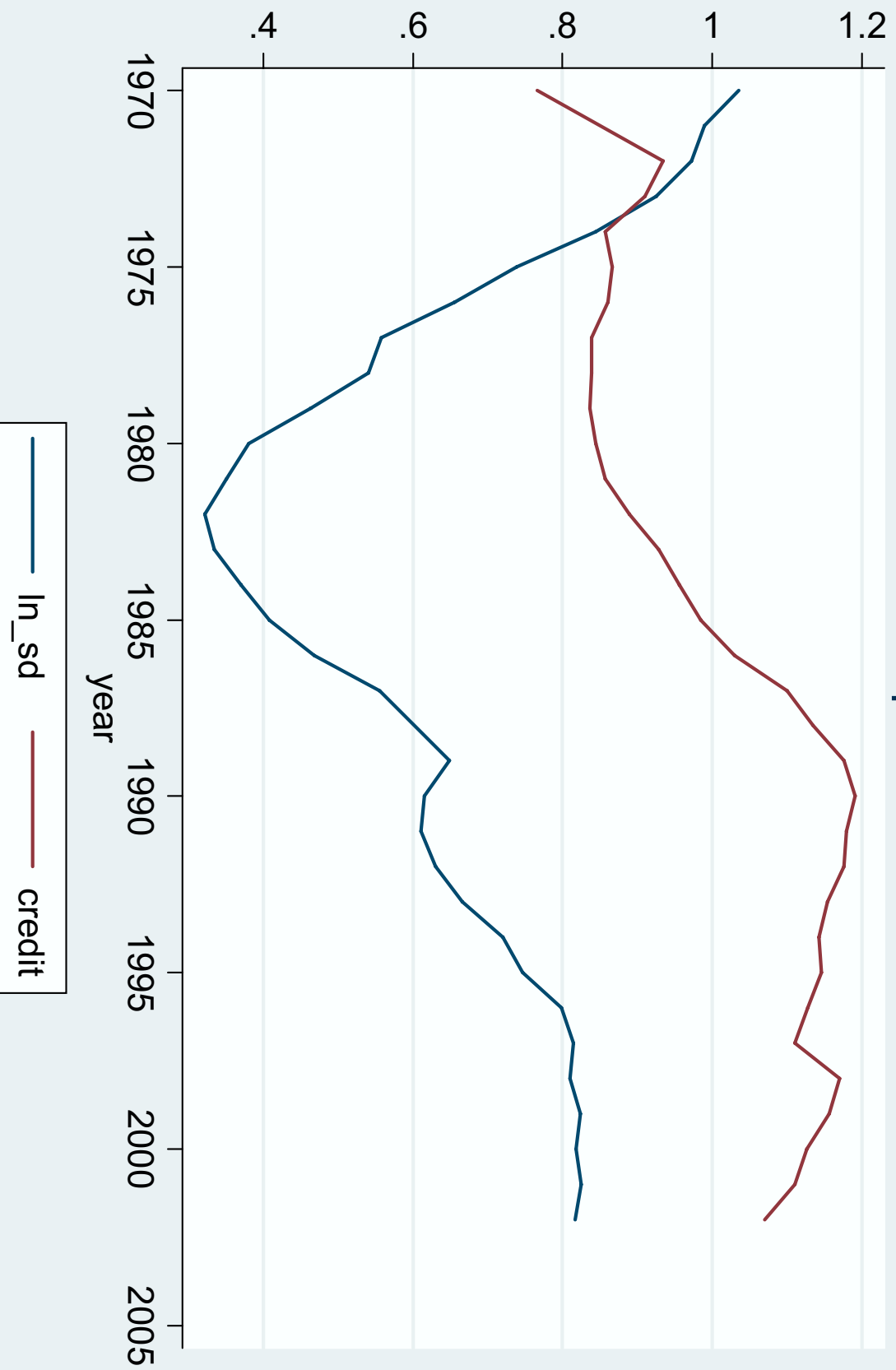
# Germany



# Italy

