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Critical macro-finance: A theoretical lens

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This contribution outlines four propositions of the critical macro-finance (CMF) approach: (1) US-led financial globalization has structurally evolved around market-based finance, driven by the production of new asset classes and the Americanization of national financial systems with changing practices for producing liquidity; (2) global finance is a set of interconnected, hierarchical balance sheets, increasingly subject to time-critical liquidity; (3) credit creation in market-based finance involves new forms of money (systemic liabilities); and (4) market-based finance structurally requires a derisking state, for both systemic liabilities and for new asset classes. The precise contours of the derisking state are determined through political struggles.

CMF focuses on the co-evolution of global finance and the macro-institutions of the state, in the tradition of Hyman Minsky (1957) and, more recently, Adam Tooze's (2018) analysis of the global financial crisis. The *macro-finance* in CMF draws on Keynes and Minsky as theorists of capitalist finance (Mehrling, 2000; see also Bonizzi and Kaltenbrunner, 2020). The capitalist economy requires financing of new capital assets with private money. For Keynes and Minsky, growth, business cycles, and economic instability are outcomes of the interaction between changing views about the future price of assets and the *liability structures* – or liquidity practices (Beggs, 2012) – financing those assets (Proposition 1). Debt and money are evolving, hierarchical balance sheet relationships (Propositions 2 and 3), rendered endogenously fragile by the constant search for new liquid liabilities (Proposition 1), for new ways of monetizing credit (Kindleberger, 1978). Instability becomes explosive as the institutional fixes that curtail or contain endogenous fragility – such as wage legislation, anti-monopoly regulations, or monetary policy and lender of last resort functions – lose effectiveness over time, weakened by profit-seeking agents (Dafermos et al., 2020).

Thus, in Proposition 1, CMF identifies the structural specificities of late twentieth-century financial capitalism, which increasingly organises credit creation through securities markets, collateral-based money, and derivative markets (Gabor, 2016; Tooze, 2018; Birk and Thiemann, 2020), moving in step with the rhythms of the US dollar global financial cycle (Rey, 2015). Varyingly referred to as 'money manager capitalism' (Wray, 2011), 'collateral-intensive finance' (Smaghi, 2010), 'shadow banking' (Ban and Gabor, 2016), or the 'age of asset

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management' (Haldane, 2014), market-based finance does not render banks obsolete, but rather changes their balance sheets as they undertake proprietary trading and market-making activities in securities, repurchase, and derivative markets (Hardie and Howarth, 2013; Gabor and Ban, 2016). CMF reads the turn to market-based finance in US-dominated financial globalization as a structural manifestation of deeper political processes – such as growing inequality, the erosion of welfare and tax states, and the rise of aggressive leverage practices – which combined, produce a structural need for new asset classes and liquid liabilities to fill ever-growing, often global, balance sheets. Drawing on the literature on US structural power (Konings, 2007; Fichtner, 2017), CMF points to the Americanization of local financial systems, that is, the export of the US model of financial capitalism with its evolving liquidity practices, to accommodate this growing demand.

In studying global finance as a set of hierarchical balance sheets and evolving liquidity practices, CMF overlaps significantly with, and draws on, Perry Mehrling's *money view* (Mehrling, 2013; 2017). It departs from the money view in historicizing the rise of dollar-dominated market-based finance; in analytically connecting financial structure to the macro-institutions of the state; and in approaching this co-evolution as an outcome of deeply political processes through which global finance seeks (and often obtains) state protection for systemic liabilities, as well as support for the development of new asset classes (Karwowski, 2019, Dafermos et al., 2020).

To trace the political struggles over institutional updating (Proposition 4), the *critical* in critical macro-finance turns to International Political Economy (IPE) scholarship that connects macro-financial institutions and ideas (Blyth, 2003; Ban, 2016; Blyth and Matthijs, 2018). In explaining institutional reactions as political outcomes (Helgadóttir, 2016; see also Knafo, 2020), CMF elaborates on accounts of the institutional grounding of structural power (Konings, 2007), focusing analytical attention on infrastructural entanglements between private finance and the state in those markets where monetary and debt management policies are implemented (Braun, 2018; Braun and Gabor, 2019).

