

Comment: Luis Servén

The 2008–2009 global financial crisis and the ensuing Great Recession have prompted a critical reassessment of mainstream macroeconomic models. Among their key weaknesses, many observers have singled out the virtual neglect of the financial system. Indeed, the description of the financial side in the pre-crisis mainstream macro model was pretty much limited to a demand function, presumed stable, for a well-defined concept of “money.” Financial frictions and amplification mechanisms, two ingredients widely seen at core of the financial crisis and its propagation, were altogether absent.

These themes at the nexus of macroeconomics and finance have long attracted Guillermo Calvo’s attention. His chapter brings together a broad array of big macrofinancial issues that reflects the wide range of his contributions to macroeconomic thinking, and it showcases his mastery at drawing insights from highly stylized analytical settings. The common threads that tie the chapter together are expectations and, especially, liquidity and its role in past and recent crises. This is the focus of my comments below. Needless to say, it has been a longstanding concern for Guillermo Calvo, as proven, for example, by his seminal work on sudden stops.

The chapter argues that liquidity should take center stage in macroeconomics and places it at the root of the global crisis and the post-crisis slump. The central role of liquidity reflects two key facts. The first is that liquid assets are essential to the operation of modern economies. They facilitate market transactions, can (almost) always be transformed into means of exchange at full face value, and exchanged for goods and services or other assets. In particular, their widespread use as collateral in financial transactions makes them essential to a well-functioning credit market. But the second key fact is that liquidity is also fragile: Liquid assets—especially those privately produced, with bank deposits as the classic example—are

vulnerable to self-fulfilling runs. This puts the spotlight on the role of expectations and coordination mechanisms in triggering sudden shifts in the valuation of liquid assets.

These two issues—liquid assets as the key to the credit mechanism in the context of financial frictions and the vulnerability of those assets to shifts in expectations—have been explored by an ample literature, which could have featured more prominently in the chapter. Recent examples that come to mind are those of Martin and Ventura (2012), who show how bubbles can unlock credit and growth, and Gorton and Ordoñez (2013), who analyze the endogenous nature of financial fragility.

The Backing of Money

As the chapter reminds us, fragility is a fundamental feature of fiat money, the ultimate liquid asset. Fiat money is an intrinsically worthless asset, valuable only to the extent that it is (or is expected to be) valued by others. Thus, it fits the standard definition of a bubble. This in turn opens the door to the existence of multiple self-fulfilling equilibria in monetary economies—including barter equilibria, in which the price of money is zero.

The question of why money is valuable attracted considerable attention from monetary theory during the 1960s and 1970s. Yet flight away from money has been a rare occurrence in modern times. It has not been a feature of recent crises; indeed, if anything, the opposite has been the case. The chapter sets out a “price theory of money” (or PTM for short) to explain this resilience of money: What anchors the value of money is nominal price stickiness. In a world of staggered price setting, the positive value of money is just a result of hysteresis: Money is valuable today, because it was valuable yesterday. Because only a limited number of individual prices may have changed in the interim, the general price level (the inverse of the value of money) cannot have moved much. By the same reasoning, if money is valuable today, it can be anticipated to remain valuable tomorrow. Thus, staggered price setting provides an output backing for money.

This approach casts nominal rigidities in an unusual light. In the macroeconomic literature they routinely get the blame for hampering adjustment to shocks, but the PTM holds instead that they also deserve credit for preserving monetary stability. Put differently, much-hyped price flexibility is not an unmixed blessing after all, as it may come with increased monetary fragility.

But there is some circularity underlying the PTM. Pricing arrangements are themselves not invariant to perceptions about monetary and aggregate price stability. For example, if (for whatever reason) the price level is expected to rise quickly, more agents are likely to revise upward their individual prices, and by larger amounts, than if they expect the overall price level to rise slowly (Burstein 2006). Thus, as a result of the combined actions of individual agents, the degree of price level stickiness, and hence its contribution to the backing of money, in effect depends on expectations. Ultimately, this suggests that the power of the PTM to explain the backing of money—that is, the degree of monetary and price stability—may itself depend on the perceived degree of monetary and price stability. In other words, the PTM may not take us too far in resolving the indeterminacy surrounding the value of money.