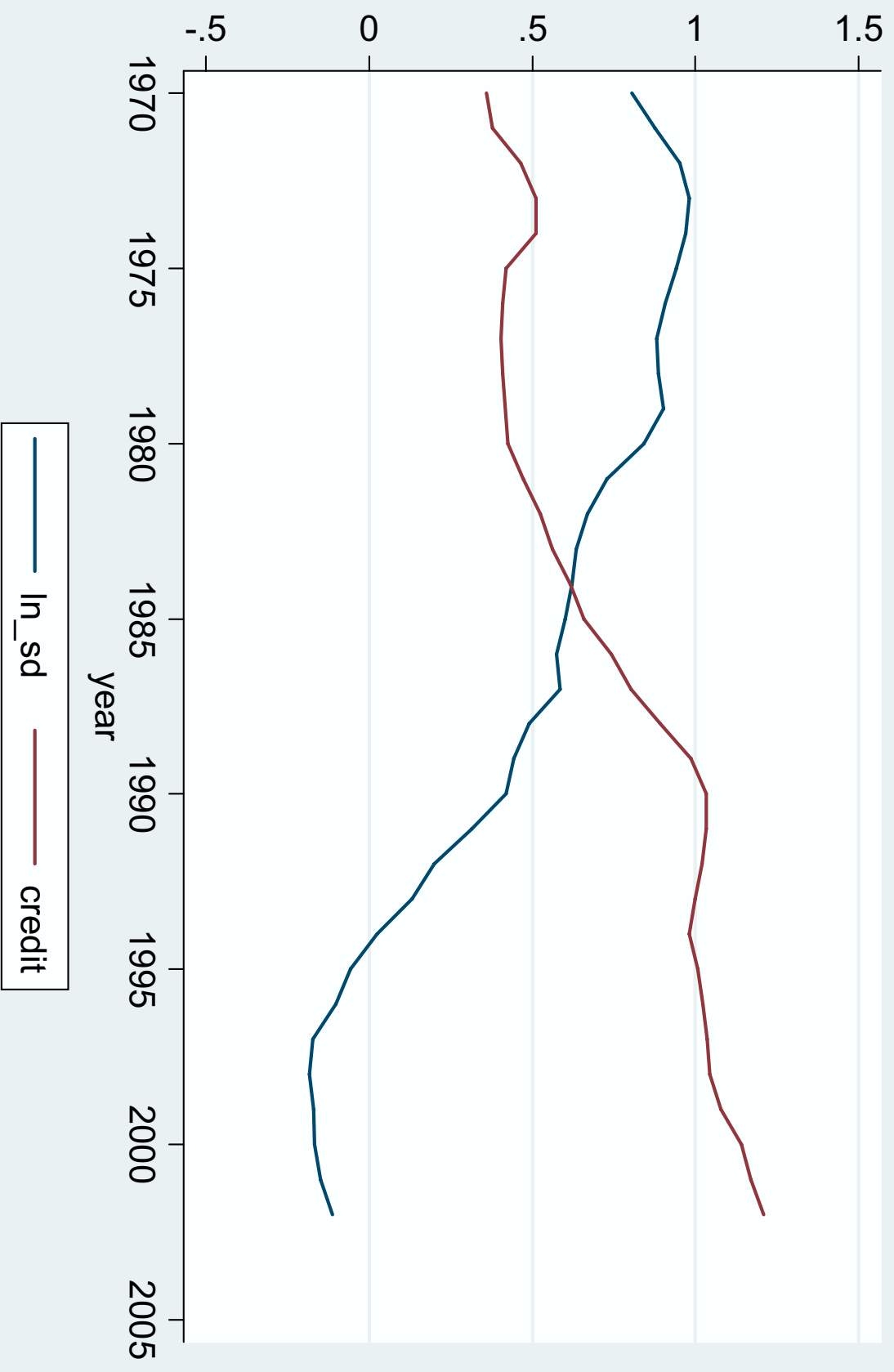


# Japan





U.K.