In short, CMF opens up an emerging research agenda that takes as its starting point the contemporary transformation of global finance, and fleshes out the consequences of this for our understanding of liquidity, of credit and money creation practices, of power in its monetary and (infra)structural guises, and of crises and institutional responses to these.

Proposition 1

US-led financial capitalism has evolved around market-based finance, anchored in changing practices for producing liquidity

The standard IPE story of financial globalization examines the Americanization of finance, shaped by the structural power of the US. Structural power extends from the Federal Reserve's role as global lender of last resort (Helleiner, 2016), via swap lines for the dollar-intensive balance sheets of non-US banks (Schwartz, 2019), to the dominance of the US dollar in foreign reserves, Eurodollar, and capital markets, and of US firms in foreign direct investment, global banking, and institutional investment (Fichtner, 2017).

Structural power in global finance is anchored institutionally. For Konings (2007), the Americanization of global finance, which allows the US to sell dollar debt, was accelerated by Volcker's turn to monetarism and financial innovation focused on developing liquid securities markets. In parallel, a growing literature on subordinated or dependent financialization has

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documented the financialized (carry-trade) practices of banks, households, and (financial) firms in non-US financial systems. These practices increase dependency on US dollar funding conditions (Rey, 2015), exacerbating financial fragility and complicating macroeconomic management (Gabor, 2013; Bortz and Kaltenbrunner, 2018). Yet such accounts of the institutional foundations of US structural power, and of its diffusion via dependent financialization, tend to downplay the *evolving* practices entailed in producing liquidity for market-based finance.

To fill in the gap, CMF follows Minsky (1957) in scrutinizing financial markets for evolutionary changes in liquidity structures. These changes render monetary policy less effective or constrain fiscal policy through the collateral function of sovereign debt (Gabor, 2016), while simultaneously sowing the seeds of endogenously fragile finance (Sissoko, 2019). CMF thus points to evolving liquidity regimes (Sgambati, 2016; Pape, 2020), from the imperative of the repo-liquid sovereign of the 1990s, to resilient systemic liquidity through the sovereign safe asset of the 2000s, to the rise of Exchange Traded Funds (ETFs) in the 2010s and, most recently, of green finance in the 2020s. These regimes are typically pioneered in the US then 'exported' to the rest of the global dollar system.

Take the repo-liquid sovereign imperative. Here CMF recasts the familiar 'Americanization of finance' story as the story of the plumbing for securities markets: the repo and derivatives markets where securities are financed, borrowed for shorting, hedged, or speculated on. It is the practices for circulating securities collateral in these markets that construct liquidity (Gabor and Ban, 2016), and it is the state that codes liquidity practices into law, *a la* Pistor (2019), as Volcker persuaded Congress to do for US sovereign bond repos in 1984.

The battle of ideas behind the rise of 'liquid' market-based finance in the 1980s and 1990s is less studied, perhaps because the political language of low interest rates required by the Big Keynesian State morphed into the (obscure) technical macro-financial language of liquidity (Dutta, 2018). Briefly, repo financiers, once systemic actors in nineteenth-century US financial capitalism (Youngman, 1906), were euthanized by Roosevelt's Great Depression banking regulations, only to return with the 1991 Salomon Brothers manipulation of the US Treasuries repo market. The ensuing public inquiry celebrated repos as a crucial liquidity innovation for sovereign bond markets in macro-regimes no longer organized by Keynesian institutional logics: governments that had lost access to their central banks could instead turn to repo markets to ensure liquidity for their sovereign debt (Gabor, 2016). The co-evolution of repo-based finance and fiscal policy ushered in the age of market liquidity, the quest for securities that could be instantly converted into cash without changes in price, and for monetary relationships built on liquid securities collateral.