Liquidity and Fragility

In modern economies, other assets beyond fiat money provide liquidity services. Much of the recent literature (e.g., Gorton and Ordoñez 2013; Caballero and Fahri 2018) refers to them as “safe assets.” They include public debt backed by the government’s taxation capacity, as well as privately produced debt backed by either a lender-of-last-resort guarantee (as in the case of insured bank deposits) or by credible collateral (as in the case of asset-backed securities).

What distinguishes safe assets from the rest is the fact that they can (almost) always be exchanged at full face value. They retain (much of) their value in large systemic events. Also, their value is information insensitive—there is no benefit to producing private information about it. In other words, they are free from adverse selection, that is, concerns that the counterparty may have superior private information about their value.

Private-label assets help meet the overall demand for liquidity, but their use also raises financial fragility. They can be close, but not perfect, substitutes for safe public debt. Their value is impaired in systemic events. In particular, unless fully backed by a lender of last resort, short-term private-label safe assets are vulnerable to runs, as shown in the global financial crisis (Brunnermeier 2009; Gorton 2010).

All these issues are touched on, to varying extents, in Guillermo Calvo’s chapter. But they have important implications for public debt, a missing theme. The fragility of private-label liquidity implies that safe public debt has

a key role to play in protecting the credit mechanism. More specifically, public debt is net wealth, to the extent that it allows sustaining credit at times of crisis—when privately produced assets cease to be accepted as collateral (Gorton and Ordoñez 2013). Even if the choice between taxes and debt to finance government expenditure may be inconsequential in normal times, Ricardian equivalence still breaks down when financial crises can occur. Failure to recognize this may result in an undersupply of safe public debt.

Another important policy question is the ability of financial regulation to mitigate the fragility of privately produced liquid assets. This subject has focused the attention of financial regulators worldwide after the crisis, although it receives limited attention in the chapter. Yet, as Guillermo Calvo notes, the tightening of regulatory requirements post-crisis has gone in the direction of raising the mandated liquidity holdings of financial institutions, which will likely have the unintended consequence of increasing the aggregate shortage of safe assets.

Expectations and Fragility

Investor runs are often attributed to “shifts in sentiment.” But the causes of those shifts remain poorly understood. This echoes the fact that theoretical work on models with multiple equilibria typically has little to say on what prompts jumps across them—for example, what causes transition from a bubbly to a bubbleless equilibrium in a model of asset bubbles. In practice, the factors responsible are often difficult to determine even in ex post forensic analysis of financial crashes. The Minsky moment that marks their onset does not usually follow large shocks to fundamentals or major news about their future path. Instead, it tends to occur after the arrival of relatively minor, sometimes almost irrelevant, news.

The subprime crash is a case in point. The sharp increase in the default rate of subprime mortgages in the United States is commonly viewed as the trigger of the global crisis. But it is hard to see how the souring of a fairly minor segment of the US mortgage market could have reversed expectations about the future prices of broad categories of assets so dramatically as to trigger runs on a wide variety of leveraged investors across the financial system.

What makes for this disproportionate effect of seemingly innocuous news? The literature on amplification mechanisms in financial crises (e.g., Brunnermeier and Oehmke 2013) offers some hints. One example can be

found in Guillermo's own work on the interplay between informed and uninformed investors (Calvo and Mendoza 2000). The latter investors infer the state of fundamentals from the actions of the former. In appropriate conditions, the uninformed investors may stage a run just because informed investors are redeeming assets to meet their liquidity needs, which uninformed investors misinterpret as a sudden worsening of fundamentals.