### **3. A Quick Spin Through the Recent Research: What Have We Learned?**

**A lot!**

**Pull together the most recent evidence on:**

- 1. Policy changes (monetary; fiscal)**
- 2. Structural changes (inventories; financial markets)**
- 3. Good luck**

## **(1) Policy Changes – monetary (forget fiscal)**

CFK cross-country evidence not very supportive of this view

Fundamentally need a macro model to answer this

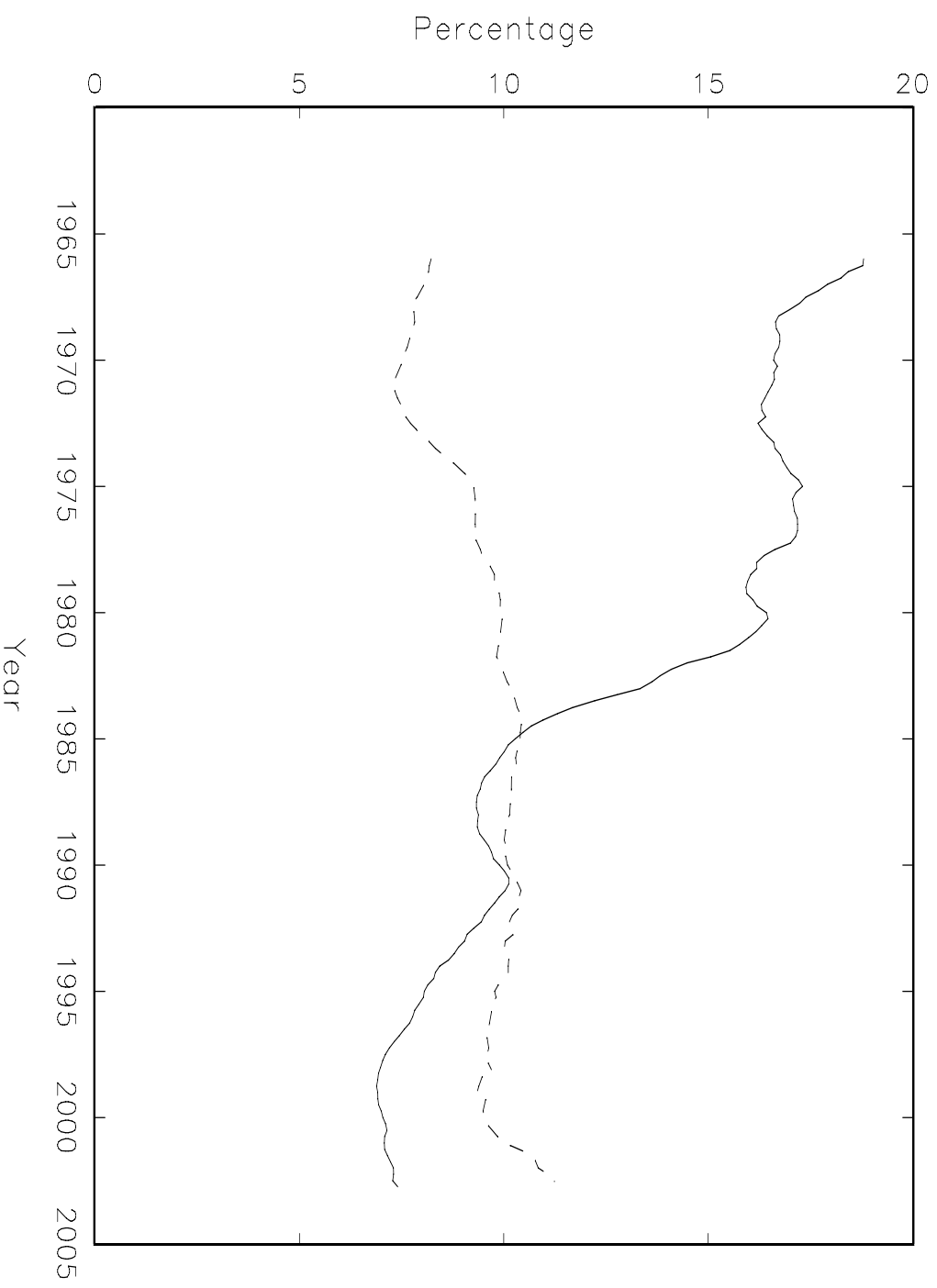
- Gordon (2005)
  - backward-looking AS-AD
- Boivin-Giannoni (2005)
  - small DSGE
- Justiniano-Primiceri (2005)
  - larger DSGE – Smets-Wouters descendant
- Main findings: monetary policy parameters just aren't that important – they can't account for the very large reductions in output volatility
  - caveat about BG preference parameters

