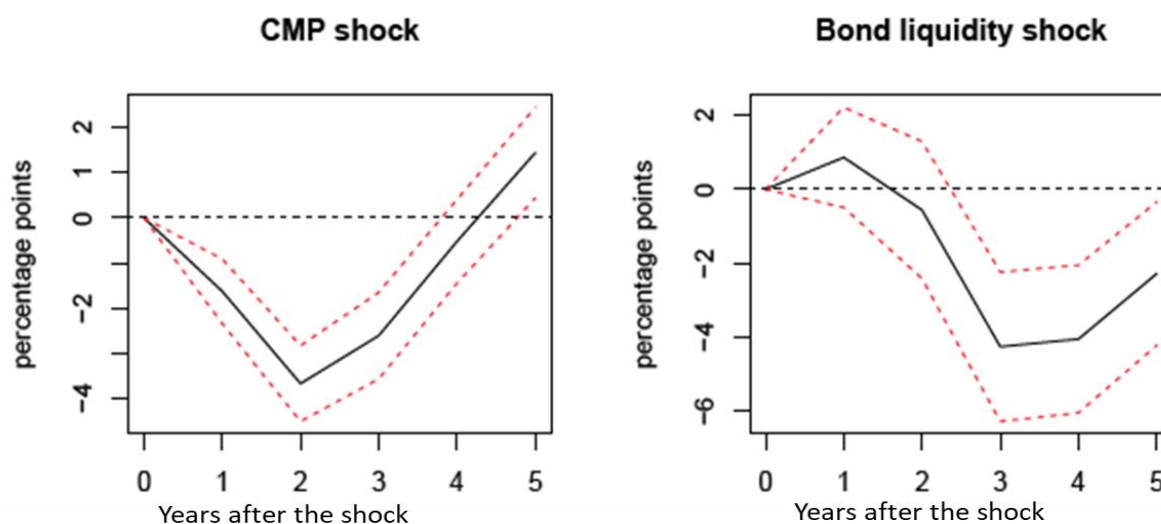


# Firms' debt structure matters for monetary policy transmission

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*ECB conventional monetary policy (CMP) and bond liquidity (BL) shocks affect French firms' investment. The strength of the impact depends on firms' debt structure: bank-reliant firms reduce investment relatively more after interest rates hikes than after contractionary bond liquidity shocks.*

*Chart 1: Average response of investment to CMP and BL shocks*



Source: [Alder et al. 2023](#)

*Note: Average response of French firms' investment to conventional monetary policy and bond liquidity restrictive shocks. Red dotted lines correspond to 95% confidence intervals.*

Since the 2008 Global Financial Crisis, firms' funding patterns have changed. Notably, there has been a significant shift toward more market-based finance with active issuances of debt securities by non-financial corporations (NFC) (Darmouni and Papoutsis, 2022). In the euro area, the share of bond financing rose from 9% in 2007 to 17% in 2021, while in France it increased from 19% to 29% over the same period. In a [recent study \(Alder et al. 2023\)](#), we use firm-level data to investigate the quantitative implications of firms' debt structure on the transmission of monetary policy to investment.

## ECB interest rate policy and bond liquidity shocks

According to the bank lending channel, policy rate increases lead to more restrictive bank credit. In these circumstances, bond markets can provide an alternative to bank financing (Kashyap et al., 1993). If monetary tightening decreases the creation of bank loans, but

stimulates corporate bond issuance, then the effectiveness of monetary policy could be hampered.

The central bank can affect investment not only through interest rate policy, but also through liquidity conditions, as these can influence lending and borrowing decisions. We capture the liquidity effects of monetary policy shocks using movements in the French-German 10-year sovereign rate spread around ECB announcements, affected particularly by unconventional monetary policies. We show that this shock is significantly correlated with liquidity in bond markets, and label it Bond Liquidity (BL) shock.

Unconventional policy easing, such as asset purchases, can reduce risk premia on debt securities and stimulate corporate bond issuance more than bank lending. Thereby, interest rate policy and bond liquidity shocks can have different effects on NFC investment depending on firms' debt structure.

In what follows, we show the average effect of interest rate policy and BL shocks on French firms' investment, and the role of the corporate debt structure in monetary policy transmission.

### **ECB monetary policy impacts French firms' investment**

We examine the effect of monetary policy shocks using yearly, firm-level data on French companies from FIBEN, the Banque de France credit register. We use high frequency surprises around ECB announcements to identify monetary policy shocks. These surprises are based on changes in the risk-free yield for maturities of up to one year (CMP shock) and changes in the 10-year sovereign spread between French and German bonds (BL shock). To capture the time profile of the investment response, we use panel local projections (Jordà, 2005).

