

Capital flows and geographically uneven economic dynamics: a monetary perspective

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Abstract

This paper provides a monetary perspective on capital flows and their effects on geographically uneven economic dynamics. It draws on the heterodox theories of endogenous money creation, asset pricing, and balance sheet fragility, and utilises coherent accounting. Three main claims are made. First, trade imbalances usually are financed endogenously by bank flows that need not originate from surplus regions. Second, capital inflows do not directly drive local credit creation, whereas certain types of gross financial flows can contribute to destabilising financial booms through exchange rates and asset price inflation. Third, sudden stops in capital flows can be entirely unrelated to current account deficits but may trigger financial instability resulting in negative gross flows rather than outflows. For debates in economic geography and heterodox economics on the international sources of financialisation, the argument implies that the focus on surplus countries as originators of destabilising flows can be misleading and that global financial centres are likely to be more important. More attention is needed to gross portfolio and FDI flows into asset markets rather than net flows and loan flows.

Keywords: Gross capital flows, balance-of-payments, current account imbalances, uneven development, financial geography, global finance, financial centres, sudden stop, Minsky

JEL Codes: F31, F32, F36, F41

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1 Introduction

The 2008 Global Financial Crisis (GFC) has led to a renewed interest in finance, financial instability, and financialisation. Especially financialisation, broadly conceived as the increasing role of financial institutions and financial markets for socio-economic processes, has become an interdisciplinary research agenda that has brought together economic geographers, heterodox economists, and other social scientists (e.g. Christophers 2012, Christopherson et al. 2013, Epstein 2015, French et al. 2011, Ioannou & Wójcik 2018, Pike & Pollard 2009, Sokol 2013). However, economic geographers have partly been critical of the concept. French et al. (2011) and Christophers (2012) acknowledge the relevance of financialisation but argue that the literature has failed to fully account for its spatial dimension. By restricting the analytical focus to the national-, firm- or household-level, other spaces like regions or the international financial system had received less attention. More concretely, Christophers (2012, p.279) argues that ‘any identification of fundamental structural shifts in capitalism, such as its “financialisation”, [...] must critically interrogate the full array of international capital flows in which individual “national economies” [...] are embedded’.

Indeed, capital flows, i.e. financial transactions between residents of different geographical units, and their potentially destabilising effects have received some attention by scholars with a critical perspective on financial instability and financialisation. In particular heterodox economists have highlighted the role of capital flows in uneven development in the form of boom-bust cycles in the Global South during the 1990s and early 2000s (Agosin & Huaita 2011, Frenkel & Rapetti 2009, van Hulten & Webber 2009, Ocampo 2016). Such cycles were characterised by large capital inflows, soaring economic activity, and widening current account deficits during booms; and external deleveraging and oftentimes currency crashes during busts. A more recent literature puts forward the notion of an international currency hierarchy (Alami 2018, Bonizzi 2017, Bortz & Kaltenbrunner 2017, Fernandez & Aalbers 2019, Harvey 2019, Kaltenbrunner & Paineira 2015, de Paula et al. 2017). It argues that financialisation takes a ‘subordinate’ form in the Global South, where countries are subject to volatile capital flows as their currencies carry a low liquidity premium and are thus the first to be ditched by international investors during global financial distress.

Destabilising effects of capital flows were also highlighted in economic geographers’ analyses of the 2008 GFC and the 2010-12 Eurozone crisis, which stressed their spatial patterns. French et al. (2009), Lee et al. (2009) and O’Brien & Keith (2009) identified a build-up of

geographical imbalances across countries and regions before the GFC. Large capital flows were associated with current account imbalances, whereby regions with export surpluses such as East Asia and the Middle East sent capital flows into deficit countries, where they contributed to over-leveraging and asset price bubbles. A very similar perspective was applied both by economic geographers (Rossi 2013, Sokol 2013) and heterodox economists (e.g. Stockhammer 2016, Storm & Naastepad 2015) to explain the Eurozone crisis, where it was argued that capital flows from surplus countries fuelled credit booms and current account deficits in the Eurozone's periphery.

Thus, while some analyses of financialisation are certainly guilty of being 'geographically anaemic' (Christophers 2012, p.276), heterodox approaches to capital flows and subordinate financialisation constitute a fruitful point of departure given the inherently spatial character of capital flows. However, the precise workings of those flows have not always been spelled out explicitly. It is often left unspecified which types of capital flows impact trade, credit creation, asset prices, and financial instability, and through what causal mechanisms. In particular, there has been a tendency to simply refer to aggregate capital flows without distinguishing between pure gross financial flows and trade-related net flows, and between different types of flows, such as bank and portfolio flows (e.g. Alami 2018, Clark 2005, Dunford et al. 2013, French et al. 2009, Frenkel & Rapetti 2009, van Hulten & Webber 2009, O'Brien & Keith 2009, Sokol 2013, Stockhammer 2016). This runs the risks of overlooking destabilising effects of certain types of capital flows and their spatial origins. A large proportion of gross financial flows are hidden in the aggregate despite being a potential source of destabilising financial dynamics. Likewise, the focus on net capital flows draws attention to surplus regions, but misses financial centres in deficit regions as potential originators of flows.