A related mechanism arises when rational investors hold heterogeneous expectations due to the presence of private information about the fundamentals. Asset prices then reflect average market expectations, and rational investors have to face Keynes's "beauty contest" (i.e., they need to form expectations about the expectations of others). In such settings, noisy public signals about the fundamentals drive a wedge between asset prices and fundamental values (Bacchetta and van Wincoop 2008). In particular, asset prices may overreact to public signals (Allen, Morris, and Shin 2006) and experience abrupt shifts in response to nearly irrelevant news.

From this it would seem tempting to conclude that steps aimed at improving the reliability and accuracy of public information—such as enhanced disclosure rules for leveraged investors—might help reduce asset price volatility and stem investor panics. It is doubtful, however, that such measures would make much of a material contribution to anchor investor expectations and deter runs. Calvo's chapter points in a different direction. For example, he suggests more use of pegs to limit the indeterminacies surrounding flexible exchange rates or of backward indexation to anchor inflationary expectations. How, if at all, this could translate to the case of asset prices—which are fundamentally forward looking—is not discussed, but it seems like a natural follow-up question. For example, should policy make more systematic use of floors (or ceilings) to the levels, or the changes, of asset prices?

The Post-Crisis

Almost 10 years after the global crisis, world economic growth remains sluggish, and advanced economies continue to exhibit deflationary pressures. This disappointing performance has attracted a wide variety of explanations (see Teulings and Baldwin 2014). They range from those that portray the post-crisis as a new normal, driven by slow-moving supply or demand factors (i.e., the "secular stagnation" view) to others that take more of a short-term perspective and attach a central role to Keynesian aggregate

demand deficiencies. Yet others find the post-crisis sluggishness well in accordance with the past history of major financial crashes, which are typically followed by protracted recessions.

The chapter takes a liquidity-centered view: The crisis was driven by the collapse of liquid assets, which brought the financial system to the verge of collapse. As credit supply dried up, output and employment fell across the globe. Low growth in the post-crisis world reflects the continuing liquidity shortage and malfunction of the credit market.

Few dispute the key role of the liquidity crunch in the onset of the crisis, but there is much less agreement on whether the shortage of credit remains the main cause of the subsequent sluggish growth. Casual observation suggests that many firms in the United States and Japan are awash with liquidity, yet investment has been slow to recover. Empirical tests by Mian and Sufi (2014) indicate that the credit crunch cannot explain the US employment collapse. On the whole, the seeming implication is that aggregate demand shortages, actual or anticipated, might also be a major factor behind the weak growth recovery.

Most observers believe that the powers of monetary policy to reignite growth have been weakened in the post-crisis as the economy fell into a liquidity trap posed by the zero lower bound on interest rates. Although the chapter shares this perspective, its distinguishing feature is the view that what is at work is a supply-side liquidity trap—as distinct from the Keynesian demand-side liquidity trap. The latter arises from an insatiable demand for liquidity; the former, according to Calvo, from the inability of monetary policy to raise the supply of liquidity services.

In this narrative, expansionary monetary policy may be able to raise real money balances but fail to raise liquidity or even reduce it; such policy may prompt deflation rather than inflation, as individuals vie for yet more liquidity. The mechanism responsible for this intriguing result is not fleshed out, but it appears to rely on agents' competition for liquidity services in a setting with pecuniary externalities and anticipated runs on liquid assets. In a variation on the same idea, the central bank might be able to raise liquidity, and thereby output, only as long as it keeps expanding the money supply indefinitely.

Strictly speaking, it is not clear if this really qualifies as a supply-side liquidity trap, because the underlying mechanism seems to rely on the behavior of liquidity users on the demand side. And, on the whole, it seems

doubtful that central banks' attempts to implement expansionary policies really belong among the chief factors behind the deflationary pressures in advanced countries.

Leaving aside these issues, however, Calvo's perspective on the post-crisis has a lot in common with the recently proposed "safety trap" view (e.g., Caballero and Fahri 2018). In that narrative, the market for safe assets witnessed a long-term increase in demand, largely driven by the growing liquidity needs of financial intermediaries, as well as the self-insurance needs of emerging-country governments around the world in the face of global external disturbances (Gourinchas and Jeanne 2012). The growth of demand far outstripped the available supply of safe public debt and led to a boom in the supply of private-label (quasi-)safe assets, through securitization and similar mechanisms. Indeed, the US evidence confirms that the net supply of private-label liquid assets is negatively correlated with the supply of government debt (Krishnamurty and Vissing-Jorgensen 2012).

