



Cross-Border Capital Flows in Emerging Markets: Demand-Pull or Supply-Push?

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In this paper we build upon the relationship between *cross-border flows* and *financial vulnerability*.

- The high level of international financial integration between economies generates significant risks both within and across national borders.
- Capital flows act as a transmission channel of risks across borders and thus may lead to the build-up of financial sector imbalances.
- The bulk of these capital flows are intermediated through ‘cross-border banking channels’.
 - effective regulation of cross-border banking is essential for domestic and global financial stability.

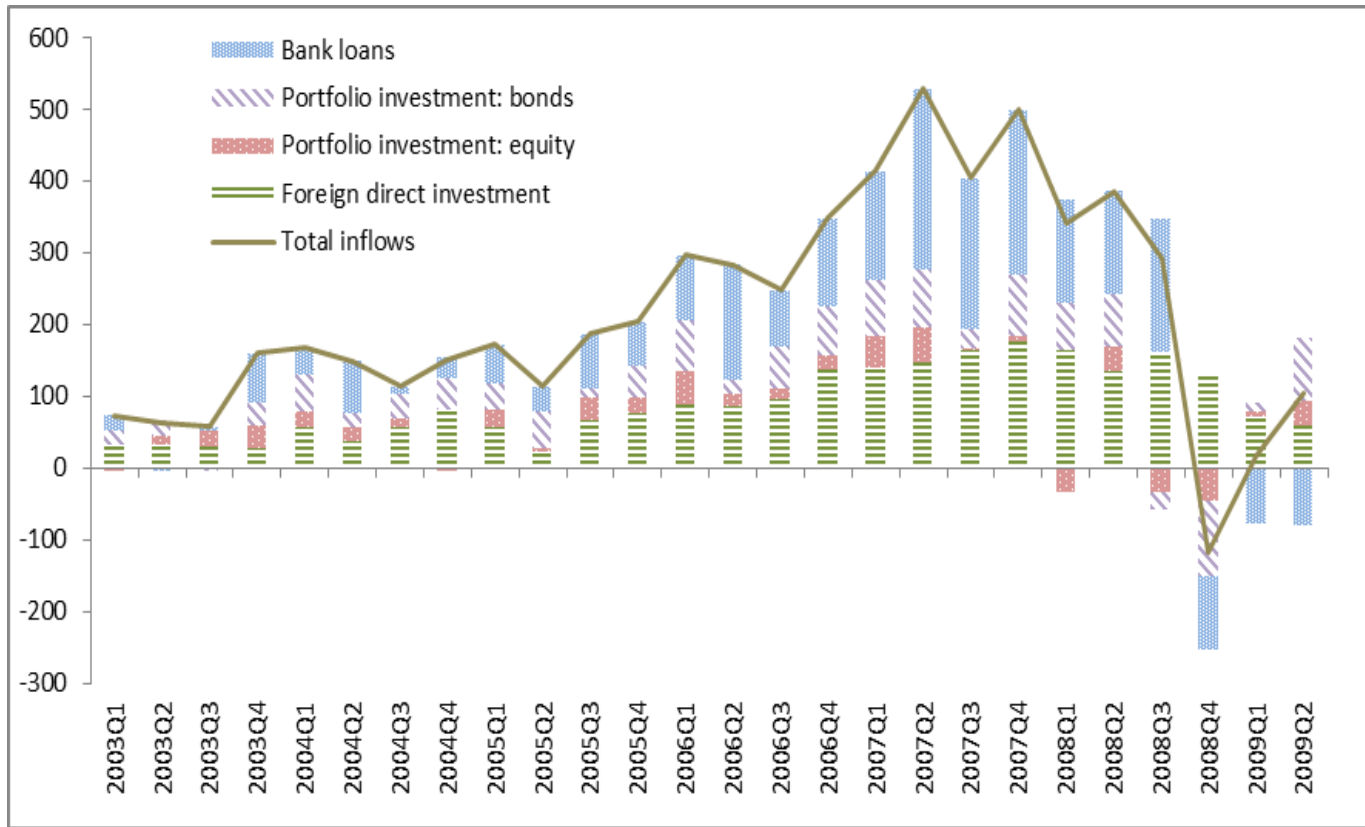
- Cross border bank lending
 - is the most procyclical component of the cross-border flows
 - reverses abruptly when the financial cycle turns.
 - may potentially serve as an indicator of the phase of the financial cycle.
- In this paper;
 - we explore cross border bank lending through the liabilities side of the balance sheet of the banking sector:
 - investigate the determinants of the ‘noncore liabilities of the banking sector’ in the post-crisis period... demand-pull or supply-push?
 - four selected emerging markets: Brazil, Indonesia, Malaysia and Turkey.
- We argue that,
 - during and after the global financial crisis, countries have exhibited similar patterns in terms of the movements in their non-core liabilities as well as their supply and demand components.
 - though, the heterogeneity in terms of their domestic economic stances has necessitated a differentiation in the countercyclical macroprudential policies.

