Macroprudential policy spillovers from international banking: the case of France[1]

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Using data on international bank lending of French banks to the rest of the world and from foreign banks to French borrowers, we show a drop in aggregate bank inflows to countries which tighten their macroprudential policy. This "virtuous" inward spillover effect is however nuanced when splitting aggregate flows into cross-border and local claims: particularly when capital requirements are tightened in the host country we find evidence of regulatory leakages through local funding from foreign bank affiliates. Concerning outward spillovers, we find evidence of search for friendlier jurisdictions by foreign banks following a policy tightening in their home countries, except when restricting the sample to European states. This suggests some positive impact of the existing coordination agreements.

[A] Introduction

Authorities in charge of financial stability face generally a huge challenge: most prudential regulations have a national perimeter, but banks operate at the global level. This may give rise to spillovers, ie. effects not initially considered in the objective function of authorities of countries activating a measure, but affecting themselves (inward) or other authorities' goals abroad (outward) in an unintended way. Some of inward spillovers look like a "negative externality": regulatory leakages may be exploited by foreign banks and undermine the expected efficacy of domestic macroprudential policies (MPPs). The issues at stake are huge and have given rise to coordination agreements, e.g. under the aegis of the ESRB. To palliate potential cross-country spillovers within the European Union, member countries are recommended to reciprocate any MPP implemented in another member country by setting an equivalent measure on their national banks' international expositions to that country.

French prudential authorities face this very challenge. Total outstanding French residents' liabilities vis-à-vis banks (both debt and equity) amount to more than 5500 USD billion, which is roughly twice France's GDP. Roughly 20% of them are funded by institutions headquartered abroad, either via cross border claims (16%) or local affiliates such as branches and subsidiaries (4%). UK banks hold more than 4%, while German, Japanese, and US banks hold around 3% of French liabilities each (Figure 1). Similarly, French banks hold a sizeable share of residents' liabilities in other countries, funding e.g. private sectors in Belgium, Netherlands and some central and eastern European states. The magnitude of

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[1] Any views expressed represent those of the authors and not necessarily those of the Banque de France or the Eurosystem.

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these stocks exposures gives an idea of the potential spillovers arising from international banking in terms of flows as a response to prudential policies.

While there is some empirical evidence on outward spillovers from French banks (Bussière et al. 2017), we investigate here both inward and outward spillovers potentially faced by French and foreign authorities, with a focus on the first type. Let us suppose that the growth of French residents' debt is considered excessive and French authorities activate a MPP to moderate it. Foreign banks may take advantage to increase their share in the French credit market, as typically foreign branches operating in France and cross-border inflows from banks headquartered abroad remain out of the scope of French MPPs.