Thus, CMF enables us to flesh out the political economy of evolving liquidity practices in three areas: the mechanics of financial crises, the sovereign bond/safe asset basis for structural power, and the production of new (non-dollar) asset classes.

First, crises in market-based finance play out through the plumbing. The repo plumbing accommodates mark-to-market balance sheets, feeding cycles of liquidity and leverage (Adrian and Shin, 2010). Lehman's collapse made visible the explosive nature of these cycles, triggering runs on the repo market through liquidity spirals (Gorton and Metrick, 2012). The withdrawal of wholesale repo financing contaminates collateral, be it issued by private institutions (asset-backed or mortgage-backed securities) or the state (Greek, Irish, or Italian sovereign). Thus, CMF approaches crisis management as a form of political struggle over institutional changes necessary to stabilize the plumbing of market-based finance. It focuses analytical attention on systemic mutations in the plumbing, from repos to ETF shares built on bond/equity collateral baskets.

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Second, market-based finance hardwires the imperative of the liquid sovereign politically and structurally in the functioning of the (global) financial system. Take Europe. If the story of European finance in the 1960s and 70s was the rise of the Eurodollar markets (Braun et al., 2020), then the story of the 1990s was the Americanization of national financial systems – the adoption of US repo-sovereign liquidity structures – after a short-lived resistance from the German and British central banks. The Bundesbank worried that repos fed speculative finance. For the Bank of England, the repo-sovereign bond nexus raised the spectre of Soros-type attacks on UK gilts. Yet the liquidity imperative slowly turned Ministries of Finance across Europe, and then the ECB, into active promoters of US-style repo markets (Gabor, 2016), foregrounding the infrastructural power of repo financiers (Braun, 2018) that successfully weakened repo reforms after Lehman.

Paradoxically, the collapse of Long-Term Capital Management, the first systemic failure of a repo financier since the Great Depression, accelerated the global push for Americanized financial systems. Central banks advised that anchoring sovereign bond markets in liberalized repo markets would produce safe assets for market-based finance. But the global financial crisis revealed that the repo/sovereign nexus is not a guarantee of safety for sovereigns (Gabor and Vestergaard, 2018). If the US's structural power runs through the provision of safe sovereign bonds, as Germany's does in Europe, then CMF can shed light on the hierarchy and politics of safe sovereigns.

Third, the export of the American model of financial capitalism reflects the growing demand for new asset classes, including *liquid* non-US debt. This qualifies the IPE emphasis on (euro)dollar assets. While these assets remain systemically important, the search for new asset classes to fill growing balance sheets is a broader phenomenon. Temporarily slowed by the countervailing monetary power of emerging countries in a post-crisis context (Gallagher, 2015), the Americanization of domestic finance has returned through several global projects, from the G20's *Local Currency Bond Market Initiative* to the World Bank's *Maximizing Finance for Development* (Gabor, 2019). These initiatives call for replicating US liquidity structures and replacing dollar debt with liquid local asset classes – from 'SDG development' bonds to ETFs and green bonds – that can attract the trillions of dollars held by global institutional investors (IMF and World Bank, 2020). A CMF lens therefore opens up several crucial questions. For example, what are the implications of organizing development interventions around market-based finance? And how should we understand domestic resistance to the Americanization of national finance in countries – such as China, see Petry (2020) – that are embracing market-based finance in a world of interconnected, hierarchical balance sheets?

Proposition 2

Global finance is organized on interconnected, hierarchical balance sheets, increasingly subject to time-critical liquidity

Analytically, balance sheets matter in two ways. First, in the Keynes, Minsky, and Mehrling tradition, debt is a balance sheet relationship that records a social relation between the lender (for whom the debt is an asset) and the borrower (who records the debt as a liability).