Cross-border flows and macroprudential policies...

- Capital flows and the resulting growth in credit in emerging markets increase macrofinancial risks through several channels.
- The post-crisis period has witnessed the introduction of many novel macroprudential policy tools.
- Most of these policies were conducted by emerging markets which encounter stronger economic and financial cycles compared to the advanced countries, partially due to the intensity and the volatility of the capital flows (Claessens et al., 2013).
- A documentation of macroprudential policies conducted by 119 countries based on an IMF survey points out a positive relationship between the implementation of macroprudential policies and intensity of cross-border funding (Cerutti et al., 2015).
- Ghosh et al. (2014) examines the cross border capital flows of 71 countries and finds a positive impact of capital account restrictions on reducing these flows.
- Akıncı and Rumsey (2015) suggests that capital control policies targeting the banking sector are more successful than the portfolio restrictions on curbing the credit growth.

- Surges of capital flows may amplify the business and financial cycles and lead to systemic risks in the recipient emerging economies.
- To what extent these flows may raise concerns for the incumbent economy from the stability perspective depends on their types .
 - FDI flows and portfolio equity flows
 - are less likely to reverse sharply
 - even if they do, the damage, is much less compared to a sudden stop of bank flows.
 - Debt type inflows
 - are mostly intermediated through the banking system
 - lead to rapid domestic credit growth, posing risks to financial stability.

- Banking sector flows are just one component of overall capital flows but they are the most procyclical ones that transmit the financial conditions across borders.
- Sharp withdrawal of aggregated bank flows from forty one countries, including many emerging economies, starting from the last quarter of 2008.



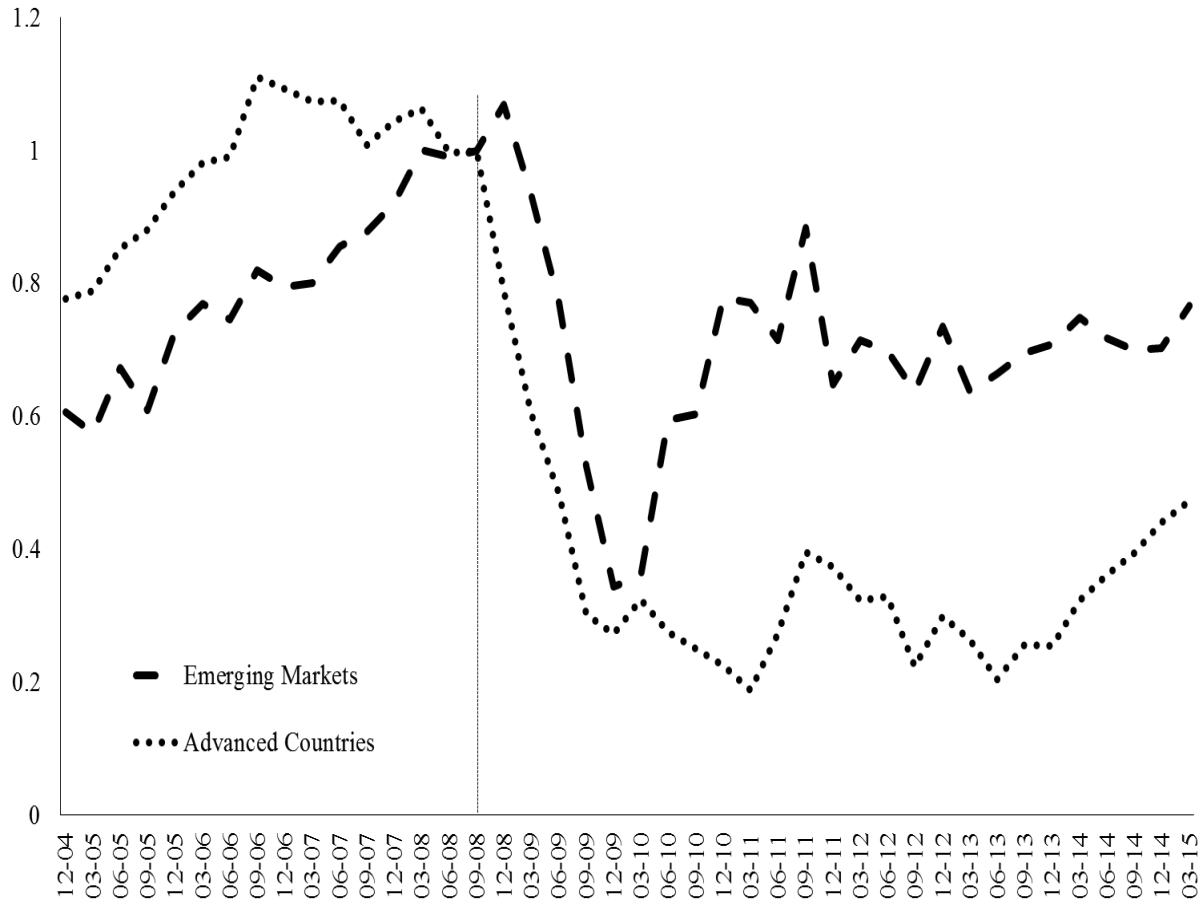
- The volatility of the banking sector flows is much higher than the volatility in the remaining types of capital flows.
- Higher volatility of bank-related flows rationalizes our choice of non-core liabilities of the aggregate banking sector, among other indicators of financial risk.