This article aims to provide insights into the nature and role of gross financial flows in geographically uneven economic dynamics. By building on heterodox monetary theory, the paper follows Dunford et al. (2013)'s call for more consideration of monetary factors in economic geography. It draws on the theories of endogenous money creation, asset pricing through portfolio choice, as well as Hyman Minsky's theory of financially fragile balance sheets (Minsky 2008). According to the theory of endogenous money, money is created by banks when borrowers demand credit to finance expenditures (Borio & Disyatat 2011, 2015, Deutsche Bundesbank 2017, Lavoie 2014, chap. 4, McLeay et al. 2014, Taylor 2004, chap.8). While only rarely applied in economic geography (see Dunford et al. 2013 for an exception), it will be shown that this theory has profound ramifications for the geographic origin and economic effects of capital flows, as it implies that banks can readily create

purchasing power without having to collect savings from surplus economies. The monetary theory of asset pricing through portfolio choice (Tobin 1969, Godley & Lavoie 2007, Taylor 2004, chap.8) further provides a framework to understand which and how capital inflows influence financial conditions in the receiving regions, and how this can contribute to diverging dynamics of the kind described above. Finally, deepening Dymski (2018)'s and van Hulten & Webber (2009)'s efforts to link a Minskyan theory of financial fragility to economic geography, the paper offers a spatialised Minskyan perspective on how balance sheet fragility can play out across geographically remote units, thereby illuminating the role of capital flows in economic instability. The monetary perspective applied in this paper utilises coherent balance-sheet accounting which helps track 'the flows of value between different social and geographical spaces' as postulated in Sokol (2013, p.510). Stylized but instructive examples will be used to work through the relevant accounting relationships, including the balance-of-payments.

Applying this monetary perspective, the paper makes three main arguments. First, when applied to an international context, the theory of endogenous money implies that trade deficits in a specific region are normally financed endogenously by bank flows that do not have to originate from surplus regions. Second, there is no reason to expect loan inflows to drive local credit creation directly. By contrast, the Keynesian theory of asset pricing implies that gross flows (deposit, portfolio, and FDI) can directly stimulate exchange rates and domestic asset price bubbles. Third, the paper distinguishes net and gross sudden stops in capital flows and argues that the latter can be entirely unrelated to current account deficits, but may trigger Minskyan financial instability resulting in *negative* gross flows rather than outflows.

Our arguments have important implications for economic geography and debates on the international dimension of financialisation. First, they imply that current account surpluses are not a useful indicator for the spatial origins of destabilising flows. Those flows more often than not stem from risk-hungry investors in global financial centres rather than from surplus countries. Second, capital flows can indeed drive local financialisation dynamics but this happens through exchange rates and speculative gross flows into asset markets rather than international credit flows and net flows. The former thus deserve more attention. Third, with respect to policy debates, the regulation of international capital flows should not be confined to bank flows but also consider speculative flows into local assets such as real estate.

The remainder of the paper is organised as follows. The next section lays out the conceptual

basis for defining gross capital flows and reviews how they are represented in the balance-of-payments. Section 3 discusses the fundamental question of balance-of-payments adjustment. Section 4 then asks what, if any, are the effects of capital flows on uneven dynamics, specifically finance-driven booms and trade imbalances. Section 5 turns towards the role of capital flows in sudden stop crises from a Minskyan financial fragility perspective. The last section summarises and discusses the implications for economic geography and heterodox economics.

2 Capital flows in the balance-of-payments

Gross capital flows consist of gross inflows and gross outflows. A gross inflow is defined as a *net incurrence of a liability* vis-à-vis a resident of a different geographical unit, e.g. a British firm selling equity to a US investor. The counterpart to this transaction is the *net acquisition of a foreign asset* (the British share) by a US resident, which is a gross outflow for the USA.¹ Gross capital flows are recorded in the balance-of-payments (IMF 2009). Although balance-of-payments data are only available at the national level, the logic of balance-of-payment accounting can be applied to any geographical unit. The key criterion for a financial transaction to qualify as a capital flow is that the transacting parties are residents of different geographical units. This inherently spatial nature of capital flows makes balance-of-payments accounting a natural tool for tracking their role in geographically uneven dynamics.

The four main types of gross flows are other investment, portfolio investment, foreign direct investment (FDI), and derivatives and employee stock options. Other investment contains cross-border bank flows (loans, deposits) as a key component, but also currency flows, trade and IMF credit, and some residual items. Portfolio investment mostly contains short-term investment in bonds and equity that does not come with a controlling stake. It includes international trade in those securities on secondary markets. By contrast, FDI consists of equity flows that involve a controlling claim in a company (a stake of at least 10%), debt flows (e.g. between a parent company and its subsidiaries), and investment in real estate. Lastly, derivatives and stock options constitute a separate (and difficult to measure) category. We will focus on other investment, portfolio, and FDI flows, which are at the centre of the theoretical channels that will be discussed in this paper.

¹We clarify in section 4 why, despite being called *gross* flows, these are defined as *net* acquisitions/incurrences.

Using this typology, total gross inflows (KIF) can be disaggregated into:

$$KIF = KIF^{OTH} + KIF^{PTF} + KIF^{FDI}, \quad (1)$$

where OTH , PTF , and FDI refer to other investment, portfolio investment, and foreign direct investment, respectively. Gross outflows can be disaggregated accordingly.

Turning to the balance-of-payments, this is usually written as:

$$CA + FA - \Delta R = 0 \quad (2)$$

or in more disaggregated form:

$$\underbrace{X - M + NFI}_{CA} + \underbrace{KIF - KOF}_{FA} - \Delta R = 0, \quad (3)$$

where the current account (CA) records exports (X) and imports (M) of goods and services plus net foreign income (NFI), i.e. foreign earnings minus foreign payments. In the following, we will ignore net foreign income, so that the current account reduces to the trade balance ($TB = X - M$). The financial account (FA) records gross capital inflows (KIF) minus gross capital outflows (KOF). Importantly, the financial account is thus equal to *net* capital inflows ($FA = KIF - KOF$). Finally, changes in the central bank's foreign reserves are denoted by ΔR . The latter typically arise when the domestic monetary authorities intervene in the foreign exchange market to manipulate the exchange rate. If monetary authorities do not intervene, reserves flows are zero ($\Delta R = 0$) and the exchange rate is left to float.

A useful way of re-writing the balance-of-payment is the following:

$$KIF = KOF + (M - X) + \Delta R \quad (4)$$

or equivalently

$$KOF = KIF + (X - M) - \Delta R. \quad (5)$$

These two equations illustrate the different possible uses of a gross inflow and a gross outflow, respectively. A gross inflow can be used to pay for investments in foreign assets, pay for net imports, and build up foreign reserves. By the same token, a gross out-

flow can stem from a gross inflow, from net exports, and from drawing down foreign reserves.

