



# Liquidity management of U.S. global banks: Internal capital markets in the great recession

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## ABSTRACT

The recent crisis highlighted the importance of globally active banks in linking markets. One channel for this linkage is through how these banks manage liquidity across their entire banking organization. We document that funds regularly flow between parent banks and their affiliates in diverse foreign markets. We show that parent banks, when hit by a funding shock, reallocate liquidity in the organization according to a locational pecking order. Affiliate locations that are important for the parent bank revenue streams are relatively protected from liquidity reallocations in the organization, while traditional funding locations are more extensively used to buffer shocks to the parent bank balance sheets.

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## 1. Introduction

The role of global banks as vehicle of international shock transmission has been clearly highlighted during the Great Recession. A crisis that started affecting a specific subset of banks, all from predominantly developed countries, spread across the globe in good part as a result of significant cross-border balance sheet adjustments of such banks (e.g., Acharya and Schnabl, 2010; Cetorelli and Goldberg, 2011; Shin, 2011).

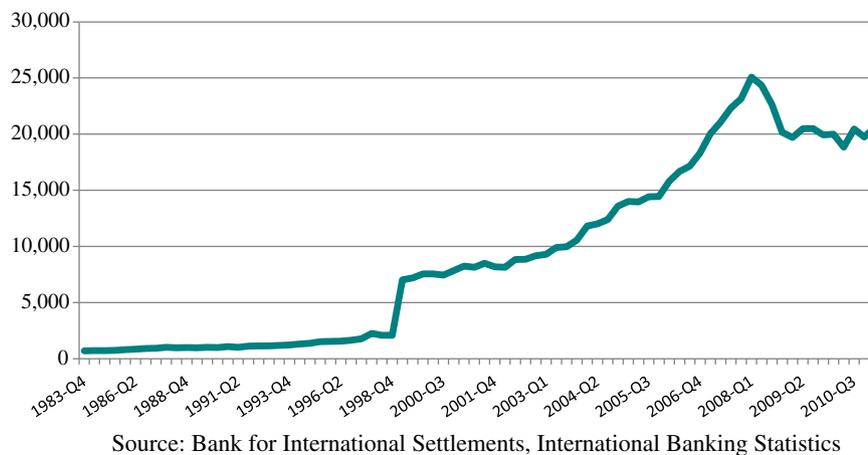
That global banks can contribute to international shock transmission is *per se* not a new notion. Basic evidence attesting their role goes back at least as far as Peek and Rosengren (1997, 2000). However, there have been at least two important developments since those contributions. The first is that the scale and scope of the consequences of global banking activity is an order of magnitude greater today than it was in the 1990s. As Fig. 1 shows, the international claims of global banks from BIS reporting countries (highly representative of the

universe) have grown ten-fold over the last twenty years, peaking at about \$25 trillion in 2007.

Second, we have developed a better understanding of the specific mechanics of international transmission associated with global banking. In other words, not only do we know that global banks contribute to international shock transmission, but we know better *how* that happens. Traditional channels of transmission through cross border lending are well-documented. Yet, recent decades have increasingly been characterized by banks setting up and serving clients through branches and subsidiaries established in foreign locations (Claessens and van Horen, 2012). Applying basic corporate finance principles, it has been conjectured that global banks can respond to a funding shock by activating capital markets *internal* to the organization, reallocating funds across locations in response to their relative needs. Cetorelli and Goldberg (Forthcoming) have documented such dynamics, providing evidence of actual cross border, *intra*-bank funding flows between global banks' head offices and their foreign operations in response to domestic shocks. This internal funding reallocation can lead to adjustments in the *external* investments (e.g. lending and securities holdings) of their foreign operations, thus establishing another specific channel of international transmission. Importantly, this feature of internal funding allocation has been shown to be a common characteristic of global banks' conduct, observable in "normal" times and not just in times of crisis.

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Source: Bank for International Settlements, International Banking Statistics

Fig. 1. Global international claims, 1983–2011.

Hence, global banks manage liquidity on a global scale, and this liquidity management aspect is at the heart of the contribution of global banks to international shock transmission. But how is this done exactly? What are the main drivers behind the choice of internal funding reallocation? And does it make a difference when we think of the global implications associated with global banking? In this paper we dig deeper on the subject of global banks liquidity management by exploring alternative conjectures regarding the decision rules driving cross-locations, and internal funding dynamics. We argue that an understanding of the liquidity management of global banks is of first order importance for refining our predictions on the consequences of global banking.