Approaching (shadow) banks as balance-sheet entities highlights what is distinctive about market-based finance. Traditionally, credit creation expands a bank's balance sheet simultaneously on the asset side (bank issues a loan) and liability side (bank creates a deposit). The borrower's promise to pay back the loan stays on the bank's balance sheet to

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maturity (bar securitization), whereas the bank's promise to convert the deposit into cash on demand disappears faster, once the borrower uses the deposit for payment. But market-based finance entangles assets and liabilities in novel ways.

Take repos. (Shadow) banks finance securities positions by creating repo deposits that are collateralized by those very securities. When collateral price increases, the ensuing margin calls return assets or cash to the (shadow) bank, enabling more leverage. The macro-financial novelty of debt relationships forged via collateral-intensive balance sheets rests in the fragile mechanics of leverage tying assets and liabilities. While repo systemic fragility is well documented (Adrian and Shin, 2010), the CMF lens can illuminate the complex ecosystem behind 'passive investment' in several directions. For example, what are the balance sheet relationships through which this ecosystem creates 'liquid' ETF shares out of equity/bond collateral? How does the growing power of asset managers amplify the vulnerability of emerging countries to the global financial cycle (Converse et al., 2020)? And what is the influence of such processes on 'greenwashing' (Jahnke, 2019) or credit creation via index providers (Petry et al., 2019)?

The second thing that matters about balance sheets is that they are hierarchical, both within and across currencies. Some liabilities are treated as more credible promises to pay than others, their issuance subject to institution-based restrictions (Mehrling, 2013). For instance, central bank liabilities (reserves) – the strongest promises to pay in local currency – have historically been issued to a subset of financial institutions: commercial banks. These in turn issue private settlement money (bank deposits), traditionally second in the hierarchy of monetary liabilities because of the social contract between banks and the state (Beggs, 2012).

But in the age of global market-based finance, hierarchies are changing. New liabilities – in local currency (repos) or USD (FX swaps) – become systemically important. Dollar liabilities on the balance sheet of non-US financial institutions can generate complex cross-border funding vulnerabilities (Aldasoro and Ehlers, 2018), particularly when home central banks need the cooperation of the US Federal Reserve to support them. Furthermore, plans for central bank digital currencies open up the state's balance sheet to non-financial actors, with understudied consequences. Similarly, a new systemic but largely ignored actor – Central Clearing Counterparties (CCPs), whose balance sheets move collateral securities via repos or derivatives trading – have gained direct access to central banks (Genito, 2019). How then should we understand their role in macro-financial governance, especially as it is now argued that CCPs are destabilizing the functioning of monetary policy in the US but not elsewhere?

Finally, approaching global finance as a network of balance sheets connected by collateral points to another neglected issue: time-critical liquidity. Konings (2018) suggests that capitalism has a distinctive logic of temporalization that can be traced back to how balance sheets codify time. Agents 'temporally transform' assets and liabilities, manipulating their time horizons. Echoing this insight, CMF opens up new avenues for exploring the evolution and governance of monetary time. Market-based finance shrinks monetary time, as collateral is subjected to the pressures of time-critical liquidity, whereby "a settlement payment, delivery of securities, or transfer of collateral must be made at a particular location, in a particular currency (or securities issue), and in a precise timeframe measured not in days, but in hours or even minutes" (Marshall and Steigerwald, 2013: 30). Time-critical liquidity renders not only central banks, but also CCPs and tri-party repo agents, as systemic nodal points in networks of interconnected balance sheets, whose macro-financial governance should be closely studied.

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Proposition 3

Credit creation in global market-based finance requires new forms of money

Credit creation in market-based finance is structurally different to credit creation in bank-based finance. Relationship banks create deposit liabilities to finance traditional loan assets, and these deposits acquire moneyness – ready convertibility into cash at par – through a social contract with the state (Gabor and Vestergaard, 2016). In collateral-based finance, money begins where bank deposits end (Pozsar, 2014). (Shadow) banks find new ways to monetize credit and escape the constraints of state-backed money (Kindleberger, 1978). New systemic liabilities accommodate the structural needs of financial systems with hierarchical balance sheets populated by various global financial institutions, including institutional investors, asset managers, shadow banks, and market-based regulated banks (Gabor, 2018).