Source: IMF Global Financial Stability Report, April 2010 p.123.

Notes: The figure displays the aggregated capital inflows to forty-one advanced and emerging economies.

Change in total credits / GDP

(q-o-q change, 4- quarters moving average, indexed as 2008Q3=1)



- With the onset of the crisis, an instant plunge in credits in both country groups.
- However, advanced countries and emerging markets decouple in a noticeable way in two years' time after the initial shock.
 - a faster recovery in credit growth for the emerging markets as opposed to the advanced countries.

Notes: i) Advanced countries include Australia, Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Malta, Singapore, Spain, Switzerland, UK and USA.

Emerging markets include Brazil, Chile, Croatia, Czech Republic, Hungary, Indonesia, Malaysia, Mexico, Poland, Russia, South Africa, Thailand, Turkey and Ukraine.

ii) Total credit figure is the total credits extended to private sector which is the sum of household credits and business credits for each country.

- A significant cause of the rapid recuperation in credits in emerging markets is the surge in direct or indirect cross-border capital flows to these economies:
 - The direct channel refers to the credits extended to the domestic private agents by foreign financial institutions.
 - The indirect channel describes an intermediary, usually a bank, raising wholesale funding from abroad and then lending to local customers.

Both channels functioned well for emerging markets in the aftermath of the crisis due to the permissive global financial conditions, raising concerns for domestic authorities.

- We focus on the developments in the indirect cross-border flows through the lens of the liabilities side of the balance sheet of the banking sectors.

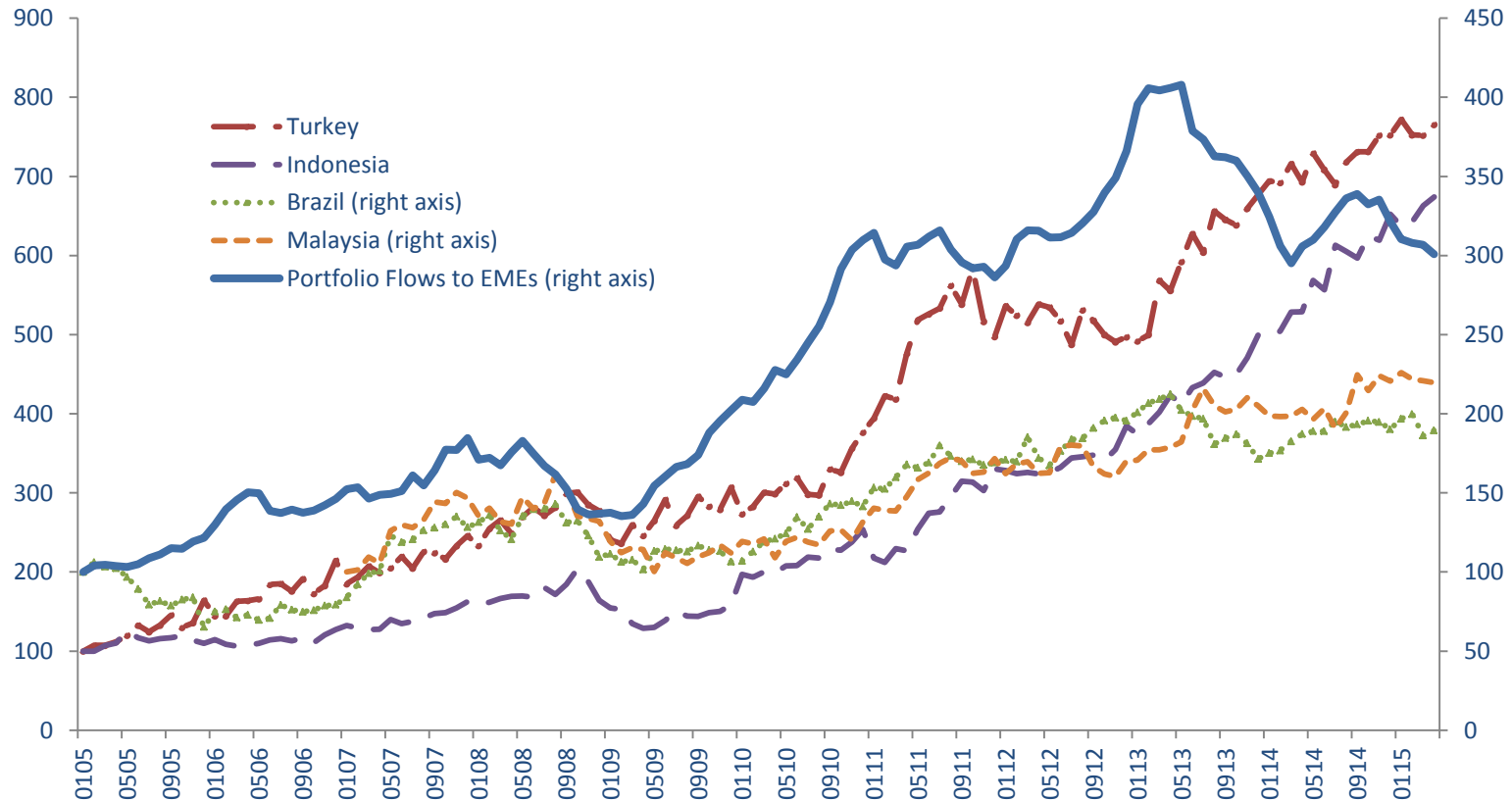
Core vs. Non-core liabilities of the banking Sector ...

