“Changes in Volatility of Economic Activity at the Micro and Macro Levels”

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I want to discuss two things in turn

**Background, results and suggestions**

International evidence
Why do we care about the Great Moderation?

Economists typically believe volatility is bad for welfare
  • For example, Ramey & Ramey (1995) show that output volatility has a large negative association with growth

The surprising result in the paper is that obvious mechanism for volatility to reduce growth – by lowering investment – does not seem to be the main driving force

One explanation could come from the micro-to-macro productivity growth literature (e.g. Foster, Haltiwanger & Krizan, 2004)
The cause of the Great Moderation is still in debate

The stylized fact is output volatility has fallen since mid 1980s
  • Blanchard and Simon (2001) suggest there has been a downward trend since the 1950s
  • Stock & Watson (2003) suggest there was a break around 1983/84

There are a wide number of suggested reasons, for example:
  • Better monetary policy
  • Compositional changes
  • Financial markets (mortgages, consumer credit, debt)
  • Demographics
  • Change in the cyclical behavior of productivity
  • Good luck

So it is a puzzle as to why there is any volatility left at all…
They present some interesting stylized facts (1/2)

1. The decline in output volatility is within broad sectors
   • In particular the shift to services explains $\approx 10\%$ of the fall

2. Durables account for the majority of this decline, because they account for the major share of overall volatility
They present some interesting stylized facts (2/2)

3 The decline in durables volatility occurs primarily in production rather than sales

4 This decline in durables volatility has been accompanied by a decline in order lead times for production materials
The paper builds a nice inventory control model to explain the fall in durables output volatility

Stylized idea is firms can predict future sales better and/or order inputs with less of a time lag

As a result production is less volatile – no large build-ups of unfilled orders to generate production spikes

Sales will also be slightly less volatile – offsetting effects occur (can respond to sales shocks more easily, but sales is less affected by stock-out shocks), with net effect mildly negative
Suggestions (1/3): It would be good to see more robustness on the durables story

The current paper, like Blanchard & Simon (2001), looks at 1-quarter growth rates: $\log(x(t)/x(t-1))$

Other papers, such as Stock & Watson (2003), look at 4-quarter growth rates: $\log(x(t)/x(t-4))$

The difference does matter in this case

NIPA 1-quarter growth rates of durables are correlated with their lagged value at -0.12, while non-durables, services & structures are correlated at 0.19, 0.30 and 0.36 respectively
Suggestions (2/3): It would be good to see more micro evidence for the inventory story of durables

An alternative explanation could be a shift across consumer durables towards products with lower production volatility
  • Like to see trends within more narrow sectors

The model also has cross-sectional implications – if firms vary in their ability to implement Just-in-Time technology, then will see cross-sectional correlations in a range of factors, including:
  • Production volatility & sales volatility
  • Inventory levels and production response lag to sales changes
Suggestions (3/3): It would be good to see more evidence for the order-lag story of inventories

Another (linked) explanation is firms using modern manufacturing techniques are more flexible across products
  • Switching production across narrow product lines reduces the impact of demand shocks variance on production

Alternatively, Just-in-Time techniques have shifted volatile production & inventories components upstream out of durables
  • Volatility now realized in other sectors and abroad

Or, as Ramey & Vine (2004) show for automobiles it may be the interaction of less persistent sales shocks and non-convex production costs
Background, results and suggestions

International evidence
Countries have different GDP volatility time profiles

Source: Jaimovich and Siu (2007)
Countries have different GDP volatility time profiles

GDP volatility (standard deviation around HP trend, over 40 quarter moving average window, 1963-99)

Source: Jaimovich and Siu (2007)
Demographics appears to explain about 1/3 of this GDP volatility (standard deviation around HP trend, over 40 quarter moving average window, 1963-99)

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Conclusion

Paper is working on a fascinating and important topic

Has contributed some interesting stylized facts to help understand the Great Moderation, and a neat model for thinking about these

I look forward to seeing this fleshed out with more micro data