## **(2a) Structural Changes: Financial market deregulation**

### *First, some empirical facts*

- The single biggest sector with volatility reduction is housing (SW (2002), Dynan et. al. (2005)).
- Declines in volatility in residential housing are not matched by declines in volatility in commercial structures (SW (2002))
- Residential construction has become much less sensitive to changes in interest rates Dynan, Elmendorf, Sichel (2005)

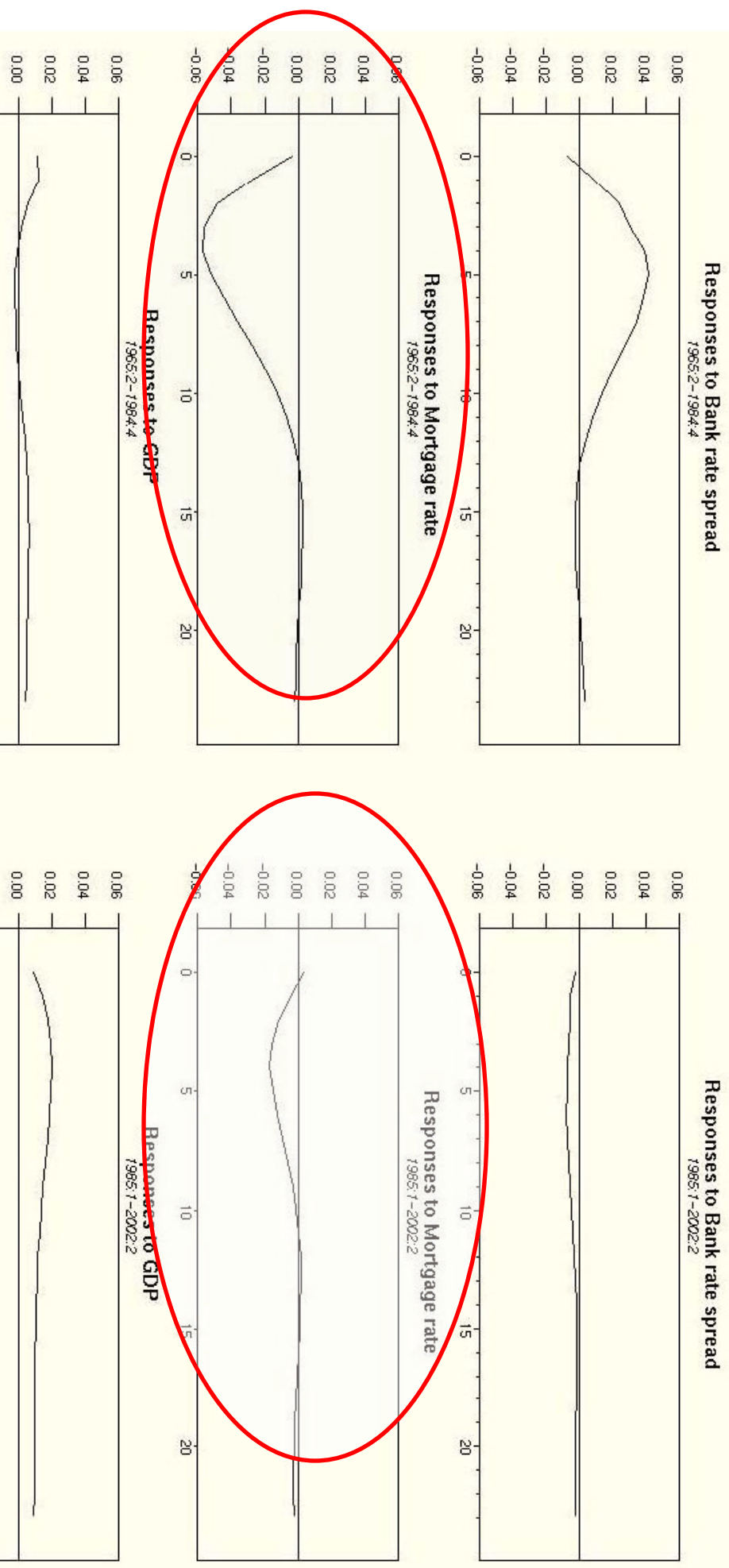
**Residential construction volatility (——) has declined, but nonresidential (- - - -) has not:**