Hahm et al. (2013) proposes a classification of the banks' liabilities by the holder of the claim, which would provide information about their reliability and stability under different periods of the economic cycle:

- Core liabilities:
 - demand and time deposits of the household sector
 - are reliable and relatively stable sources of funds for banks.
 - the growth rate of these deposits is usually consistent with that of the household wealth during the economic cycle...
 - Non-core liabilities:
 - short-term foreign debt or interbank borrowing
 - during booms; when loan demand growth might be higher than that of the deposits banks recourse to these less reliable and more volatile source of funds.
- Periods of surges in capital inflows generally tend to be associated with rapid increases in the non-core liabilities of the banking system...

Portfolio Flows to EMEs and Non-Core Liabilities...

- Increases in portfolio flows to EMEs in the aftermath of the global financial crisis are associated with significant increases in non-core liabilities of the banks for all of our sample countries.



Source: EPFR, Central Bank websites.

Notes: *i)* Total non-core liabilities are expressed in billions of domestic currency and are foreign exchange rate adjusted. *ii)* For Malaysia the non-core liabilities are indexed as 2007m1=100. *iii)* Portfolio flows to EMEs constitute the sum of bond and equity flows to EMEs. They are adjusted for exchange rates and prices.

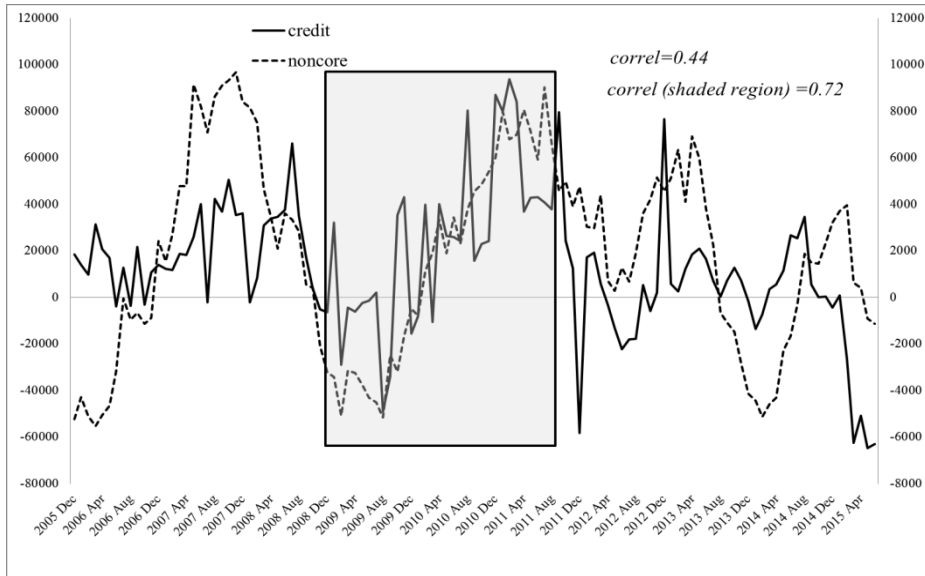
A rise in the non-core liabilities in the balance sheet of banks indicates vulnerability against liquidity shocks for at least two reasons:

- As a result of their short-term nature and unreliability, it would be hard to rollover these funds during a liquidity squeeze.
- Enhanced cross-lending between domestic banks increases the systemic risk due to the contagion effect stemming from bilateral exposures.