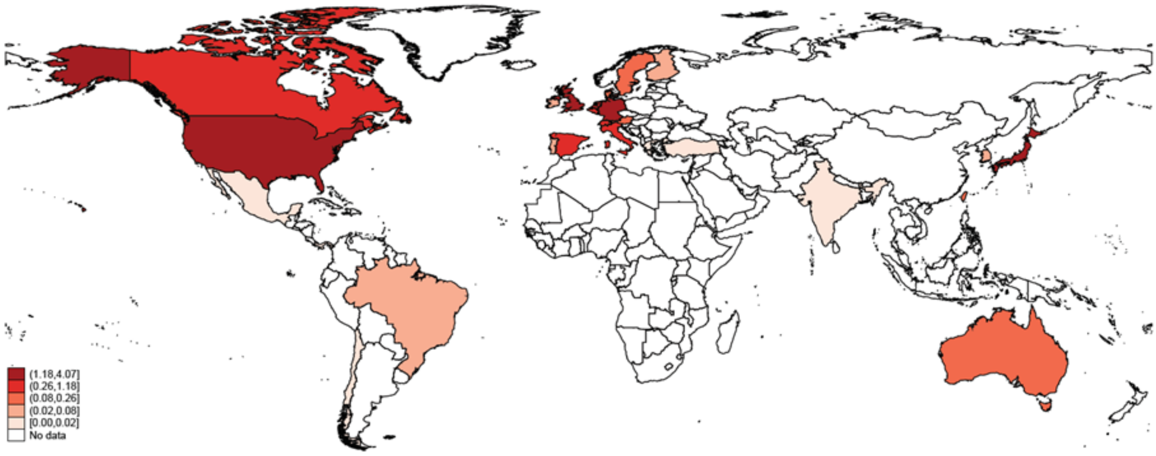

Figure 1: Foreign bank exposures on France (as % of total bank debt of French residents)
Source: BIS CBS Immediate Borrower
Note: Only countries reporting to CBS appear in color, split into quintiles: the highest the share of French liabilities held by banks headquartered in that country, the darkest the color; data as of 2017q4

[A] Empirical approach and main results

We carry out an empirical analysis using BIS international banking statistics on i) 22 source countries headquartering banks that gave rise to flows of funds to France; ii) 42 destination countries the resident sectors of which received flows from French banks, between 1999q4 and 2017q4. During this period, French authorities have implemented several MPPs, especially from the outbreak of the global financial crisis on. They have tightened particularly two categories: bank capital requirements (following Basel committee recommendations) and concentration limits (targeting banks' exposures to specific French borrower sectors, similar to the recent measure set within the Article 458 CRR).

The empirical approach followed in this paper relies on econometric estimations in panel regressing bank international flows on macroprudential policy indicators (MPP) and a set of control variables as described above. The equation to be estimated is as follows:

$$Flows_{r(s),t} = \alpha + Flows_{r(s),t-1} + \beta MPP_{r(s),t-n} + \phi Controls_{r(s),t-n} + \delta_{r(s)} + \epsilon_{r(s),t}$$

with the subscript *r* denoting the recipient country, *s* the source country, *t* the time index and *n* the number of lags. The individual fixed effect is denoted by δ and ϵ is the error term.

In our different specifications, bank flows (*Flows*) are considered according to several criteria: i) their direction (foreign bank inflows to France or outflows from banks headquartered in France); ii) type (total international flows or breakdown between cross-border and local claims); iii) borrower type (banks and non-bank private sector); and iv) geographic area (whole sample or European sample).

Data on flows are derived as the growth rate, quarter on quarter, of outstanding French banks' international liabilities (inflows) and claims of French banks abroad (outflows). We also include several control variables (*Controls*) to take into account the different macroeconomic and structural conditions between France and its counterparties, such as prudential and monetary policy stances, expected exchange rates, and the degree of capital flows mobility.

When using a broad measure of macroprudential stance, our results consistently show a drop in aggregate international lending to countries which tighten their policy (both from third countries banks to France and from French banks to third countries). These negative inward spillovers may be thought of as a "virtuous" effect strengthening the impact of macroprudential policy in France and reducing systemic risk in host countries.

When using more granular measures, we find that French MPPs typically set on national lenders, such as a tightening of capital requirements, tend to entail a decline in both bank inflows and outflows to France/from French banks abroad. In turn, splitting bank funds into two main categories helps nuance the interpretation on the decline in bank inflows. While "virtuous" inward spillovers are driven by a drop in cross-border bank flows to France, there is still a significant rise in foreign bank affiliates' local claims on French residents. The latter could potentially undermine French prudential authorities' countercyclical policies. Our analysis is limited so far by the fact that we cannot accurately disentangle subsidiaries from branches. Anyway, it is likely that facing a French tightening of capital requirements foreign banks replace part of their cross-border expositions by local branches' claims on France. While the puzzle may be related to a common phase-in of this type of MPP in other countries under Basel arrangements, this substitution effect remains a challenge for policy makers.

