Discussion of:
Stock Market's Assessment of Monetary Policy Transmission: The Cash Flow Effect

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The authors study stock market reaction to monetary policy shocks at the level of individual firms' equity prices, which reflects stock market participants' beliefs about monetary policy's effects on the performances of different firms.

Firms fixed rate liabilities are, in a net present value sense, lowered by higher interest rates and future cash flows are unchanged.

However, for floating rate liabilities, net present value is either unchanged or mildly lower, but future cash flow obligations *increase* with higher interest rates.

Hence firms' future cash flow exposure changes based on the amount and maturity of floating rate liabilities on their balance sheets (and whether these liabilities are hedged).

In this paper:

As higher interest rates increase cash outflows, firms with more floating rate cash flow exposure should be more adversely affected by higher interest rates.

The authors test whether stock market participants think so by studying firm level equity price changes in response to monetary policy surprises as a function of the change in firms' cash flow obligations.

They find that stock prices of firms that have more cash flow exposure are more sensitive to monetary policy shocks, offering a glimpse of what lies behind Bernanke and Gertler's (1995) "black box" of the monetary policy transmission channel.

In this paper the authors:

$$\Delta p_{it} = \beta_0 + \beta_1 target_t + \beta_2 path_t + \beta_3 hedge_{it} + \beta_4 leverage_{it} + \beta_5 exposure_{it}$$

$$+\beta_6 target_t * hedge_{it} * leverage_{it} + \beta_7 path_t * hedge_{it} * leverage_{it}$$

$$+\beta_8 target_t * hedge_{it} * exposure_{it} + \beta_9 path_t * hedge_{it} * exposure_{it}$$

$$+\lambda_1 target_t * controls_{it} + \lambda_2 path_t * controls_{it}$$

$$+uninteracted\ terms\ and\ first\ order\ interaction\ terms + \varepsilon_{it}\ (1)$$

where *i* is the firm subscript, *t* is the FOMC announcement subscript, Δp is the two-day stock return around the FOMC announcement, *target* is the target shock, *path* is the path shock, *hedge* is the hedging indicator which is equal to one if the firm hedges against interest rate risks, *leverage* is the floating rate debt leverage measure, and *exposure* is the floating rate debt exposure measure. *Controls* includes size, profitability, book leverage ratio, and market to book ratio.

There are five issues that I would like to discuss:

1. Is it a 2-day windows too large?

2. What is the hedging indicator capturing?

3. Should you exclude financial institutions?

4. How do you reconcile your results with the growing evidence on the asymmetric effects of monetary policy shocks?

5. Is the cash flow effect dominant in aggregate?

Discussion: Is it a two-day windows too large?

The authors chose a 2-day change in asset price returns around the FOMC announcement as dependent variable.

The idea is that in those two days the only important event/macroeconomic release is related to monetary policy, and therefore the identification assumption is that the change in stock price is due only to the FOMC announcement.

However, if we consider the sample January 2004 to September 2014 there are 93 FOMC decisions, but there are the following releases as well:

Discussion: Is it a two-day windows too long?

Releases	# of events		Releases	# of events
Advance Retail Sales	10		Monetary Policy Surprise	93
Business Inventories	10		New Home Sales	11
Capacity Utilization	3		Personal Income	14
Consumer Confidence	2		Personal Spending	14
Consumer Credit	1		Philadelphia Fed.	12
Consumer Price Index (MoM)	11		PPI Ex Food & Energy (MoM)	13
CPI Ex Food & Energy (MoM)	11		Producer Price Index (MoM)	13
Domestic Vehicle Sales	12		Retail Sales Less Autos	12
Durable Goods Orders	13		Trade Balance	11
Employment Cost Index	11		Wholesale Inventories	16
Factory Orders	6		GDP Annualized QoQ A	8
Housing Starts	14		GDP Annualized QoQ T	5
Import Price Index (MoM)	11		GDP Price Index A	8
Industrial Production	3		GDP Price Index T	5
Initial Jobless Claims	57		Nonfarm Productivity P	11
ISM Manufacturing	11		Unit Labor Costs P	11
ISM Non-Manf. Composite	7		U. of Michigan Confidence P	3
Leading Indicators	14		U. of Michigan Confidence F	3

Should you control at least for Initial Jobless Claims? For example, as in Altavilla and Giannone (2017)?

(They are released every Thursday, i.e., the day after the FOMC announcement)

In Guerrieri and Modugno (2017) we analyze the impact of a large set of macroeconomic surprises on the *1-day* stock price returns of the largest U.S. banks.