One such systemic liability is shadow money, repo liabilities collateralized by tradable securities, to finance credit created via securities markets (Pozsar, 2014; Gabor and Vestergaard, 2016). What renders repo liabilities 'money' is not their ability to settle debts (you cannot – yet – buy a burger with repos) but their ability to store value at par, that is, to credibly promise par convertibility between repo deposits and state-backed money through collateral valuation (for a different view, see Murau and Pforr, 2020).

Critically, when bank A extends credit to a corporation via securities markets, it buys securities issued by the corporation and creates a deposit against these securities. The corporation uses the deposit to pay for capital assets, and that deposit eventually ends up as an asset of a pension fund with Bank A. Bank A *destroys* the deposit by swapping it into a repo with the pension fund, a repo collateralised by the securities issued by the corporation (see Gabor and Vestergaard, 2016). The alchemy of banking does not merely reside in a swap of IOUs, as in the money view, but in creating new IOUs by destroying ones higher in the hierarchy of money. The bank finances credit creation via securities markets with repo deposits, and the pension fund keeps its 'cash' in a repo deposit that it views as a safer asset than a bank deposit. New forms of money have two important implications.

First, traditional measures of money no longer capture adequately either monetary or credit activity (Pozsar, 2014). Banks' endogenous creation of repo deposits destroys bank deposits. Collateral derives monetary power from the entanglement between assets (bonds) and liabilities (repo deposits secured by bond collateral). A CMF lens prompts us to extend traditional measures of money to include the monetary power of collateral (Smaghi, 2010; Fisher, 2013; Gabor and Vestergaard, 2016), and more broadly, to ask how we can incorporate structurally different financing regimes into Post Keynesian macroeconomics that models effects on growth, employment, or income inequality (Nikolaidi, 2015; Botta et al., 2020). What are the implications of this for the risk-taking channel of monetary policy (Bruno and Shin, 2015)? Furthermore, what monetary policy innovations are necessary to credibly shape endogenous shadow money creation?

Second, CMF prompts us to examine the repo/FX swaps nexus to unpack the institutional aspects of the dollar's global footprint. US dollar hegemony has a leg in national currency markets. Non-US financial institutions hold dollar assets, not just the dollar liabilities typically discussed in the literature. FX swaps allow them to swap their domestic cash into US dollars and finance US dollar assets. FX swaps, Borio et al. (2017) argue, are functionally equivalent to repos, but accounting rules obscure that equivalence. Financial institutions record repos but not FX swaps on balance sheets, except for mark-to-market variation from exchange rate movements. Thus, large volumes of Eurodollars go missing from the balance sheets of

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financial institutions outside the US. According to Borio et al. (2017), this missing debt doubles non-banks' global dollar debt at USD 21 trillion. Unpacking the repo/FX swap nexus would thus illuminate the picture of global (dollar) liquidity, with significant implications for monetary policy in the US and beyond, as well as for capital account management (i.e. capital controls).

Proposition 4

Market-based finance requires a derisking state, for systemic liabilities and new asset classes

Evolving liquidity regimes and practices for creating money and credit on globally interconnected, hierarchical balance sheets structurally require the state to derisk systemic liabilities during bad times, and to enable the creation of new asset classes during good times. Lender of last resort is ill-suited for bad times because it relies on collateral valuation practices. A CMF lens is useful as a means of exploring political struggle in response to these structural pressures, and the implications for both the monetary power of collateral and for (infra)structural power. These responses coalesce around a state that derisks *collateral*, *exchange rates*, and *new asset classes*.

