

Banks as Patient Lenders : Evidence from a Tax Reform

by E. Carletti, F. De Marco, V. Ioannidou & E. Sette

Discussed by Mathias Lé (BdF)

Investment in the new monetary and financial environment

July 5th 2018

Summary

This paper uses a tax reform affecting the relative demand for bank's liabilities from households (HH) to assess :

- how the capital structure of banks changes ?
- how these changes in the capital structure affect the credit supply of banks ?

Practically, the authors estimate :

$$\Delta \log(Y_{bpt}) = \beta \cdot BB_p^{2009} \cdot Post_t + \alpha_p + \alpha_{bt} + \epsilon_{bpt}$$

- BB_p^{2009} is the market share of bonds held by HH in provinces p :
 - ▶ the larger the bonds base in p , the stronger the effect

$$\Delta \log(C_{bf}) = \gamma \cdot ExpBB_b^{2009} + Controls_{bf} + \alpha_f + \epsilon_{bf}$$

- $ExpBB_b^{2009} = \sum_p w_{bp}^{2009} \cdot BB_p^{2009}$ is the bank average of these market shares, weighted by the share of deposits held by b in province p :
 - ▶ the larger the bonds base in p and the larger the deposits base of b in p , the stronger the effect

Main results :

- *Bank capital structure :*
 - ▶ deposits (bonds) held by HH increase (decrease) after the reform :
 - the effect is magnified for *bond-dependent* and *riskier* banks
 - the effect is driven by term deposits (vs. demand deposits)
 - ▶ the sum of the two is unaffected : pass-through of 1
- *Credit supply :*
 - ▶ no general effect of the reform on the credit supply but an increase in the maturity of loans
 - ▶ however, they also find that :
 - risky firms received less credit
 - this effect is driven by banks having a large share of uninsured deposits and exerting market discipline

Comments and remarks

General comments

- The paper tackles an increasingly important issue :
 - ▶ how taxation may affect (i) the capital structure of bank, and consequently (ii) the provision of credit
- The paper is very interesting, it is well written, and the econometrics is well executed and convincing :
 - ▶ not an easy task to discuss this paper !
- Today, I will focus on two aspects of the paper :
 - ▶ the tax reforms
 - ▶ the nature and the timing of the expected effects
- I will conclude with few minors comments

Comments and remarks

The tax reforms

The changes in taxation under study has been voted in August 2011 and has affected the relative returns of bonds and deposits :

- harmonization of HH income taxes on these two instruments (20%)
- as a result, HH rebalanced their portfolio btw bonds and deposits and this affect the capital structure of banks

However, two other changes in the taxation of banks occured at the same time:

- in the same package of August 2011, an increase in the IRAP¹ on banks was voted
- in December 2011, in a emergency package, an *Allowance for Corporate Equity* of 3% was voted

¹This is a regional tax on production activities

Regarding the IRAP (Gambacorta *et al.*, 2017 WP) :

- introduced in 1998, flat rate tax levied on the value added, interest expenses are deductible
- regions can adjust tax rates since 2002, up to 0.92 pp
- it is levied on a regional basis
 - ▶ “*The IRAP tax base is allocated proportionally for different tax rates according to the proportions of deposits in different regions.*”

Regarding the ACE (IMF WP/14/6) :

- it aims at reducing the tax advantage of debt over equity
- this is a shock on the taxation of bank's income
- this could also induce a rebalancing in the capital structure of banks

How these simultaneous changes may affect your results?

- Regarding the IRAP, the larger the value added and the larger the rate, the larger the impact on the capital structure and the income of banks :
 - ▶ the intensity of this effect might be correlated with
$$ExpBB_b^{2009} = \sum_p w_{bp}^{2009} \cdot BB_p^{2009}$$
 - w_{bp}^{2009} can be correlated with bank b tax base in p (size)
 - regional variations in the rates can be correlated with BB_p^{2009} (less likely)
 - ▶ possible to use the fact that the effect is stronger for bonds maturing in 2012 :
 - redefined BB_p^{2009} as the share of bonds *maturing in 2012* in region p
- Regarding the ACE :
 - ▶ in provinces where HH trade a lot of bonds (high BB_p^{2009}), banks can be more aggressive to sell them equity shares to benefit from the ACE
 - ▶ substitution bonds/equity vs. bonds/deposits
 - ▶ this effect should mitigate your findings : your estimate are conservative

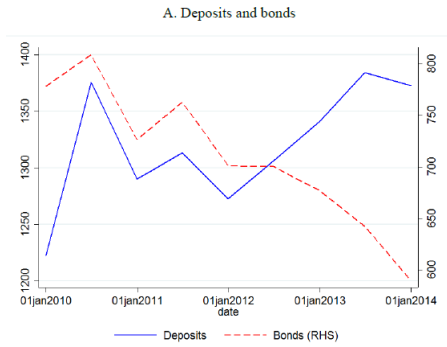
Bottom line :

- Overall, these are not a major threat in my view
 - ▶ the identification strategy relying on variations at the province-level of the holding of bonds by HH help to deal with this issue
- But you could mention and discuss these two changes in taxation of banks occurring at the same time
 - ▶ regarding the IRAP :
 - you could use the heterogeneity in the share of bonds maturing in 2012, which is unlikely to be correlated with the variations in the IRAP intensity
 - ▶ regarding the ACE :
 - you could test whether the amount of equity of banks is affected and partly mitigates the substitution between bonds and deposits
 - I think I would be nice to see the Figure 5B in level