Chart 1 shows the impulse response function, i.e. at each horizon (from 1 to 5 years) of the estimated average firm-level effect in percentage points of a 100 basis point upward surprise for each shock on firm net investment rates. The CMP shock (left panel) has an economically and statistically significant negative effect in the first three years after the shock. The BL shock (right panel) is insignificant in the first two years but decreases French firms' investment starting from the third year after the shock.

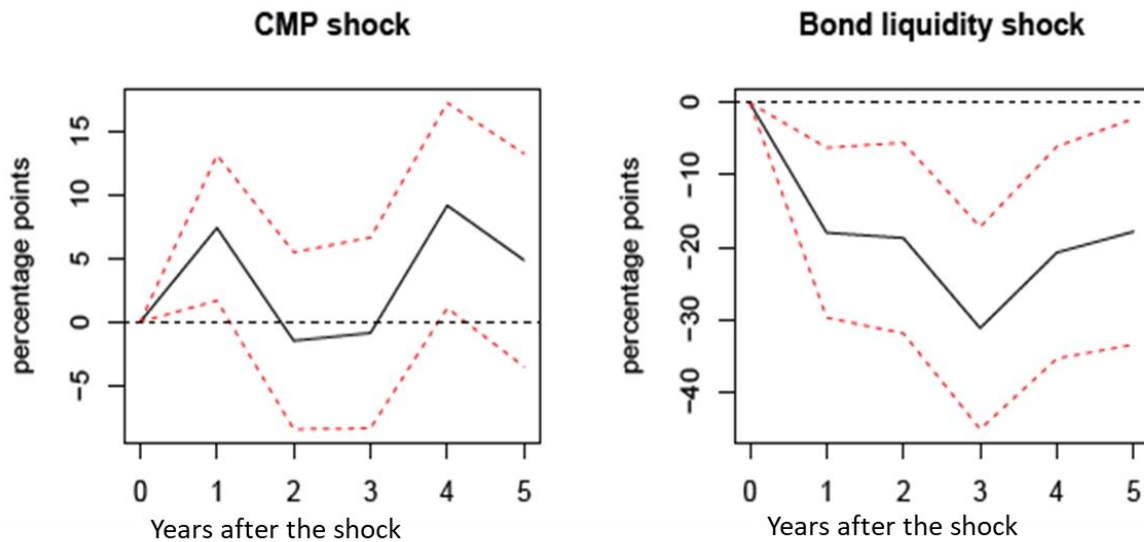
### **Corporate debt structure and monetary policy transmission**

To evaluate the role of the corporate debt structure, we interact monetary policy shocks with the firm's individual lagged share of bond debt, allowing the responses of firm investment to vary depending on their debt structure. Chart 2 shows the response for these interaction variables, where the point estimates can be interpreted as the difference in reaction of investment ratios between a firm that borrows using only corporate bonds and a firm that borrows only via bank loans. As the left-hand graph indicates, after a contractionary CMP shock, the higher the share of market debt of a firm, the less its investment falls. On the other hand, after a contractionary BL shock, the higher the market debt share of a firm, the more its investment falls.

Thus, monetary policy transmission to firm investment is a function of each firm's share of bond debt and the specific type of monetary policy implemented. Interest rate policy has a stronger impact on firm investment when the firm is more reliant on bank loans, while

monetary policies that increase liquidity in bond markets (such as quantitative easing) have a stronger effect when firm financing is more market-based.

*Chart 2: Relative response of investment to CMP and BL shock depending on firms' bond share*



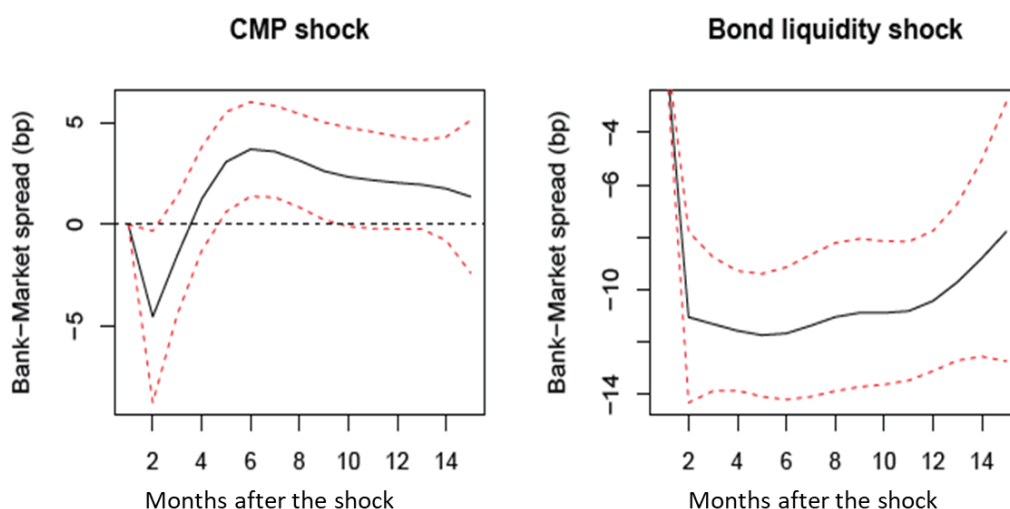
Source: [Alder et al. 2023](#)