Equations (4) and (5) imply that gross capital flows can be independent from trade flows. In fact, a large proportion of gross flows is entirely unrelated to trade. All incurrences of foreign liabilities that are matched by an acquisition of foreign assets constitute offsetting financial flows do not involve trade. Correspondingly, they also do not involve net flows, which are only a subset of total gross flows. To see this clearly, consider the following example,² which shows what happens on domestic balance sheets and in the balance-of-payments.

Suppose an institutional investor from New York buys a share from a London-based firm. To keep the presentation simple, we use consolidated external balance sheets of the two traders and their respective commercial banks at the country level (Table 1); but we stress that a different level of spatial aggregation could be chosen as well (e.g. the city-level).

Table 1: A US resident purchases a British share

US consolidated		UK consolidated	
Assets	Liabilities	Assets	Liabilities
+Share of British firm (+KOF)	+Deposit of British firm (+KIF)	+Deposit with US bank (+KOF)	+Share of British firm (+KIF)

Notes: A plus (minus) sign denotes an increase (decrease) of a balance sheet item. No sign means the item remains unchanged.

In this case, there is a gross portfolio outflow from the US (investment in a foreign share) that is matched by a gross other investment inflow (increase in deposits held by a British bank). From the UK's perspective, this is a gross portfolio inflow (sale of a domestic liability to a foreigner) that is directly matched by a gross other investment outflow (acquisition of a deposit with a US bank). Thus, gross flows take place, but no net flows: the US's (and

²The examples in this paper are stylized and serve to illustrate key points, but do not aim to reflect the complexity of real-world transactions. Specific regions and countries are only chosen to render the examples more vivid.

UK's) financial account and trade balance remain unchanged:³

$$\underbrace{X - M}_{TB} + \underbrace{\uparrow KIF - \uparrow KOF}_{FA} = 0. \quad (6)$$

The example illustrates the importance to distinguish between offsetting gross flows and net flows. While it is common to simply speak of ‘capital flows’, this usage is imprecise as it does not discriminate between flows that have no net impact on the financial account and the trade balance (i.e. offsetting financial flows) and those that do (i.e. non-offsetting, trade-related net flows). The following discussion will illustrate the importance of this distinction.

3 Capital flows and balance-of-payments adjustment

A first fundamental issue relates to the question of balance-of-payments adjustment (Dunford et al. 2013, Harvey 2019, Thirlwall 2011). If region and countries with different specialisations and cost advantages trade with each other, are there mechanisms that will ensure balanced trade? If not, how can imbalances persist? This seemingly abstract question has important implications for the role of capital flows in geographically uneven economic dynamics discussed below. We will argue that extending the theory of endogenous money to open economies can clarify the issue of balance-of-payments adjustment.

The theory of endogenous money is an essential element of the post-Keynesian branch of heterodox economics (see Lavoie 2014, chap. 4) and has recently also been endorsed by several economists at central banks (Deutsche Bundesbank 2017, McLeay et al. 2014) and the Bank for International Settlements (Borio & Disyatat 2011, 2015). According to this approach, money creation by commercial banks is driven by the demand for credit. Commercial banks endogenously create the desired deposit money and, in turn, may borrow reserves from the central bank to stay liquid without first having to collect the deposits of savers. The central bank sets the short-term interest rate on the interbank market. The lending rate offered by commercial banks is then determined by the interbank rate plus a mark-up that commercial banks charge to compensate for risks. Conditional on their creditworthiness, borrowers obtain as much credit as they wish at the given interest rate. Thus, in monetary economies, the ability of private financial institutions to generate purchasing power is not restricted by resource constraints such as the supply of saving.

³We abstract from changes in reserves in this and the following examples insofar these are not relevant for the mechanism under consideration.

With respect to the issue of balance-of-payments adjustment, the logic of balance-of-payments accounting discussed in the previous section dictates that for constant foreign reserves a change in the trade balance must be accompanied by a change in the financial account, and thus be matched by net capital flows. In this sense, it is trivial to assert that a region that runs a current account deficit receives capital inflows. But what is the direction of causality between trade flows and net capital flows? Geographical narratives according to which current account imbalances stem from surplus economies that ‘recycle’ their surpluses in the form of capital flows abroad (e.g. French et al. 2009, Lee et al. 2009, O’Brien & Keith 2009) may implicitly suggest that the causality runs from net capital flows to the trade balance. While a different interpretation of this narrative will be explored below, let us first evaluate this view.

A desired (net) import can only be realised if it can be financed. Thus, the creditor has the ultimate power to decide whether a net import can go ahead. However, is this constraint normally binding? Can a creditor force a potential importer to import? From the perspective of the theory of endogenous money, the answer is no. Insofar credit creation is demand-driven, it is implausible that a creditor can force a debtor to borrow. In a monetary economy with an elastic supply of credit, trade flows should usually lead to accommodating net capital flows (Taylor 2004, chap.10, Harvey 2019, Lavoie 2014, chap. 7).

One of the clearest expositions of this view can be found in Lavoie (2014, chap.7), who argues that changes in the current account are normally accommodated by bank loans and deposits through endogenous money creation by commercial banks. Insofar banks deem borrowers creditworthy and have access to liquidity from their central banks, commercial banks accommodate foreign demand for credit. In an international context, this means that trade flows are normally financed endogenously by bank flows, which are a component of the other investment category of capital flows.