Comments and remarks

The nature and the timing of the effect

- When we look at your Figure 1, we observe that the rebalancing btw bonds and deposits last (at least) until January 2014

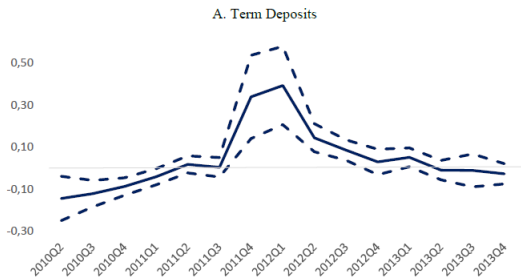


- However, you run your analysis on a shorter period (12 months before, 12 month after) :
 - ▶ is there any reason for not extending the time frame of the analysis ?

Comments and remarks

The nature and the timing of the effect

- This question relates to one specification choice :
 - ▶ level vs growth rate of deposits
- You claim that it is “*more conservative*” to use growth rate². In my view, the key issue is rather to clarify whether we expect the taxation shock to have :
 - ▶ an effect on the *level* or the *growth rate* of deposits/bonds holding?
 - ▶ a permanent or a temporary effect ?
- Your Figure A3 suggest that the *growth rate* is *temporarily* affected until the new equilibrium allocation is reached



²Footnote 21

Comments and remarks

The nature and the timing of the effect

- This raises another question : how fast this adjustment is ?
 - ▶ one of your test show that HH “*waited for their bonds to mature to reinvest the proceed*”
 - ▶ in my view, one possible explanation relates to the taxation of capital gains that could act as transaction costs
- In this case, we expect to observe a rebalancing staggered over time as bonds gradually mature in 2012, 2013, 2014...
- But this seems not to be the case : the adjustment is fast and occur over 1 year
 - ▶ is it because most of bonds mature in 2012 ?
 - ▶ otherwise, how to explain that we don't observe any effect in 2013 or 2014 ?

Comments and remarks

The nature and the timing of the effect

Bottom line :

- you could clarify the timing and the nature of the expected effect(s)
- you could extend the time frame of your analysis and test whether you still find an effect in year Y on bonds maturing in year Y
- you could discuss the role of taxation of capital gains as a potential friction in the rebalancing process

Comments and remarks

Other comments : credit analysis

- You limit your sample to multibanks firms for identification purpose :
 - ▶ multibanks firms represent the bulk of outstanding amount of credit but it is so because these firms are larger than monobank firms
 - ▶ it is generally considered that small, monobank firms are more responsive to credit supply shocks
 - ▶ you could try to use the framework developed by De Jonghe *et al.* (WP 2018) for dealing with demand effects and monobank firms
- Basically, your paper show that taxation of HH income can have first-order effects on the maturity transformation of banks :
 - ▶ less stable/more liquid liabilities & more stable/less liquid assets
 - ▶ This goes precisely in the opposite direction of the new liquidity rules of Basel III :

$$NSFR = \frac{\text{Stable Funding Available}}{\text{Required Stable Funding}} \geq 100\%$$

- ▶ the paper underlines the importance to better understand the interactions btw fiscalty and financial stability

Conclusion

- This is very good paper that exploit a changes in taxation to explore its effect on capital structure and credit supply
- The paper needs clarifications of some aspects (tax reforms, timing of the effects...) but the analysis is very conclusive
- Main general conclusion : taxation (even not directed toward banks) can have first-order effect on the maturity mismatch of banks !
- Contribute to a very relevant research agenda : how taxation may interact with financial stability

Thank you for your attention

Appendix

Uninsured depositors and credit analysis

- The results in table 10 shows that :
 - ▶ where market discipline is presumed to be low (low inflows of uninsured deposits) :
 - higher credit supply for riskless firm and higher maturity for all firms
 - ▶ where market discipline is presumed to be high :
 - lower credit supply for risky firms and no change in maturity at all
- You interpret that as evidence of the effectiveness of market discipline :
 - ▶ lower risk because of the threat of runs
- Alternative story consistent with your results :
 - ▶ uninsured depositors ask for higher returns for the lack of deposit insurance
 - ▶ banks with a higher share of risky borrowers have higher interest incomes from them
 - ▶ they can offer higher returns on their term deposits and they attract more uninsured deposits
 - ▶ after that, we observe mean reversion in the portfolio of loans

Appendix

Uninsured depositors and credit analysis

Panel A. $\Delta \log(\text{Credit})$

	All Firms (1)	Low Risk Firms (2)	High Risk Firms (3)	Difference High vs Low Risk (4)
Exp_BB_b	1.287* (1.94)	1.522** (2.12)	0.049 (0.08)	-1.472*** (-5.43)
$Exp_BB_b \times \Delta Share250K_b$	-1.476** (-2.14)	-1.512** (-2.09)	-0.936** (-2.09)	
Tests:				
$Exp_BB_b + Exp_BB_b \times \Delta Share250K_b$	-0.189 (-0.63)	0.011 (0.03)	-0.887* (-1.94)	-0.897** (-2.11)
Observations	343145	289467	53678	
No of firms	104215	87399	16816	
No of banks	487	486	457	