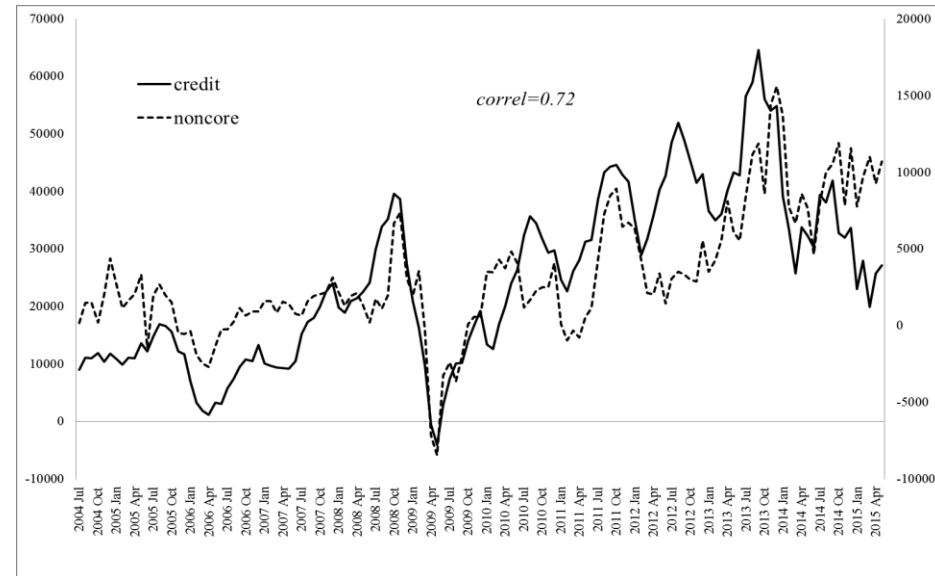
Thus, banks might play an active role in the propagation of the financial shocks, rather than being passive intermediaries transferring foreign funds into the economy in order to absorb the domestic credit demand.

Non-core Liabilities and Total Credit...

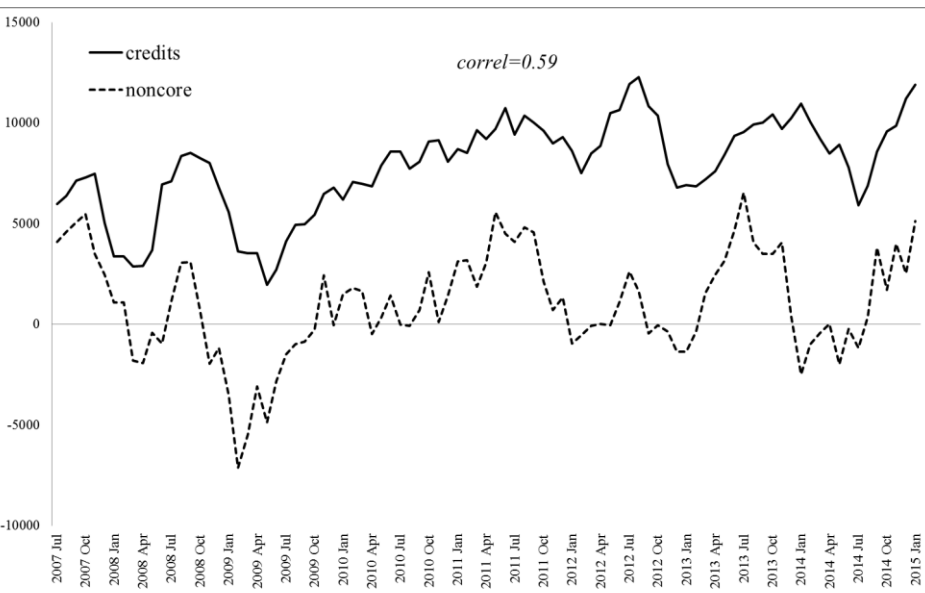
Brazil (Left: Non-core liabilities, Right: Total credit)