*Note: Response of investment to CMP and BL shocks interacted with the lagged bond share. An increase means that firms relying more on bonds are affected less by the shock.*

### Investigating the channel

We explore the transmission channel in more detail using aggregate monthly data. In Chart 3, we show the response of bank-market spreads, defined as the difference between bank loan rates and yields on corporate bonds. As CMP contracts, the spread falls in the short run but quickly becomes persistently positive. The timing of the response is consistent with a narrative that the pass-through to bond market yields is faster than to bank rates ([Lane 2022](#)). The long run response confirms that CMP has a stronger pass-through to bank loan rates relative to bond yields ([Schnabel 2021](#)) and explains the greater drop in investment for firms more dependent on banks. The right-hand panel of Chart 3 shows that after a contractionary BL shock the relative cost of bonds compared to bank loans increases, indicating that the transmission of BL to funding costs is stronger for market debt. This is consistent with the higher investment reduction for firms relying more on bonds which we showed in Chart 2.

**Chart 3: Response of bank-market spread to CMP and BL shocks**

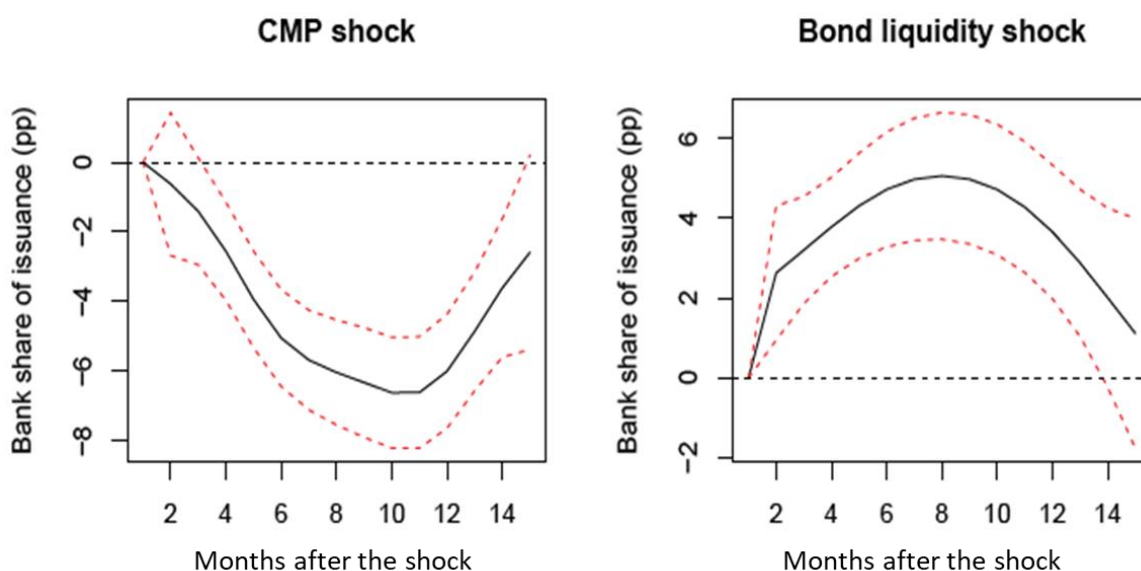


Source: [Alder et al. 2023](#)

Note: Response of bank-market spread to CMP and BL shocks (Smooth Local Projections, Barnichon and Brownlees, 2019). Red dotted lines: 95% confidence intervals.

Chart 4 shows that the response of the new issuance flows of loans and bonds is consistent with the result on prices. CMP shocks have a relatively stronger effect on the new issuance of bank credit, while BL shocks have a relatively stronger effect on the issuance of market debt.

**Chart 4: Response of bank share of new issuance to CMP and BL shocks**



Source: [Alder et al. 2023](#)

Note: Bank share of issuance: the ratio of new bank loans to the total new debt issued, i.e. bonds and loans. Smooth Local Projections (Barnichon and Brownlees, 2019). 95% confidence intervals in red.

The heterogeneous impact of monetary policy on firms' investment has important implications for monetary policy transmission. Investment of large NFCs with better access to capital markets could be more affected by quantitative tightening, while the investment of smaller, bank-dependent firms would decrease more after conventional tightening. When using a single tool, monetary policy can have uneven effects across different groups of firms, depending on which tool is used. On the upside, policy can be more targeted when there are specific issues with one type of funding.