Moreover, French limits to concentration ratios, such as those recently used as a backstop for large firm indebtedness, tend to entail a decline of bank inflows to France. The "virtuous"

effect is driven by a drop in all claims owed by banks headquartered in Europe, and a decline in local affiliates' claims from worldwide banks. In turn, when responding to the same measure, banks headquartered in France increase their claims abroad worldwide. France-specific MPPs targeting resident borrowers entail therefore negative inward and positive outward spillovers. Two meaningful policy implications arise: on the one side, there seem to be a signaling effect that encourages foreign banks to follow French banks and reduce their exposure to French residents. This enhances the domestic efficacy of this specific French MPP. On the other side, as far as the rise of French banks' exposure abroad is driven by their subsidiaries under foreign jurisdiction, the other European countries would have an interest to set similar measures to the French caps on risk concentration on expositions to their residents.

[A] Counterfactual exercises

Although our previous results show significant macroprudential policy spillovers from international banking in the case of France, they do not give an idea of the real magnitude of such effects. To give a quantitative assessment of the extent of macroprudential policy spillovers, we conduct counterfactual exercises so as to measure what the fitted flows of international bank lending to France would have been without any change in macroprudential policy, all other things being equal. To do so, we use our previous regressions to run both unconditional in-sample forecasts and forecasts conditional to macroprudential indicators set to zero.

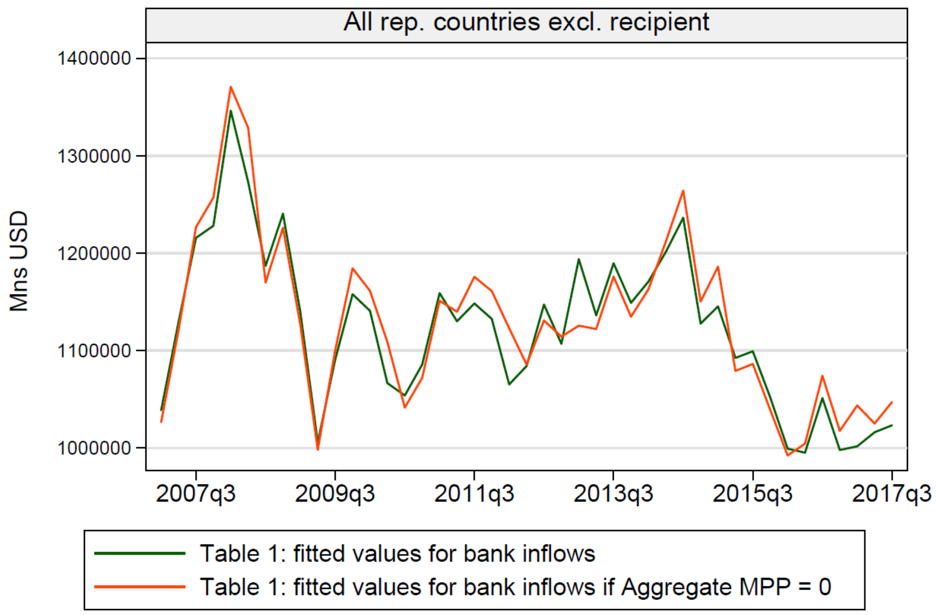

Figure 2: Total foreign banks claims on France with and without French prudential policy
Source: BIS CBS and authors estimations

Our counterfactual exercise shows that the outstanding amount of foreign bank claims on French residents would have been larger in the absence of MPP most of the time (Figure 2), exceeding the MPP activation scenario by 2.1 USD billion (0.08% of French GDP) on average over the sample period (Figure 3).

Such a “virtuous effect” found for the overall French macroprudential stance may be driven by some categories of MPPs such as concentration limits. When reacting to them, foreign banks “follow” French banks, reducing their international exposure to France, both via cross-border and local claims. As an illustration, Figure 3 shows a measure of this effect through local affiliates. French concentration limits encourage foreign banks’ affiliates to lower their stock of claims on the French resident sector by 0.27% (590 USD million). This “virtuous” effect has two possible explanations: i) the regulatory scope of concentration limits is effective beyond the French jurisdiction, as they target banks’ exposures to the resident borrower sector regardless of lender banks’ nationality; ii) French regulation acts as a signal of higher risks from the domestic borrowers, encouraging foreign banks to reduce their exposure.