Proposition 1 *Trade deficits are normally financed endogenously by net capital inflows. Surpluses in a region are an outcome of trade deficits in another region.*

Consider an example that illustrates the endogenous financing of trade flows. Suppose a British supermarket imports Spanish olive oil (Table 2). This is an import that reduces the UK’s current account. The importer’s bank may obtain euros through an interbank loan from the Spanish bank, which expands its balance sheet accordingly. The British bank can

then use these funds to supply the supermarket with the necessary euros for the import.⁴ This is a gross other investment inflow for the UK that is not matched by a gross outflow and thus implies a net capital inflow.⁵

Table 2: British supermarket imports Spanish olive oil

Bank of British importer		Bank of Spanish exporter	
Assets	Liabilities	Assets	Liabilities
	–Deposit of supermarket	+Euro loan to British bank (+KOF)	+Deposits of olive oil exporter
	+Interbank loan in euros (+KIF)		

In the UK’s balance-of-payments, the transaction leads to a fall in the trade balance and an increase in the financial account:

$$\underbrace{X - \uparrow M}_{\downarrow TB} + \underbrace{\uparrow KIF^{OTH} - KOF}_{\uparrow FA} = 0. \tag{7}$$

Two important insights follow from this example. First, the British bank may borrow euros from the Spanish bank *before* the import takes place. The Spanish bank thus creates the necessary financing for the British importer without any prior exports. The net capital flows are thus the outcome, not the cause of this transaction. By the same token, Spain’s export surpluses arise at the end of this process. Second, the net capital inflow to the UK has not created any additional resources that could be lent out domestically. For the British bank, the loss of a liability (the supermarket’s deposit) was simply compensated by another liability (interbank loan from Spanish bank). The size of its balance sheet is unchanged. Thus, there is no reason to assume that net capital inflows accelerate domestic credit expansion (Borio & Disyatat 2015). We will return to the link between capital flows and domestic credit creation in the next section.

Are there any equilibrating mechanisms that ensure a balanced current account (and thus zero net flows) over longer periods? In their discussion of trade and regional development,

⁴In reality, this may be accomplished via so-called nostro/vostro accounts that internationally active banks hold with each other (see, e.g., Lavoie 2014, pp.458-462). For the sake of brevity, we abstract from this complication here.

⁵Alternatively, if the British bank already had euro deposits, it could have drawn down these deposits; this would have been a negative other investment outflow.

Dunford et al. (2013) hold that (regional) trade deficits can be financed by international credit, but suggest that there are constraints over longer periods. Similarly, according to the post-Keynesian theory of balance-of-payments constrained growth (Thirlwall 2011), trade must be balanced over the long run, and economic growth must be consistent with this requirement. The (implicit) assumption is that fast-growing deficit countries may eventually undergo a stop in capital inflows, when foreign creditors refuse to finance further current account deficits and the central bank runs out of foreign reserves. In this case, they are forced to rebalance their current accounts which will typically require a slowdown in economic growth. Historical examples of balance-of-payments crises indeed suggest that most countries cannot run ever rising external debt ratios, especially in the Global South. However, these are infrequent and extreme events that typically occur in specific historical and economic contexts, especially when countries maintained fixed exchange rate regimes that had become unsustainable (Goldfajn et al. 1995). While the existence of such crises points to limits to an endogenous financing of trade deficits, they are not inconsistent with such financing under normal conditions.

The bottom line is that in normal times, trade flows are financed endogenously by corresponding net flows. Those net flows do not cause the trade flows but are merely their flip side. The exporting party's capacity to provide the necessary financing for the transaction is completely independent from any prior export surpluses. Export surpluses are the *outcome* of trade transactions that are financed by the creation of purchasing power through banks. Sudden stops in capital flows, which will be discussed in more detail in section 5, can temporarily disrupt the endogenous financing of trade flows, but are the exception rather than the norm.

4 Capital flows, trade imbalances, and geographically uneven financial booms

If net capital flows normally adjust endogenously, do capital flows have any causal effects? We will argue that gross capital flows do influence economic and financial dynamics, but it is important to distinguish different types of flows to understand the potential theoretical channels. More specifically, capital flows do not directly drive domestic credit creation but impact financial booms through asset markets. Let us start by examining a common theoretical view about the role of (net) capital flows in imbalances and uneven credit booms

across countries and regions.

4.1 Capital flows, imbalances, and credit creation

According to a common view expressed succinctly in French et al. (2009, p.295), ‘[t]he geographical recycling of surpluses and deficits has always been critical to the production of financial booms and their eventual collapse’. This idea has been applied both to the 2008 GFC and the 2010-12 Eurozone crisis. With respect to the GFC, Lee et al. (2009, p.741) argue that the recycling of surpluses from exporting economies in Asia and the Middle East ‘provided the energy and material for the build up of bubble in asset prices in the west’. Similarly, O’Brien & Keith (2009, p.248) claim that ‘[t]he free flow of capital eventually led to the current account imbalances that led to a global savings glut being recycled into the USA and UK financial sectors; a necessary condition for households and the banking sector to become highly leveraged.’ Similar narratives were proposed to describe the run-up to the Eurozone crisis. According to Sokol (2013, p.510), ‘Germany’s current account surplus has been recycled as bank lending in the European periphery [...] creating housing bubbles and debt-driven consumption booms’. Rossi (2013, p.382) claims that core countries with current account surpluses were ‘providing to “peripheral” countries in the euro area an increasing volume of savings in order to pay for their [...] domestic expenditure’.

From the perspective of the theory of endogenous money, there are two issues with this narrative. First, it is misleading to suggest that the net inflows into deficit countries stemmed from surplus countries’ savings. As shown in the previous section, surpluses from net exports arise at the end of an endogenous financing process. They are not a precondition for net flows to take place. In this sense, the metaphor of a ‘recycling of surpluses’ is not helpful as it suggests that money was a scarce resource. This distracts from the fact that, in monetary economies, banks can endogenously generate purchasing power and do not need to recycle existing funds. More importantly for the geographical dimension of capital flows, the claim that net inflows into deficit countries (regions) must come from surplus countries (regions) is not necessarily correct in a multi-spatial environment. While in a world with only two regions, a trade deficit of region A must be matched by a net capital inflow from region B, this does not hold in a world with $n > 2$ regions.