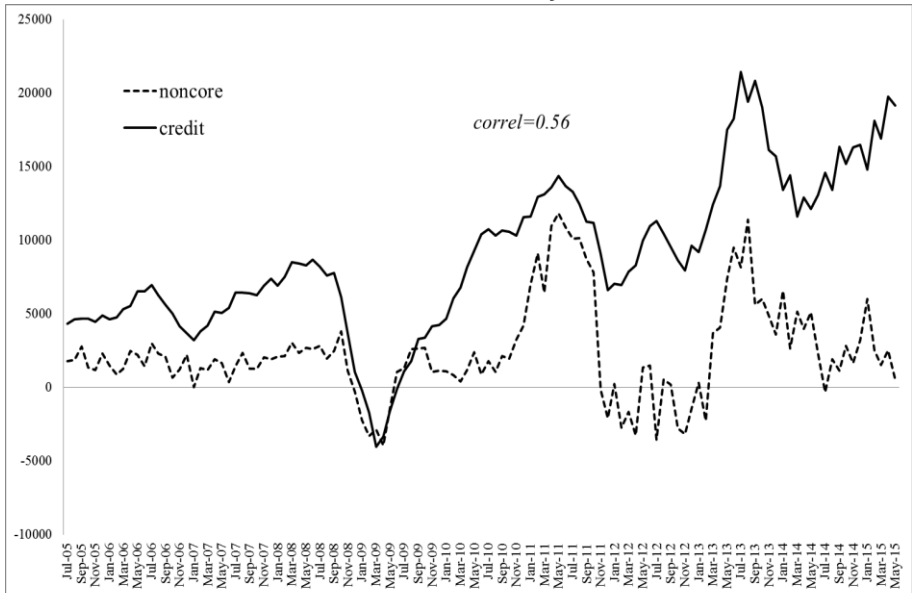
Indonesia (Left: Non-core liabilities, Right: Total credit)



Malaysia



Turkey



- For all the countries, the figures suggest non-core liabilities as a strong candidate to be an indicator of the recovery in credits.
 - A strong correlation between non-core liabilities and credit growth for Indonesia, Malaysia and Turkey.
 - For Brazil, only the post-crisis era witnesses some periods where the two series display a significant positive relationship.
- Our interest in this paper lies in disentangling the ‘supply-push’ and ‘demand-pull’ factors that determine the movements in non-core liabilities of these countries.
- This allows us to differentiate the domestic component of the amplification mechanism in credit market from the global liquidity impact.

- The supply-induced part of non-core liabilities is associated with the increase in global liquidity, both in pre-crisis period and post-crisis period.
- The demand-pull factor could be explained by two determinants which are not necessarily exclusive:
 - First, as argued in Kim et al. (2013), non-core liabilities show a procyclical pattern, growing during boom times due to *increasing risk-appetite of the banks*. Hence, it is an important indicator of systemic risk that heightens during expansionary times.
 - In addition to Kim et al. (2013), a change in demand-pull component could also be motivated with changing macroeconomic conditions, such as an expansionary monetary or fiscal policy.
 - For instance a reduction in housing taxes would lower the risk of the loans in general and hence would in turn make the bank more eager to provide funds to absorb the credit demand. This would constitute an example for a case where the demand for non-core liabilities goes up but the risk-appetite of the bank does not change at all.

We compute the 'historical decomposition' of the total non-core liabilities into their demand-pull and supply-push components.

- Vector autoregression (VAR) model for each country that uses;
 - monetary aggregate - fx adjusted total non-core liabilities
 - price measure - money market rates (to capture the tightness of credit markets)
- The structural VAR is estimated by OLS
- We impose sign restrictions on the impulse responses of the model to identify supply and demand shocks:
 - Following Kim et. al (2013),
 - demand shocks
 - indicate the upsurge in credit by local banks
 - move the non-core liabilities and the money market rates in the same direction.
 - supply shocks
 - are related to liquidity conditions
 - move the non-core liabilities and the money market rates in opposite directions.
- The identified demand and supply shocks are used to construct the contribution of each shock to the total non-core liabilities of sample countries.

- Two major setbacks of working with non-core liabilities data:
 - No standard definition that is applicable to all countries due to the different characteristics of the banking sectors.
 - None of the countries in our sample provides publicly available non-core liabilities data for the aggregate the banking sector.
- Non-core liabilities consist of:
 - a foreign lending component
 - a domestic component, of which the biggest portion is the interbank lending
- We used the sum of the liabilities of the banks to the foreign sector and liabilities of the banks to other domestic financial corporations.
- Sample period spans April 2004 to June 2015, depending on the country employed.