**Source: SW (KC Fed/Jackson Hole, 2003)**

# Residential investment is less sensitive to mortgage rate...

Figure 11  
Responses of Residential Investment



1965 – 1984

1985-2002

Source: Dynan, Elmendorf, and Sichel (2005)

## **Financial market deregulation, ctd.**

The obvious smoking gun is financial disintermediation.

- Reg Q ends 1982
- Secondary mortgage market
- Second mortgages, refinancing, early prepayment...: housing becoming more like a financial asset

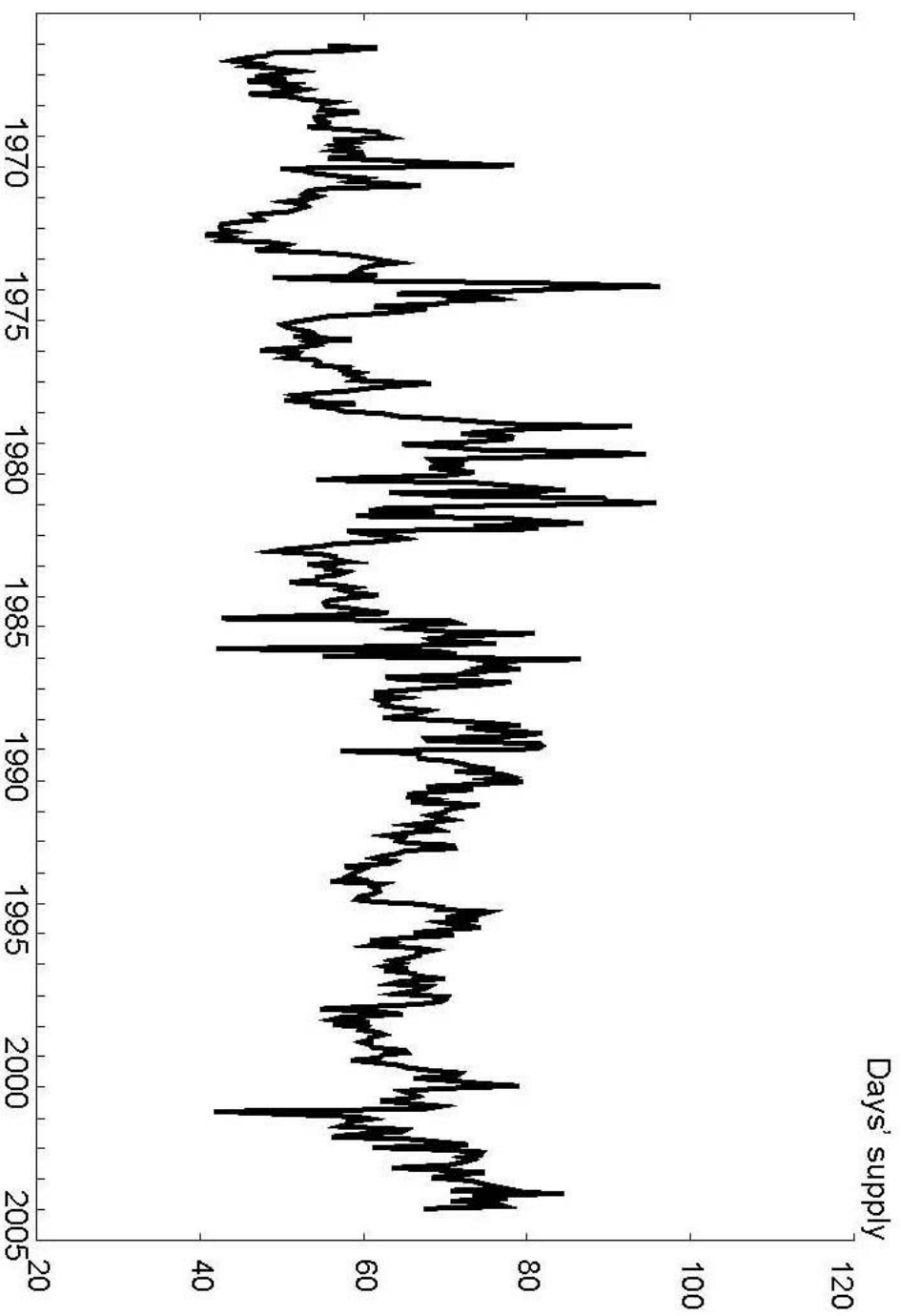
## **(2b) Structural Changes: Inventory management**