Proposition 2 *A trade deficit vis-à-vis region B does not imply net capital inflows from region B.*

Consider an example from the Eurozone; but an analogous scenario could apply across currency areas and different regions. A Spanish firm imports goods from a German firm (Table 3). The Spanish firm’s bank decides to borrow from a French instead of a German bank to compensate for its loss in deposits. In this case, Spain receives a net inflow from France, not Germany. In turn, the German bank may lend money to the French bank and thus records a net outflow to France, not Spain. Net flows do not change for France, but it increases its financial integration vis-à-vis Spain and Germany without being involved in the trade at all.

Table 3: Spain imports from Germany and receives net inflows from France

Spanish bank		French bank		German bank	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
	–Deposits of Spanish importer				+Deposits of German exporter
	+Interbank loan from French bank (+KIF)	+Interbank loan to Spanish bank (+KOF)	+Interbank loan from German bank (+KIF)	+Interbank loan to French bank (+KOF)	

The example calls for caution with the assumption that a region with a trade deficit vis-à-vis another region is also indebted to that country. Likewise, it illustrates that a country can have a relatively balanced trade account but exhibit substantial financial exposure to other countries (France in this example). Hobza & Zeugner (2014) present empirical evidence on gross flows in the Eurozone and conclude that current account deficits were mostly financed by surplus countries, but also by countries with large financial centres like Paris and London. Similarly, Borio & Disyatat (2011, 2015) show that in the run-up to the GFC, gross capital inflows to the USA from Europe, especially from the deficit country UK, outstripped the flows from East Asian surplus countries. This suggests that large financial centres are often more important originators of risky financial flows than surplus countries.

A second issue with the narrative outlined above is that it is not clear why countries would need capital inflows to finance a domestic credit boom. As demonstrated in the previous section, net capital flows finance trade deficits but do not have any direct implications for domestic lending. Indeed, as shown in Febrero et al. (2019), while Spanish banks did

borrow abroad in European money markets in the run-up to the GFC, these funds were used to finance net imports and acquire foreign assets (especially FDI). Inflows were not a precondition to finance the Spanish real estate bubble but rather a consequence.

Proposition 3 *Capital inflows do not directly drive local credit creation since banks do not need to borrow abroad to make loans.*

Why do domestic credit booms then often come with (net) capital inflows? Credit booms are often driven by bubbles in local asset markets, such as real estate in the US and Spain before the GFC. We will explain below how certain types of capital flows other than bank loans can play a role in stimulating such bubbles. Empirical research shows that rising asset prices in turn boost economic activity through (residential) investment and wealth effects (Stockhammer & Wildauer 2015). A boom in economic activity then also increases imports, leading to a worsening current account position that must be matched by net capital inflows. Guschanski & Stockhammer (2020) present empirical evidence that domestic property prices are strong drivers of current accounts (and by extension net capital flows).

In summary, this suggests that some narratives of global imbalances would benefit from a more careful consideration of the nature of capital flows in monetary economies. First, while large capital inflows into the US and the European periphery were a striking feature of the period before the GFC, their causal relevance for rising trade imbalances and credit booms is much less obvious than often suggested. Second, the geographic focus on surplus economies as the origin of destabilising flows is not always helpful in an global economic system in which banks do not need to collect savings to generate financial resources. Instead, the presence of large financial centres is often a better indicator for the capacity of a region to generate large capital flows into other regions. Indeed, the relevance of financial linkages between London and New York, two major financial centres located in *deficit* countries, for the GFC was emphasised by economic geographers (Wójcik 2013).

4.2 Capital flows and asset price booms

If capital flows do not directly drive local credit creation, how do they affect domestic financial dynamics? One branch of the heterodox literature discusses the ‘subordinated financialisation’ of countries in the Global South and highlights the speculative and volatile

nature of short-term capital flows (Alami 2018, Bonizzi 2017, Bortz & Kaltenbrunner 2017, Fernandez & Aalbers 2019, Kaltenbrunner & Paineira 2015, de Paula et al. 2017). Due to their lower position in the international currency hierarchy, currencies of economies in the Global South carry lower liquidity premia than currencies that fulfil international money functions like the US dollar. As a result, they are the first that international investors located in financial centres will abandon in periods of international financial distress. These episodes may lead to abrupt currency depreciations and hikes in domestic interest rates, imposing severe constraints on national policy-makers. Likewise, periods of increased risk appetite in international financial centres come with higher demand for riskier assets issued in the Global South, leading to currency appreciation and lower interest rates. Importantly, this literature implicitly shifts the focus from surplus countries as the originators of destabilising capital flows to international financial investors.

The literature on subordinated financialisation thus focusses on gross financial flows that are unrelated to trade, and typically distinguishes short-term flows, which are speculative and volatile, from more stable long-term investment-oriented flows. However, it rarely distinguishes between different types of financial assets. For example, is the rate of interest that adjusts to changes in international risk appetite the rate on deposits or bonds? A more fine-grained differentiation of different types of flows would help clarify the theoretically expected effects of offsetting financial flows on uneven financial dynamics. Before we can discuss those channels, we need to explain how the frequently taken aggregate perspective on capital flows can conceal important aspects. In fact, many gross capital flows net out in the balance-of-payments when examined on an aggregate basis.

Proposition 4 *Aggregate gross capital flows are not truly gross and conceal many international financial transactions.*

Consider the example of a US investor who wants to invest in Brazilian financial assets, perhaps because of their comparatively high returns. In the first instance, the investor will go on the foreign exchange market to convert US dollar deposits into deposits in Brazilian real (see Table 4). In return, a Brazilian bank obtains US dollar deposits. This transaction leads to matching gross (other investment) inflows and outflows for both countries (first row of Table 4).