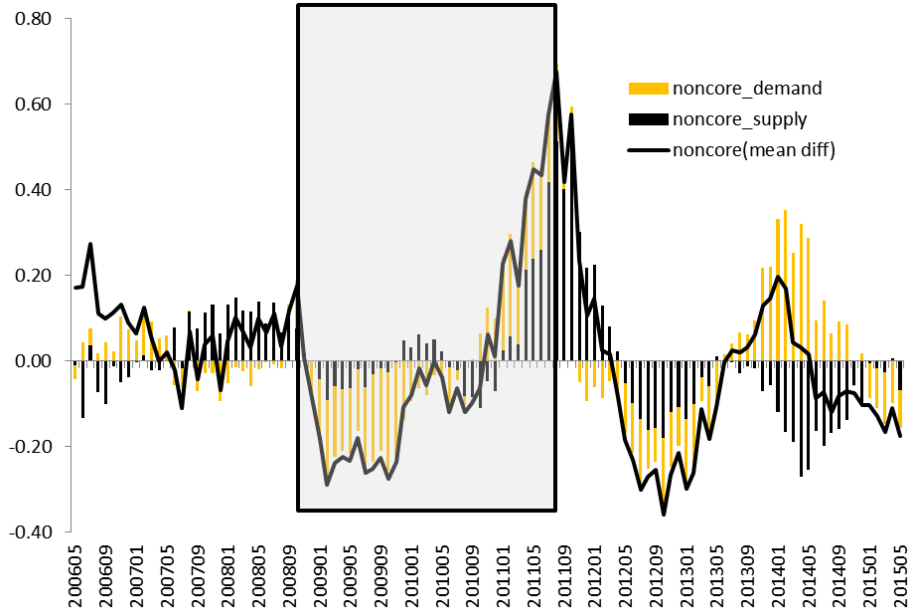
The share of supply shocks in total (absolute value) of shocks

	Total	Before Lehman Brothers (Initial point of the sample - September 2008)	Between Lehman and Eurozone Crisis (September 2008 - August 2010)	After Eurozone Crisis (After August 2010)
Brazil	60.8	76.5	34.8	63.3
Indonesia	49.7	57.5	44.9	50.1
Malaysia	33.7	29.0	18.8	45.2
Turkey	49.2	62.9	26.0	51.7

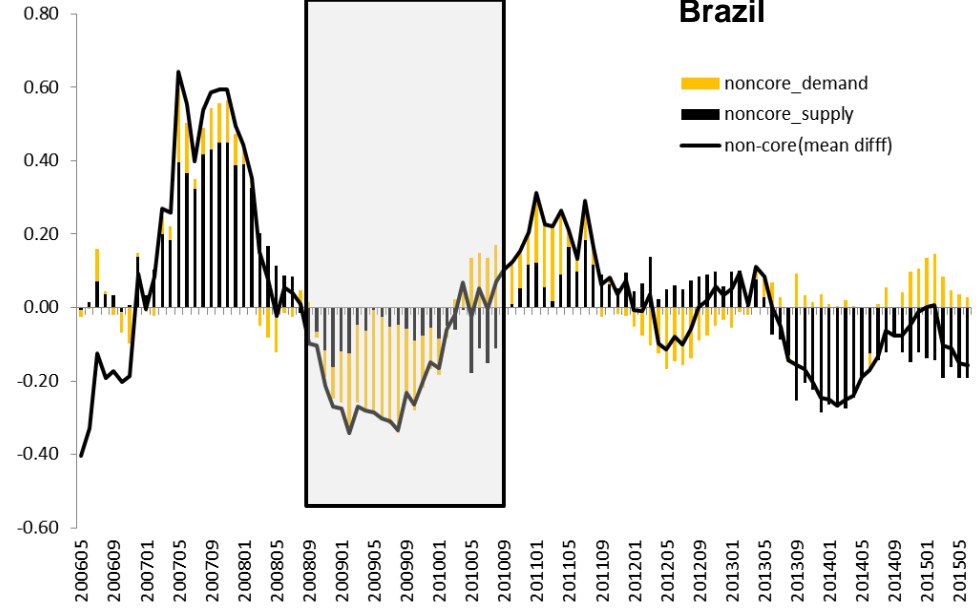
- In the mid-region, the supply induced part in the non-core liabilities is below 50 % for all countries.
- For Malaysia – changes in non-core liabilities are mainly demand driven.
- For Indonesia, Turkey and Brazil – except the mid region, non-core liabilities are supply driven.