These assets unraveled in the crisis and brought down with them large volumes of formerly safe sovereign debt, notably that of European periphery countries struggling to rescue their financial systems. By some estimates, the supply of safe assets relative to global GDP fell by half, opening up a massive gap vis-à-vis their demand and pushing down into negative territory their "natural" rate of return (i.e., that consistent with full employment; Caballero and Fahri 2018). With the actual rate constrained by the zero lower bound, the economy fell into a safety trap, and equilibrium in the safe asset market was restored through an output fall.

This story seems to have a lot in common with that outlined in the chapter. The safety trap is akin to a liquidity trap, with the added feature of an endogenous risk premium that shapes the output effects of macroeconomic policy. And some policy implications seem broadly similar—in particular, the scope for conventional monetary policy is limited in both narratives. In truth, however, the "supply-side liquidity trap" perspective in the chapter is not developed in sufficient detail to allow the reader to see how, or why, appropriate policy actions to revive liquidity would differ from those needed under a demand-side liquidity trap or a safety trap.

In a safety trap, for example, issuance of (safe) public debt, quantitative easing through central bank purchases of risky assets, or inflation target increases are all effective for raising output (see Caballero and Fahri 2018

for details). In turn, Calvo's chapter seems skeptical regarding risky asset purchases. Because such purchases essentially amount to changing the relative supply of safe and risky assets, one may conclude that (safe) public debt issuance, which is not explicitly discussed, may be ineffective, too—in sharp contrast with the “safety trap” optic. This seems puzzling, although strictly speaking, both risky asset purchases and public debt issuance should be expected to be similarly unhelpful in conventional liquidity traps. In turn, inflation target increases are not contemplated either, although one would conjecture that they should be of help, as in standard liquidity traps.

What about the international perspective? Many central banks, especially from emerging markets, hold massive amounts of safe assets at present, in most (but not all) cases for self-insurance purposes. This tends to worsen the global asset shortage. Improved reserve-pooling arrangements, through the IMF or in other ways, might help reduce self-insurance needs, as Calvo notes. But these steps may also require higher levels of mutual trust than currently exist. A more intriguing option, recently proposed by Rogoff (2016), would partly reallocate emerging-market reserve holdings to gold, which is a highly liquid asset whose rate of return is not subject to a zero lower bound—thus potentially helping release the safety trap. In addition, reforms to enhance emerging markets' ability to supply safe assets, rather than just demand them, would seem worth considering too, but they are not discussed in the chapter.

Final Thoughts

Over the past decades, the overall demand for liquid assets has grown steadily, largely driven by the growing liquidity demand of the global financial system. Demand has far outpaced the supply of outside liquid assets (i.e., fiat money and safe public debt), resulting in an increasing resort to inside assets (i.e., private-label assets) that is seen by many observers as one of the key ingredients behind the global crisis and its disappointing aftermath. Much of the policy debate has centered on how to engineer a commensurate increase in asset supply to bridge the gap with demand.

This view prompts two concluding questions. First, because much of the growth in demand stems from the increasing collateral needs of an expanding financial system, we may wonder whether such expansion really is welfare-increasing. In other words, is it possible for financial

intermediation, and thus its derived collateral needs, to grow “too large” from a social welfare viewpoint?

In practice, externalities are at work that may easily lead to excessive financial intermediation in a general equilibrium setting. Eden (2016) offers an example, based on the fact that, although both fiat money and quasi-monies can be used to facilitate socially efficient transactions, it is cheaper to use fiat money, because it is costless to produce. The private incentives for spending resources on the production of quasi-monies are always greater than the social incentives, as they do not internalize the equilibrium adjustment of the price level. A similar reasoning applies to credit: Although it facilitates efficient transactions, its production requires real resources in the form of monitoring services. Thus, the private incentives to produce credit are likely to be excessive, because they do not internalize equilibrium price adjustments.