Table 4: US investor purchases Brazilian financial assets

Brazil consolidated		US consolidated	
Assets	Liabilities	Assets	Liabilities
+US-dollar deposit (+KOF ^{OTH})	+Deposit of US bank (in real) (+KIF ^{OTH})	+Deposit with Brazilian bank (in real) (+KOF ^{OTH})	+ US-dollar deposit of Brazilian bank (+KOF ^{OTH})
US-dollar deposit	–Deposit of US bank (in real)(–KIF ^{OTH}) +Brazilian corporate bond(+KIF ^{PTF})	–Deposit with Brazilian bank (in real) (–KOF ^{OTH}) +Brazilian corporate bond (+KOF ^{PTF})	US-dollar deposit of Brazilian bank
US-dollar deposit	–Brazilian corporate bond (–KIF ^{PTF}) +Brazilian government bond (+KIF ^{PTF})	–Brazilian corporate bond (–KOF ^{PTF}) +Brazilian government bond (+KOF ^{PTF})	US-dollar deposit of Brazilian bank

In the next step, the investor decides to invest these deposits in a corporate bond from the Brazilian petroleum company Petrobras (second row). Importantly, although this clearly is an international financial transaction, no gross flows take place on an aggregate basis. The reason for this is that while Brazil has increased its foreign liabilities by selling a bond to a foreigner, it has also reduced its foreign liabilities (the deposit held by the US investor). However, at a more disaggregated level, these flows are recorded in Brazil's balance-of-payments as a positive portfolio inflow and a negative other investment inflow:

$$\underbrace{X - M}_{TB} + \underbrace{(\uparrow KIF^{PTF} + \downarrow KIF^{OTH})}_{FA} - KOF = 0. \quad (8)$$

Finally, suppose the US investor decides to exchange the corporate bond from Petrobras with a Brazilian government bond (third row of Table 4). In this case, a foreign asset is exchanged against a foreign asset *within* the same asset category (portfolio bond flows). Correspondingly, no net acquisition of foreign assets has taken place and thus no gross flows, not even on a disaggregated basis. This results from the fact that gross outflows are defined as *net* acquisition of foreign assets (see section 2).

Importantly, although some of these transactions may not appear in (aggregate) measures

of gross flows, they can still impact financial dynamics. The first transaction depicted in Table 4 is likely to put upward pressure on the Brazilian real, since – everything else constant – the Brazilian bank has no excess demand for US dollars. The US bank may thus have to offer its dollars for a better price (i.e. a more depreciated dollar-real exchange rate) to convince the Brazilian bank to buy. Thus, the Brazilian real appreciates in response to an offsetting financial flow that, by itself, has no impact on the trade balance and net capital flows. Furthermore, the conversion of the deposit into Brazilian bonds is likely to not only appreciate the Brazilian currency, but also to depress bond yields. Again, this transaction can be hidden in aggregate measures of Brazil’s gross inflows, which underlines the importance of analysing disaggregated flows.

The example raises the question how different financial flows impact domestic financial dynamics. The monetary theory of asset-price determination through portfolio choice is helpful in this regard. Initially developed by James Tobin (1969), it has been integrated into the post-Keynesian branch of heterodox economics (Godley & Lavoie 2007, Taylor 2004, chap.8), and recently been revived by researchers at the International Monetary Fund (Blanchard et al. 2017). In this approach, the prices of different financial securities such as government bonds and corporate shares are determined on secondary financial markets by the demand of wealth holders seeking profitable portfolios. A typical result is that exogenous changes in the preferences or expectations of wealth holders, e.g. their preference for internationally liquid assets like the US dollar, translate into changes in either the quantity or the rate of return on assets. Whether there is quantity or price adjustment will depend on the nature of the financial asset.

Consider first cross-border bank loans and deposit inflows as a key component of other investment. They provide domestic borrowers with foreign currency liquidity that can be used to finance net imports or to acquire foreign assets. From the perspective of endogenous money theory, these inflows are driven by the demand for foreign currency. Importantly, they are unlikely to affect the rate of return on loans, as the domestic interbank rate is fixed by the central bank. Lending rates are then determined by commercial banks that add a mark-up on the interbank rate to compensate for risk (Borio & Disyatat 2011, Lavoie 2014, chap.4).⁶ While the price of loans is thus fixed, their supply is elastic. Thus, there is no reason to expect direct causal effects of loan inflows on domestic lending. While financial booms are typically accompanied by credit creation and increased international interbank

⁶Risk premia on domestic rates set by internationally active banks may be correlated with global risk perceptions.

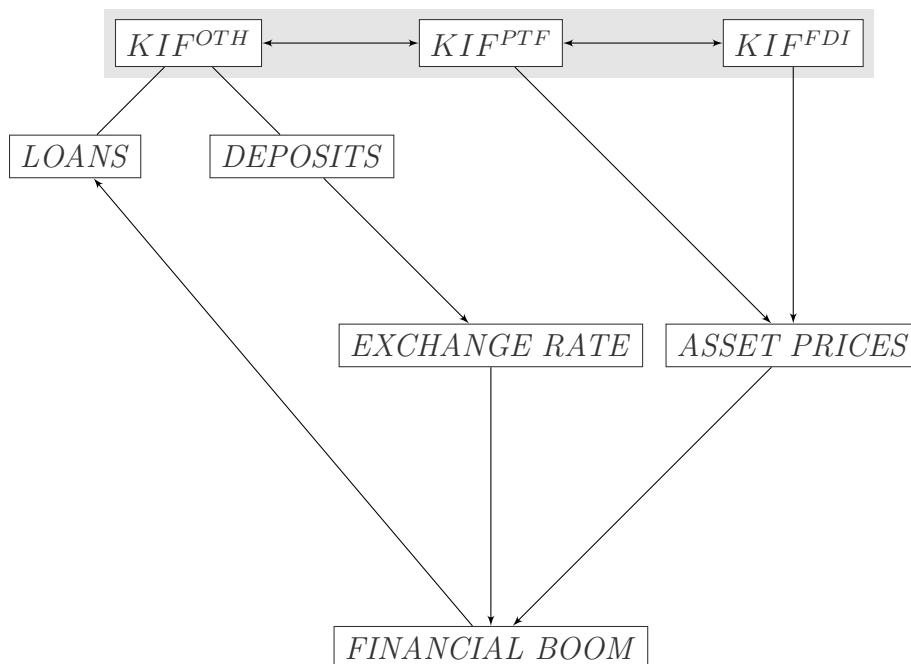
lending, which can contribute to a build-up of financial fragility, these flows are unlikely to be the direct source of the boom. By contrast, deposit flows arise in the context of foreign exchange trading, which can impact exchange rates. If there are currency mismatches on local balance sheets, exchange rate appreciation can lead to wealth effects that stimulate investment and borrowing (Kohler 2019, Ocampo 2016). Importantly, this mechanism operates through the exchange rate as an asset price rather than the supply of international loans.