Historical decomposition of the y-o-y growth in non-core liabilities

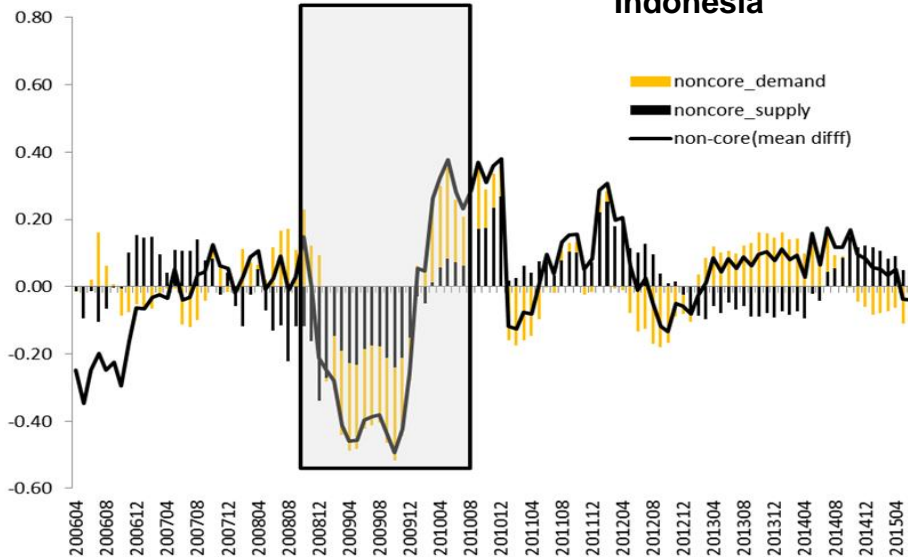
Turkey



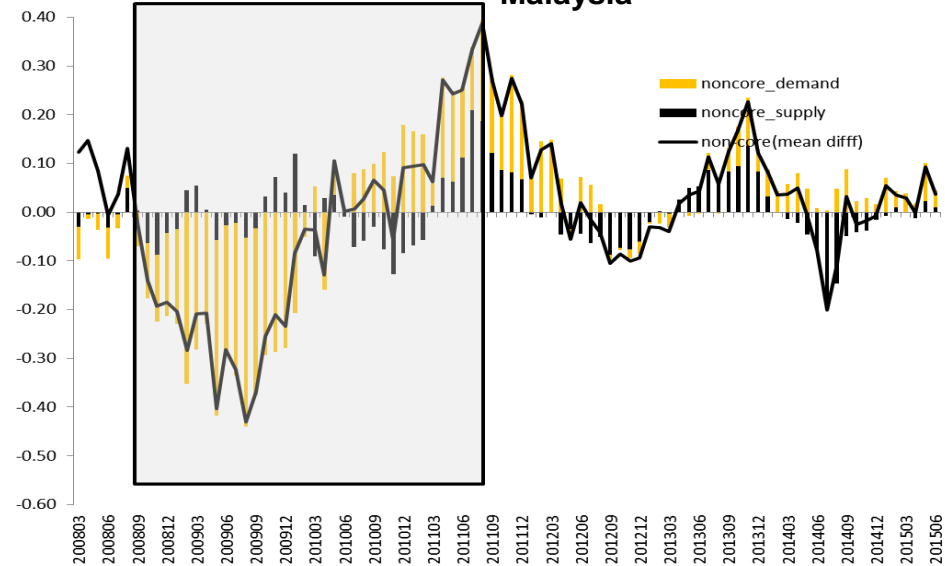
Brazil



Indonesia



Malaysia



Significant similarities in the movements and drivers of non-core liabilities:

- The initial phase of the global financial crisis remarks a plunge in non-core liabilities for all countries.
 - This immediate decline following the global financial crisis is mostly demand driven, except for Indonesia, which reveals a balanced decline in both components.
- The recovery in non-core liabilities starts in a couple of months and continues until the Eurozone crisis deepens.
 - The initial phases of the recovery are mostly demand led.
 - The supply induced recovery is rather more observable in two years time after the crisis – can be attributed to the onset of QE policies of the advanced country central banks.

With the tapering signal in May 2013, declining trend in portfolio flows to EMEs...

Thus, supply-push component is expected to exert a downward pressure on non-core bank liabilities...

How about the demand-led component???

- Non-core bank liabilities of Brazil display a mild downturn
 - Supply-push component dominates the demand-led component.
- Those of Turkey and Indonesia continue to increase
 - Strong GDP growth during that era
 - Thus, the demand-led component of non-core liabilities dominates the supply-led component.
- Non-core bank liabilities of Malaysia continue to increase
 - Both demand and supply led...

Thus, heterogeneity among countries necessitates the need to take into account the differences in the prevailing domestic market conditions while designing the appropriate policy responses of authorities in emerging markets.

- By monitoring the growth of cross-border flows, a central bank may be able to put in place the appropriate macroprudential policy measures in a timely manner so that they could prevent the build-up of financial vulnerabilities.
- In that regard, differentiating the demand and supply components of the non-core liabilities of the banking sector is crucial from the overall macroeconomics policy perspective, as it provides valuable information regarding the appropriate design of countercyclical macroprudential policies.



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