*First, some empirical fact:*

- production volatility has fallen relative to sales volatility:
  - at the quarterly frequency
  - but not at the annual frequency
  - This makes sense – JIT is high frequency
- Inventory-sales ratios haven't changed in lots of sectors – what does this mean about JIT?
  - Evidence: Autos, from Ramey and Vine (2005)



# Inventory/Sales ratio, U.S. domestic cars and light trucks



Source: Ramey and Vine (2005, Fig. 2)

## **Inventory management, ctd.**

*What have we learned from the recent literature?*

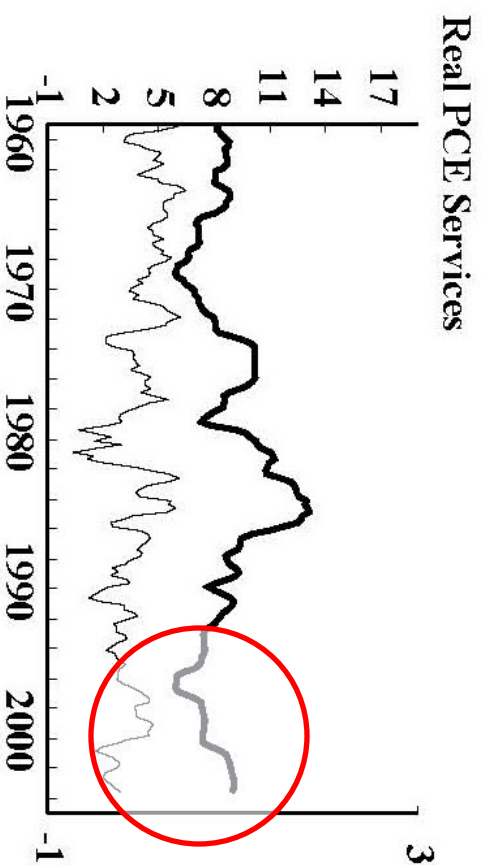
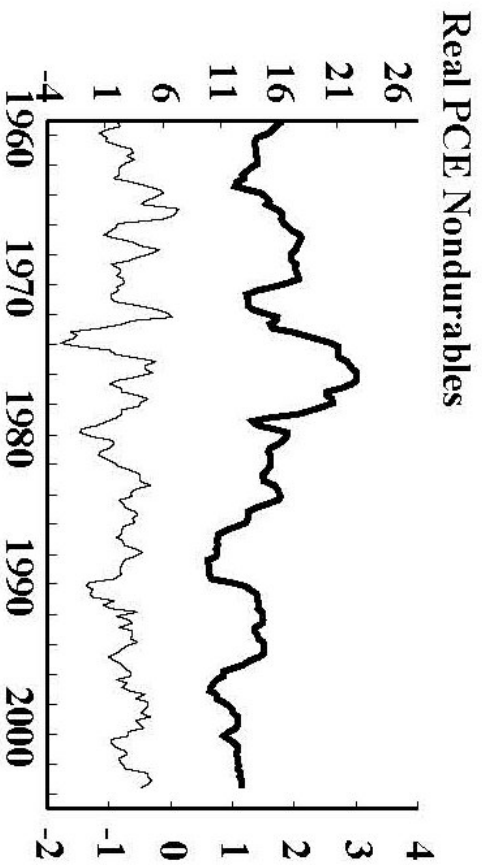
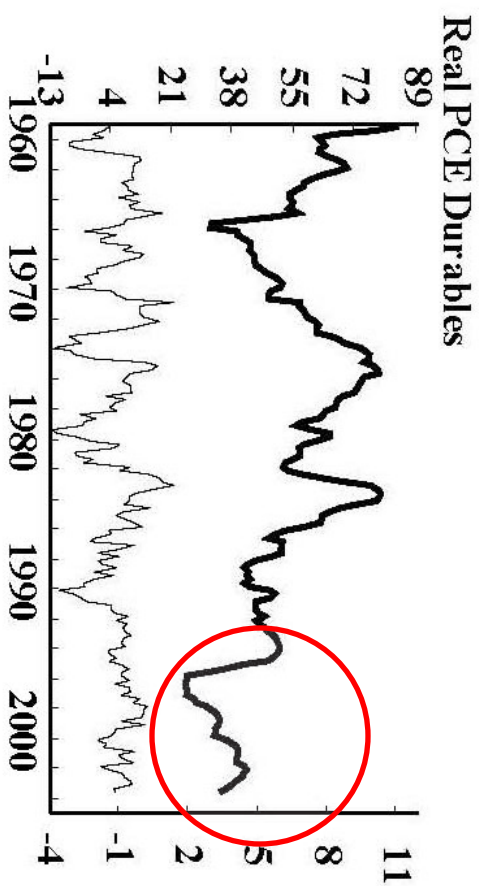
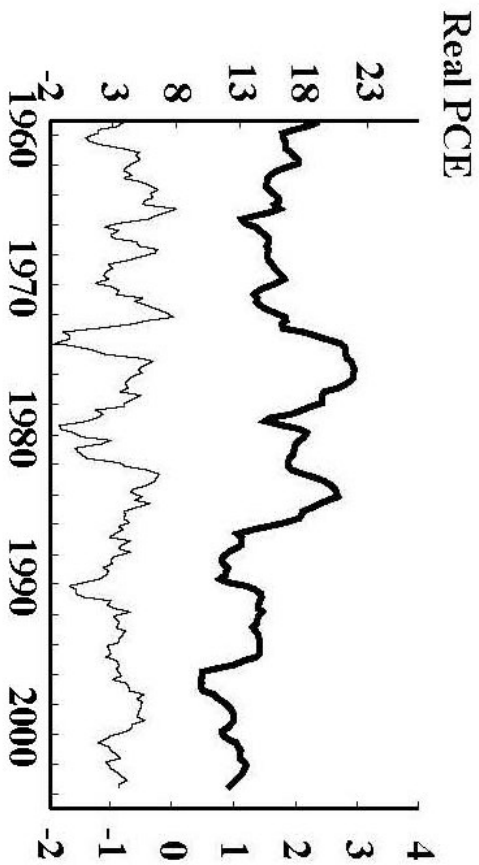
- Irvine and Schuh (2005)
  - Key source of production volatility reduction is autos
- Ramey-Vine (2005)
  - Auto production and sales volatility decreases can both be explained by decreasing persistence of sales
  - Finds that in fact sales are less persistent