Next, consider portfolio investment. In contrast to loans, securities like bonds and shares are traded on secondary markets and have flexible prices that determine their rates of return. An exogenous change in the risk appetite in global financial centres can thus lead to portfolio inflows that push up local asset prices. In the case of portfolio bond inflows, this may drive down long-term interest rates.⁷ Likewise, sales of domestic bonds by foreigners may raise long-term rates, as highlighted in the literature on subordinated financialisation (Alami 2018, Bonizzi 2017, Bortz & Kaltenbrunner 2017, Kaltenbrunner & Paineira 2015, de Paula et al. 2017). Portfolio equity inflows can inflate stock prices. Thus, unlike international loan flows, surges in portfolio inflows are a potential exogenous source of local financial booms.

Finally, insofar FDI flows are related to mergers and acquisitions or the reallocation of funds within multinational corporations, FDI is unlikely to drive local financial booms. However, an aspect that is often overlooked is that FDI inflows also contain real estate acquisitions by foreigners and can thereby directly contribute to domestic house price inflation (see Badarinza & Ramadorai 2018 and Li et al. 2020 for empirical evidence). This channel has received less attention but is highly relevant for the claim that capital inflows can fuel housing bubbles (Lee et al. 2009, Fernandez & Aalbers 2019).

⁷See Warnock & Warnock (2009) for empirical evidence on the USA.

Figure 1: Types of gross capital inflows and their effects on local financial booms



Notes: KIF^{OTH} : other investment inflows; KIF^{PTF} : portfolio investment inflows; KIF^{FDI} : foreign direct investment inflows.

Proposition 5 *Locally destabilising effects of gross capital inflows mainly operate through exchange rates and asset markets. Portfolio inflows can reduce bond yields and push up share prices, inward FDI can contribute to property price bubbles, whereas bank flows mostly influence exchange rates.*

Figure 1 illustrates the main argument. To understand how (offsetting) financial flows impact local financial booms, it is important to distinguish different types of flows. The mere reference to capital flows in the aggregate is not helpful, first, because a lot of gross flows cancel out in the aggregate and, second, because different gross flows are likely to have different effects.

5 Gross flows and sudden stop crises

After the boom comes the bust. But again, the exact role of capital flows for the bust phase is not always spelled out clearly. In the narrative of capital-flow driven imbalances outlined at the beginning of the previous section, there is the assumption that current account deficits are ultimately unsustainable and lead to crises. Concerning the trigger of the bust,

the literature often refers to the notion of a ‘sudden stop’, i.e. an abrupt drying-up of capital inflows (Agosin & Huaita 2011, Dymski 2018, Frenkel & Rapetti 2009, van Hulten & Webber 2009). The common perception of a sudden stop refers to net capital flows: a country runs a trade deficit; at some point foreign creditors refuse to supply further credit, i.e. there is a stop in net inflows, and the country is forced to reduce its deficit as soon as it runs out of foreign reserves.

An issue that has received less attention is that sudden stops can also arise with offsetting gross financial flows, in which case they may play out differently for the affected economy. To understand how, it is useful to analyse the economy as a ‘set of interrelated balance sheets’ (Minsky 2008, p.116) as proposed by post-Keynesian economist Hyman Minsky. Recently, Dymski (2018) and van Hulten & Webber (2009) integrated Minskyan perspectives into economic geography. According to this approach, the composition of gross assets and liabilities is crucial as it determines the capacity of economic units to meet their financial payment commitments. Financial fragility arises from risky balance sheet structures that compromise debtors’ ability to generate the necessary liquid funds to meet payments obligations. We will apply this approach to international financial commitments across spatially remote actors to understand how sudden stops in gross capital flows play out.

Proposition 6 *A sudden stop in capital flows plays out differently for net and gross flows. Gross sudden stops are related to fragile external balance sheets and can occur even if current accounts are balanced.*

Consider first the classic version of a sudden stop which we will refer to as a *net sudden stop*. Suppose a Brazilian firm wishes to import goods from a US exporter of machinery. However, due to Brazil’s sizeable current account deficit, the Brazilian banking system is no longer deemed creditworthy and therefore not able to borrow the necessary US dollars from abroad. At the same time, the Brazilian central bank has run out of foreign reserves that could be used to finance those imports. In this case, the importers’ bank would have to decline the transaction and the import cannot go ahead. This is the classic case discussed in section 3, where a country hits its balance-of-payments constraint and is forced to reduce its trade deficit:

$$\underbrace{X - \downarrow M}_{\uparrow TB} + \underbrace{\downarrow KIF - KOF}_{\downarrow FA} = 0. \quad (9)$$

Next, consider a different scenario where for the sake of illustration Brazil’s current account is balanced, but its banks have previously engaged in risky portfolio outflows

by investing in long-term collateralised debt obligations (CDOs) issued in the US. These were financed by short-term loans from US money markets that need to be rolled over regularly (first row of Table 5). Now suppose the Brazilian banking system is suddenly unable to roll over these short-term external debts, perhaps because of a breakdown of trust on the side of lenders. In this case, it will have to sell its CDOs (or other foreign assets) to wind down its short-term liabilities vis-à-vis the US money market (second row), leading to a *negative* gross inflow. As a result, a sudden and considerable reduction in gross inflows *and* outflows between Brazil and the US occurs: a *gross sudden stop*.