In this event study regression, we find that the most important macroeconomic surprises, i.e., the ones with a coefficient statistically different from zero are:

Advance Retail Sales, Capacity Utilization, Change in Nonfarm Payrolls, Consumer Confidence, Consumer Price Index, Factory Orders, Housing Starts, Import Price Index, Industrial Production, *Initial Jobless Claims*, ISM Manufacturing, Leading Indicators, Monetary Policy Surprise, Personal Income, Personal Spending, Philadelphia Fed., PPI Ex Food & Energy, Producer Price Index, Retail Sales Less Autos, Trade Balance, GDP Annualized Adv.

The authors include an hedging indicator to compare the firms that hedge vs the ones that do not hedge against interest rate risk.

This indicator is constructed through searching on the SEC 10-K reports the following words: "*hedge interest rate*," "*hedge against interest rate*," "*interest rate swap*," or their variants.

However, this search method do not tell us anything about two important dimensions, at least:

1. *What is the coverage of the hedge?* For example, what is the notional principal amount of the swap contracts?

2. *Is the swap defensive or speculative?*

English, Van den Heuvel and Zakrajsek (2012) show that movements in interest rates affect bank profitability primarily through their impact on **net interest margins**.

An increase in short-term interest rates significantly boosts banks' net interest margins because most institutions fund some of their interest-earning assets with noninterest-bearing liabilities.

In an event study analysis, they find that the **negative reaction** of bank stock prices to monetary policy tightening is significantly **attenuated** for banks with assets whose repricing time or maturity exceed that of their liabilities - that is, institutions that engage more heavily in **maturity transformation**.

However, monetary policy tightening is also associated with significantly slower growth of the size of bank balance sheets primarily due to an **outflow of core deposits**.

In combination with the fact that rising long-term interest rates lead to immediate capital losses on longer-term assets, these effects may **offset the positive impact** on net interest margin and therefore cause a decline in bank stock price returns.

Therefore, monetary policy shocks may affect financial institutions stock price returns through **different channels** that may **attenuate** your findings and therefore you may have stronger results excluding them.

Discussion: asymmetric effects of monetary policy shocks?

There is a growing literature stressing the asymmetric effects of monetary policy shocks:

Cover (1992), Gaffeo et al. (2014), Barnichon and Matthes (2016), among others, show that contractionary monetary shocks have a stronger effect on real activity than expansionary shocks.

One explanation may be related to the behavior of lenders and borrowers. When the Fed raises its policy rates, market rates tend to rise accordingly. One might expect that banks would simply pass these higher rates on to their borrowers. While this is true to an extent, raising loan rates too high could increase the likelihood that risky borrowers default. As a result, banks may choose to ration credit.

On the other hand, expansionary policy will not necessarily increase borrowing and spending if economic conditions have reduced demand. Unlike tight monetary policy, it is not a binding constraint on consumers.

There is a growing literature stressing the asymmetric effects of monetary policy shocks:

Aikman et al. (2016), Tenreyro and Thwaites (2016), Lo and Piger (2005) and Weise (1999) find evidence that the impact of monetary policy depends chiefly on the state of the economy.

On the contrary, the cash flow channel is a symmetric transmission mechanism for monetary policy:

Future cash flow obligations *increase/decrease* with higher/lower interest rates.

How much the cash flow effect matters for the monetary policy transmission channel?

As the authors state in the Introduction :

Firms **fixed rate liabilities** are, in a net present value sense, lowered by higher interest rates and **future cash flows are unchanged**.

However, for **floating rate liabilities**, net present value is either unchanged or mildly lower, but **future cash flow obligations increase with higher interest rates.**

Looking at Table 3 in the paper:

Table 3: Maturity/Interest Rate Type Pairs for Debts

	Not Available	Variable	Fixed	Zero Coupon	Total
0-1 Year	251	750	2,442	6	3,449
1-2 Years	1,586	1,496	4,974	10	8,066
2-5 Years	1,517	3,875	10,421	25	15,838
5-10 Years	1,121	1,860	12,620	28	15,629
10-15 Years	467	335	2,880	18	3,700
More than 15 Years	8,104	3,732	14,425	67	26,328
Total	13,046	12,048	47,762	154	73,010

If I am interpreting Table 3 correctly, and without considering hedging activity:

1. **16%** of the total debt has a *floating* interest rate.

2. **65%** of the total debt has a *fixed* interest rate.

Is 16% of debt enough to be the transmission mechanism trough which monetary policy affect the aggregate macro economy?

Conclusions

Five questions:

1. Is it a 2-day windows too large?

2. What is the hedging indicator capturing?

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5. Is the cash flow effect dominant in aggregate?