It is easy to think of situations in which financial intermediation grows too large because of other externalities. A prominent example is that of intermediation facilitating socially excessive risk taking, driven by the fact that individual intermediaries do not take into account their contributions to systemic risk and hence to the likelihood of adverse scenarios—a theme explored by the macro-prudential literature.

Leaving aside the scale of the financial system, the second question concerns the roots of its collateral needs. These ultimately arise from the presence of frictions, such as asymmetric information, monitoring costs, and imperfect contract enforcement. The natural question is whether the primary focus of policy should be just to meet the collateral needs imposed by these frictions, possibly at the cost of increasing financial fragility. Granted, it is not likely that frictions can be eliminated altogether. But there probably is ample room for regulatory and other policies to substantially limit their scope, and thereby contain the ever-expanding collateral needs of financial intermediation.

References

- Allen, Franklin, Stephen Morris, and Hyun Song Shin. 2006. “Beauty Contests and Iterated Expectations in Asset Markets.” *Review of Financial Studies* 19 (3): 719–752.
- Bacchetta, Philippe, and Eric van Wincoop. 2008. “Higher Order Expectations in Asset Pricing.” *Journal of Money, Credit and Banking* 40 (5): 837–866.

Brunnermeier, Markus K. 2009. "Deciphering the 2007–2008 Liquidity and Credit Crunch." *Journal of Economic Perspectives* 23 (1): 77–100.

Brunnermeier, Markus K., and M. Oehmke. 2013. "Bubbles, Financial Crises, and Systemic Risk." In *Handbook of the Economics of Finance*, volume 2B, edited by George M. Constantinides, Milton Harris, and Rene M. Stulz, 1221–1288. Boston: Elsevier.

Burstein, Ariel T. 2006. "Inflation and Output Dynamics with State-Dependent Pricing Decisions." *Journal of Monetary Economics* 53 (7): 1235–1257.

Caballero, R., and E. Fahri. 2018. "The Safety Trap." *Review of Economic Studies* 85 (1): 223–274.

Calvo, Guillermo A., and Enrique Mendoza. 2000. "Rational Contagion and the Globalization of Securities Markets." *Journal of International Economics* 51 (1): 79–113.

Eden, Maya. 2016. "Excessive Financing Costs in a Representative Agent Framework." *American Economic Journal: Macroeconomics* 8 (2): 215–237.

Gorton, Gary. 2010. *Slapped by the Invisible Hand: The Panic of 2007*. New York: Oxford University Press.

Gorton, Gary, and Guillermo Ordoñez. 2013. "The Supply and Demand for Safe Assets." NBER Working Paper 18732, National Bureau of Economic Research, Cambridge, MA.

Gourinchas, Pierre-Olivier, and Olivier Jeanne. 2012. "Global Safe Assets." BIS Working Papers 399, Bank of International Settlements, Basel.

Krishnamurty, Arvind, and Annette Vissing-Jorgensen. 2012. "The Aggregate Demand for Treasury Debt." *Journal of Political Economy* 120 (2): 233–267.

Martin, Alberto, and Jaume Ventura. 2012. "Economic Growth with Bubbles." *American Economic Review* 102 (6): 3033–3058.

Mian, Atif, and Amir Sufi. 2014. "What Explains the 2007–2009 Drop in Employment?" *Econometrica* 82 (6): 2197–2223.

Rogoff, Kenneth. 2016. "Emerging Markets Should Go for the Gold." Project Syndicate, May 3. <https://www.project-syndicate.org/commentary/gold-as-emerging-market-reserve-asset-by-kenneth-rogoff-2016-05>.

Teulings, Coen, and Richard Baldwin. 2014. *Secular Stagnation: Facts, Causes and Cures*. London: CEPR Press.

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