Table 5: Gross sudden stop: US bank refuses to refinance Brazilian investment in US assets

Brazilian banking system		US banking system	
Assets	Liabilities	Assets	Liabilities
US CDO (long-term)	Loan from US money market (short-term)	Loan to Brazil	CDO
–US CDO (long-term) (–KOF)	–Loan from US money market (short-term) (–KIF)	–Loan to Brazil (–KOF)	–CDO (–KIF)

Notes: CDO: Collateralised Debt Obligation.

Importantly, the gross sudden stop is entirely unrelated to Brazil’s current account position. It may occur although Brazil has a balanced current account, as assumed in this example. Likewise, the gross sudden stop has no instantaneous implications for Brazil’s trade:

$$\underbrace{X - M}_{TB} + \underbrace{\downarrow KIF - \downarrow KOF}_{FA} = 0. \tag{10}$$

However, it might come with severe distress in the Brazilian banking sector and is likely to put downward pressure on the exchange rate. Through a decline in aggregate income, the gross sudden stop can then also impact the current account. But the mechanism is different and much less tight compared to the net sudden stop. It is therefore essential to appreciate the relevance of gross financial positions across space that are unrelated to trade. In reality, real-world sudden stops are often a combination of both. Cavallo et al. (2015) present empirical evidence that pure gross sudden stops that do not come with a sharp adjustment in current accounts do occur too and were most prevalent in the Global North between 1980

and 2000.

A final remark relates to the frequent association of external financial crises with rising capital *outflows* (e.g. Frenkel & Rapetti 2009, van Hulten & Webber 2009, Kaltenbrunner & Paineira 2015). From the Minskyan perspective adopted here, domestic residents' external assets are much more likely to *decrease* during crises as they are sold to meet external payment commitments. This issue may be compounded by foreign investors reallocating funds into high-quality currencies by selling domestic securities back to domestic residents. These dynamics result in *negative* out- and inflows as shown in Table 5.

Proposition 7 *Gross capital inflows can become negative, especially during financial crises when local residents deleverage and foreign investors rush into high-quality assets.*

To conclude, gross flows can play a distinct role from trade-related net flows, not only during economic booms but also in busts. A Minskyan analysis of the balance sheets of geographically distinct actors and their interrelations through different types of external assets can help identify financial stability risks beyond the frequently cited unsustainable current account deficits.

6 Conclusion

This article has aimed to show that heterodox monetary theory provides tools for a more precise understanding of the role of capital flows in geographically uneven dynamics. Applying the theory of endogenous money creation to an international setting, it was argued that trade deficits are normally financed endogenously through the creation of purchasing power by banks, which is reflected in net capital flows. Although net flows are thus endogenous, gross flows can still drive destabilising financial dynamics, but this mostly works through asset markets rather than international lending. Drawing on the theory of asset pricing through portfolio choice, we posited that offsetting financial flows can influence exchange rate- and local asset-price dynamics. Specifically, portfolio inflows can drive down long-term interest rates and push up share prices, whereas FDI flows can inflate property prices. By contrast, cross-border bank flows do not directly affect local interest rates and asset prices as short-term rates are determined by monetary policy, but may influence exchange rate dynamics. Finally, we argued that sudden stops in *gross* flows can be a major source of instability even if current accounts are balanced, and often come

with external deleveraging reflected in *negative* gross flows.

Our analysis has three main implications for debates in economic geography and heterodox economics on the international dimension of financialisation. First, the theory of endogenous money implies that a large proportion of gross capital flows across geographic units is independent of these units' surplus or deficit position. For the debate on current account imbalances and the Global Financial and Eurozone crisis (French et al. 2009, O'Brien & Keith 2009, Lee et al. 2009, Rossi 2013, Sokol 2013, Stockhammer 2016, Storm & Naastepad 2015), this means that the exclusive focus on surplus countries like China and Germany as the spatial origin of destabilising flows has been somewhat misleading. The presence of large financial centres like New York, London and Paris is a better indicator for a country's or region's capacity to originate speculative capital flows, vindicating geographical research on financial centres (e.g. Wójcik 2013, Wójcik et al. 2018). Similarly, the debate would benefit from greater consideration of gross financial flows as opposed to (trade-related) net flows. This includes allowing for the possibility of sudden stops in gross capital flows that are related to risky external balance sheets independently of current account deficits. Such a perspective would deepen existing efforts to integrate Minskyan concepts of financial fragility into economic geography (Dymski 2018, van Hulten & Webber 2009).

Second, the monetary theory of asset pricing implies that cross-border credit flows are more likely to be an outcome of geographically uneven dynamics than a cause. By contrast, gross portfolio and FDI flows can be an exogenous force of instability. For the debate on the international sources of local financialisation dynamics (Agosin & Huaita 2011, Alami 2018, Bortz & Kaltenbrunner 2017, Fernandez & Aalbers 2019, Frenkel & Rapetti 2009, van Hulten & Webber 2009, Ocampo 2016, Sokol 2013) this implies that it is important to differentiate not just between short- and long-term financial flows, but also between different types of financial assets. It is vital to appreciate the special nature of financial and real estate assets that are traded on secondary markets, making them prone to speculative dynamics. Flows into local asset markets therefore deserve more attention as potential drivers of unsustainable booms than bank flows.

Third, concerning policy debates about capital account liberalisation versus capital controls (Bortz & Kaltenbrunner 2017, van Hulten & Webber 2009, Ocampo 2016), our argument suggests that regulations that reduce balance sheet fragilities, such as Chile's efforts in the 1990s to diminish currency mismatches in the banking sector, can indeed be helpful. However, given their potential role as exogenous drivers of asset price bubbles, speculative

portfolio and FDI flows may require stricter controls beyond existing regulations of bank flows.

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