We explore two conjectures regarding the mode of operation of global banks' internal capital markets. The first conjecture reflects a common assertion about the underlying dynamics governing global banks' cross border flows: namely, that such flows generate "destabilizing ... floods and droughts" (IMF, 2010, p. 4), where global banks move funds in and out of foreign markets in "ebb and flow" (Pontines and Siregar, 2012, p. 25), with fund surges and reversals cutting across destination countries and/or regions of the world. These types of broad patterns of "capital bonanzas" and "sudden stops" are documented in Reinhart and Rogoff (2009) and Forbes and Warnock (2011). A common argument is that this tendency in global banking flows is less related to specific foreign market conditions and more driven by the centralized decisions and needs of the industrialized countries. Within banking, the head offices of banks would be the source of such flows. This intuition is central, for instance, in the models of global banking in Bruno and Shin (2011) and Devereux and Yetman (2010), where international flows are driven mainly by head office balance sheet management considerations.

This view has a direct implication regarding global banks' liquidity management strategies: in the event of an adverse shock to the balance sheet of the head office, we should expect, on average, a common pattern of internal fund outflows from foreign locations to support the head office, irrespective of foreign location-specific considerations. Put differently, this conjecture implies that the domestic operations of a global bank are at the top of an *organizational pecking order*, with a priority in parent bank balance sheet support vis-à-vis the bank's foreign operations.<sup>1</sup>

<sup>1</sup> Embedded in this view is the existence of an underlying "home bias" in global banking activity. Giannetti and Laeven (2012) have documented a "flight home" tendency by global banks during the 2007–2008 crisis, which implied a shrinking across the board of their foreign balance sheet in support of their domestic activities. Rose and Wieladek (2011) argue that non-British banks disproportionately contracted lending in the United Kingdom and increased interest rates in the Great Recession.

A second alternative conjecture is possible. This second conjecture posits that global banks operate instead following a *locational pecking order* in determining funding allocations internationally. In other words, there is no obvious unconditional organizational preference in determining global banks' liquidity management strategies, which instead are motivated by banks' overall global portfolio considerations. This second conjecture implies that liquidity management is driven by each bank's assessment of the marginal conditions of each foreign location along both funding and investment dimensions. A global bank is expected to draw more support from locations that normally attract local funds – reflecting an advantage in external market access – while also shielding locations that the bank considers important for lending activity – thus indicating better returns on investments. Such locations may even be net receivers of funding support from the head office. Hence, this second conjecture implies that banks manage their liquidity allocations taking into overall consideration the relative costs and benefits of the marginal dollar at each location in which it operates.<sup>2</sup>

Testing which conjecture may better reflect the data is important for refining our understanding of global banks' behavior and for formulating predictions about the impact of global banking. For instance, if global banks pull funds across foreign locations when hit by a domestic shock, then global banking activity can be expected to contribute to *directional* swings in gross international capital flows.<sup>3</sup> This consideration is relevant for macro-economic stability and for policy decisions of host country regulators, for whom the presence of global banks in operation on their territory could be seen as a potential source of local market volatility. The concerns are reflected in some recent efforts by host country regulators to restrict global banks in their ability to manage liquidity globally, pushing instead for a model centered around so-called "local funding pools" or some "ring-fencing" of activity (see, e.g., Bank for International Settlements, CGFS, 2010 and ICB, 2011).

The predictions for international capital flows and host markets are quite different if global banks' liquidity management is driven instead by more nuanced criteria associated with bank-specific funding and investment priorities. In this case, the decision rule governing liquidity management strategies is likely to be *heterogeneous* across otherwise similar global banks. While aggregate gross flows can be very large, there may not be an immediately obvious direction associated with the global bank's funding disruption across affiliate locations. Moreover, a host country may be a funding source for a given foreign bank but operate as an investment sink for others.

<sup>2</sup> Claessens and van Horen (2012) find that foreign banks enhance the stability of credit creation in markets where they have majority market share.

<sup>3</sup> In the event of a shock common across developed-country banks, we would expect large gross flows between developed and developing markets.

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