	Fitted values with MPP	**Fitted values if no MPP**	**Gap = excess foreign bank exposures to France with active French MPP**		
Type of Foreign bank exposures to FR and MPP Average during period over which MPP has an impact	Million USD			% of fitted values	% PIB
Foreign bank outstanding international claims MPP: Aggregate index 2001q1-2017q3	935 253	937 426	-2 173	-0.23	-0.08
Foreign affiliates outstanding local claims MPP: Capital requirements 2011q3-2017q3	169 230	167 349	1 881	1.11	0.07
Foreign affiliates outstanding local claims MPP: Concentration limits 2007q1-2012q2	214 537	215 126	-589	-0.27	-0.02

Figure 3: Foreign affiliates’ claims on France with and without French capital requirements
Source: BIS CBS and authors estimations

However, a tightening of French capital requirements entails a rise of foreign bank affiliates’ exposure to France, which is on average 1.11% higher (1.9 USD billion) than in the absence of that measure, providing evidence of a risk of regulatory leakage through foreign banks’

branches. As far as this inward spillover may potentially undermine French prudential authorities' objectives, it does call for a reciprocity framework for capital-related measures, such as the recent counter-cyclical buffer set by French macroprudential authorities.

[A] Conclusions

We analyse the effects of macroprudential policy changes on international bank lending of French banks to the rest of the world and from foreign banks to French borrowers, for the period 1999-2017. When using an aggregate measure of macroprudential stance, our results show a decrease in international lending to countries that tighten their policy (both from third countries banks to France and from French banks to third countries), reinforcing therefore the effect of macroprudential policy in France and reducing systemic risk in host countries. Despite such "virtous" effect from macroprudential policy, we also find some evidence of higher inflows from foreign banks to France when foreign policy is tighter. This may indicate some search for friendlier jurisdiction by foreign banks (positive outward spillovers from third countries, thought of as bank flows potentially interfering with French authorities goals). This sort of outward spillovers from third countries policies does not occur when restricting the sample to European states, suggesting that the existing coordination agreements may have been yielding some desirable outcome. With regards to the effect of French policies, when breaking down flows between cross-border flows and local claims, we find some evidence of higher exposures of foreign affiliates to French residents following a tightening of capital instruments, which may potentially undermine French macroprudential authorities countercyclical goals. Finally, when considering flows from banks headquartered in France to the rest of the world, we only find evidence of negative spillovers for macroprudential measures taken by both French and foreign authorities, suggesting that they tend to be more prudent in their investment not only in France but also abroad.

References:

Bussière, M., Schmidt, J., and Vinas, F. (2017). International Banking and Cross-Border Effects of Regulation: Lessons from France. International Journal of Central Banking, 13(2):163-193.

Biographies:

Stéphane Dees is advisor in the Directorate Macroeconomic Analysis and Forecasting at the Banque de France. He is also Associate Professor at the University of Bordeaux. Before joining the Banque de France, he held several positions in the Economics and Financial Stability Departments of the European Central Bank (2001-2017) and worked in two think tanks: CEPII (1998-2001) and NIESR (1996-1998). He received a PhD in Economics from the University of Bordeaux. His research, mainly about financial and international macroeconomics, financial stability and stress testing, has been published in journals, such

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Julio Ramos-Tallada works currently as a financial advisor for the French Treasury, on secondment from the Banque de France. Previously he was a research economist at the Macroprudential Policy Division, in the Financial Stability Directorate, and a senior economist at the International Monetary Relations Division. Before joining the Banque de France in 2011, he worked as a lecturer in Paris Dauphine University, where he received his PhD. His articles deal with topics such as cross-border capital flows, the transmission channels of monetary and financial policies, and emerging countries' issues.