First, the most notable post-Lehman institutional change is the rise of central banks as market-makers of last resort (MMLR) for a set of collateral securities (Gabor and Ban, 2016). While initially restricted to large central banks, the COVID-19 pandemic has seen central banks of emerging countries like Indonesia and South Africa adopt it too. By promising to safeguard the market liquidity of securities and putting a floor on their price, MMLR derisks collateral into safe assets, preserving the monetary power that collateral confers on repos. It also protects the valuation power that collateral acquired post-Lehman through its prominent role in derivative pricing (Spears, 2019).

The critical question, through a CMF lens interested in monetary power, is 'what collateral'. MMLR complicates the institutional and ideational politics of 'independent' central banks (van't Klooster and Fontan, 2019). The entanglement between central banks as (reluctant) deriskers of collateral and the public/private issuers of collateral securities plays out as a complex political struggle in polities averse to central bank interventions in sovereign debt markets, like the Eurozone (Gabor and Ban, 2016). CMF can help unpack these political struggles, particularly where evolving liquidity practices create both (unexpected) exorbitant benefits for states like Germany, the Eurozone's de facto safe asset issuer of last resort (Gabor and Vestergaard, 2018), and infrastructural power for private finance (Braun, 2018).

Second, the Americanization of global and national financial systems generates new pressures for derisking exchange rates in emerging and poor countries. CMF can help examine the shift in central banks' practices, including regular derivative operations to derisk exchange rates for foreign holders of local currency bonds (Macalos, 2017) and 'swapper of last resort' functions that supply financial institutions with foreign liquidity (Gonzales et al., 2019), from either their own reserves or by borrowing from the US Federal Reserve. What, we might ask, are the structural and political limits to new practices of central banking, and how do they play out in Americanized financial systems, set against the increasing dominance of ETF-driven capital flows?

Third, CMF can shed light on growing demands for derisking new asset classes like green finance or development-related bonds. Take the climate crisis. An increasingly powerful narrative calls on the state to derisk new green asset classes under rules defined by global finance (Dafermos et al., 2020). This status-quo solution preserves the political order of

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financial capitalism, including its ideological aversion to green public investment under a Green New Deal framework, the 'independence' of central banks, and the political power of carbon financiers. It thereby creates the conditions for systemic and subsidized greenwashing.

A CMF lens could help here by illuminating the macro-governance of 'greenwashed' finance in various ways, including, for example: the deployment of infrastructural power in political struggles over green/brown taxonomies (Gabor et al., 2019); the politics of climate stress-tests recently announced by central banks; the new practices of derisking via green-supporting factors wired into regulatory regimes or central bank collateral policies; and the extent to which derisking means subsidized greenwashing. Similarly, CMF enables us to explore the turn to private finance in international development: an emerging 'Wall Street Consensus' (Gabor, 2020) that pushes for the privatization of public infrastructure via Public-Private Partnerships that would then be packaged into 'investable development assets' through Multilateral Development Banks or states in the Global South.

Conclusion

Critical macro-finance opens up new avenues for exploring the political economy of liquid asset production in market-based finance. It stresses that such liquidity practices, re-ordering interconnected and hierarchical balance sheets, generate new types of money and systemic liabilities. It also focuses analytical attention on the ensuing ideational struggles and structural pressures to reorient macroeconomic regimes towards a derisking state.

This provides a useful lens through which to view the global COVID-19 pandemic. Since February 2020, we have seen the derisking state in action: large central banks assumed MMLR for a broad range of private and public securities, while the Federal Reserve extended US dollar liquidity provision in a two-tier hierarchy of central banks: swaps with 'peer' central banks, including several emerging countries, and repos with other central banks that the Fed treats as private commercial banks, who can borrow against their US Treasuries portfolios. The fiscal arm of the state also assumed an outright derisking role, as for instance in Germany, by guaranteeing bank loans to companies and wages. CMF in this way offers a powerful framework for exploring a post-pandemic world, where central banks bailout global finance while governments are reluctant to reform it, where the explosion in public debt will trigger pressures for a new wave of austerity, reinforcing the structural drivers that made financial capitalism even more dominant after the collapse of Lehman Brothers.

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