## **A (highly speculative!) reinterpretation of the new in light of the financial market deregulation hypothesis**

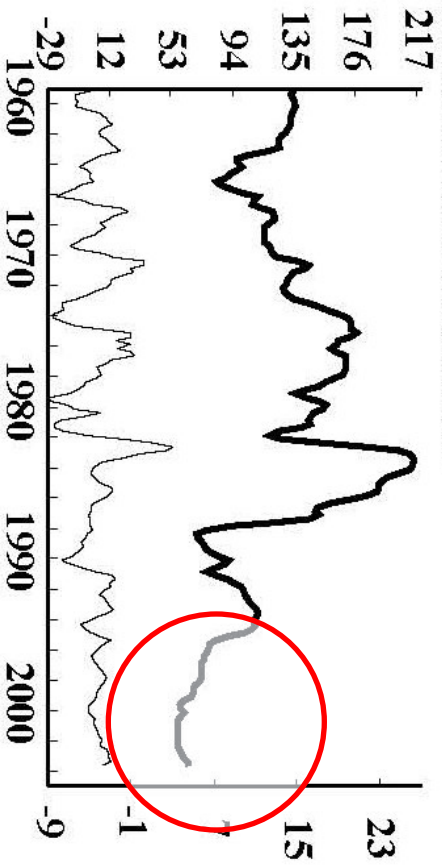
- Reduction in volatility in housing
- Decreased persistence in auto sales (thence, the production/sales facts)
- Big problem with the SW shocks story: we can't find the “smaller shocks” (not oil, not monetary shock, not...)!
- Boivin-Giannoni: Shocks, yes, but also changes in the intertemporal elasticity of substitution (!?!)
- Justiniano-Primiceri: Main output volatility reduction comes from shock to investment technology (!?!)
  - JP interpretation: this shock is a financial sector wedge (Chari-Kehoe-McGratten (2005))
- *But also bear in mind the “good luck” message...*

Figure 2  
Volatility of Selected Components of GDP

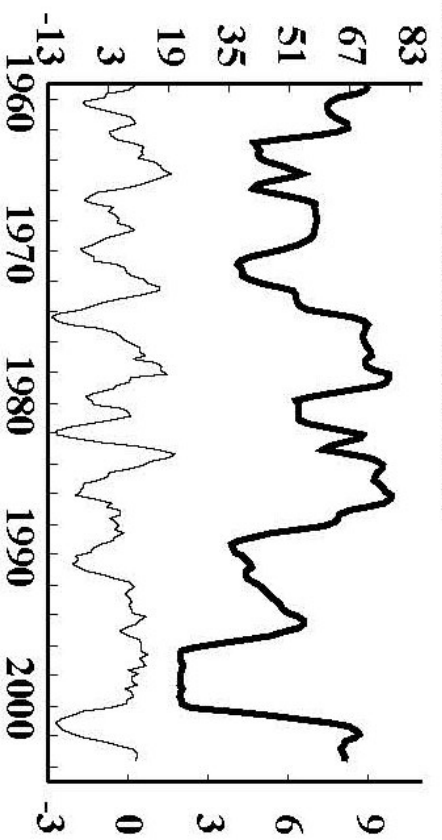
Thick line = 5-year trailing moving average of the standard deviation (right scale)



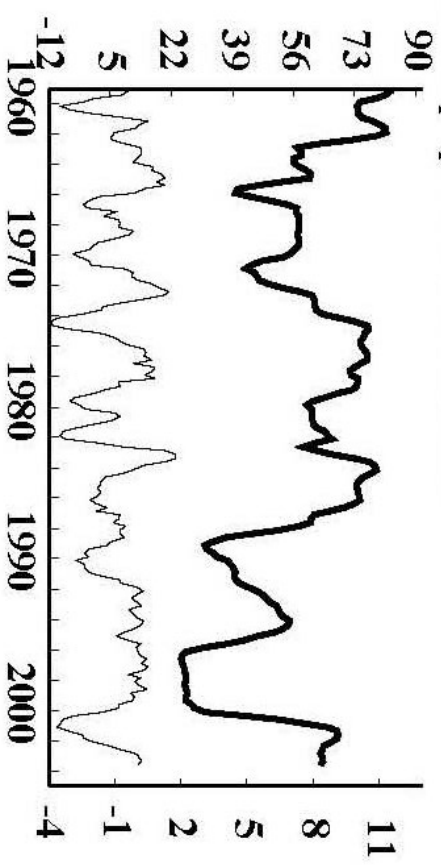
Real Residential Investment



Real Business Fixed Investment



Real Equipment and Software



Real Nonresidential Structures

