25 Sociology of financial markets, monetary policy, and central banking

Frédéric Lebaron

Abstract

This chapter first intends to understand how the world of actors in charge of managing money and the financial sector is structured, and how it relates to the so-called "real" economy, based on a long-term historical sociology of the monetary and financial space within capitalism. It is shown that this sector is defined by a set of interdependency relationships, which have become particularly visible since the global financial crisis of 2007–2008: the action of central banks, in particular as "lenders of last resort" for the entire financial system (banks and the State) during crises, interacts with all the "external" dynamics of the economy. This allows to raise the question of the specificity of a sociological approach to this subject, by insisting not only on the concepts of the discipline, but also on the approaches and methods of empirical investigation that are specific to it. Finally, we discuss how a sociological approach conceived in this way can attempt to respond to future challenges, for example, in the interpretation and modelling of socio-historical processes, forecasting, or even the "categories" of public policy in the field of "central banking".

Keywords

Central Banks; Interdependence; Field; Money; Power

While the study of financial markets, monetary policies and central banks is largely dominated by studies in economics and finance, there has been a significant development, especially in the last 20 years, of research and analysis in other areas of the social sciences: law, history, sociology, political science, anthropology, etc.

The very asymmetrical situation of the disciplines studying the world of finance is undoubtedly the result first of all of the technical nature of this sector of activity: it has become a very strongly autonomous space, characterized by the proliferation of complex instruments and by the monopoly of

practice held by specialized professionals' jurisdiction in the sense of Abbott (1988). The latter are above all trained in financial disciplines and carry out their professional activity within institutions that are themselves specialized: banks, funds of all kinds, consulting firms, central banks, financial administration, independent agencies, etc.

This is precisely the first characteristic of the long-term evolution of what is too quickly referred to indiscriminately as "finance": in reality, it is a differentiated social space, which opposes its own logic to "outside" views, whether they are those of citizens or specialists in other disciplines. The study of this space presupposes a minimum of familiarity with a particular vocabulary and syntax and, more broadly, with specific issues.

What, then, can be the contribution of a sociological perspective that takes as its object, more specifically, the interaction/relationships between financial markets, monetary policy and central banking? This chapter will try to answer this question in this, by presenting an analytical framework and various studies that contribute to sociological knowledge on these objects today.

Linking the three elements (financial markets/monetary policy/central banks) leads to a focus on a set of problems that are important not only for economic sociology, but more broadly for the analysis of contemporary economies, especially since the global financial crisis of 2007–2008. This has given rise to numerous economic (for example: Krugman 2008; Stiglitz 2010; Boyer 2011; Bernanke 2015), historical (Tooze 2018), sociological (Lebaron 2010; Fligstein 2021) or political science (Gabor 2011; Hassenteufel and Saurugger (eds) 2021) work. This crisis is indeed a turning point, as central banks are now, for all observers, visibly at the centre of both the management of currencies and the public regulation of financial systems. The contribution of a sociological perspective is measured not only by its capacity to shed light on each of the three terms, but also by its ability to propose a relevant analysis of their interrelations and of the social "worlds" concerned.

To do this, it is first necessary (§1) to understand how the world of actors in charge of managing money and the financial sector is structured, and how it relates to the so-called "real" economy, based on a long-term historical sociology of the monetary and financial space within capitalism. The emergence of central banks intervening daily in the financial markets and conducting, by setting their "key" interest rates, "monetary policies" that are relatively independent of the rest of public action and are aimed at price stability, constitutes a specific institutional framework and a relatively recent historical configuration. It is characteristic today of most of the countries in the world, although with fairly strong variations: varying degrees of independence in various forms, the use or not of instruments alternative to interest rates, the "federal" specificity of certain banks such as the European Central Bank (ECB) or the central banks of the franc zone, etc. On the ECB and its anchoring in the history of European integration, the work of Kenneth Dyson provides in-depth insights, e.g. Dyson 2014; on central banks in West and Central Africa, the contribution of Nububko et al. (2016) provides a recent example.

We will then show in the second part (§2) that this sector is defined by a set of interdependency relationships (Elias 1991), which have become particularly visible since the global financial crisis of 2007–2008: the action of central banks, in particular as "lenders of last resort" for the entire financial system (banks and the State) during crises, interacts with all the external dynamics of the economy. These involve heterogeneous public and private actors at different scales, who are themselves closely linked to largely financialized and interdependent productive worlds.

Once this particular setting has been established, which the crisis of 2007–2008 has both made more visible and accentuated some of its features, we will raise the question of the specificity of a sociological approach to this subject (§3), by insisting not only on the concepts of the discipline, but also on the approaches and methods of empirical investigation that are specific to it. This will be an opportunity to present in more detail some of the practical and symbolic mechanisms of social interdependence

specific to the financial order, by showing how they are illustrated by more and more numerous and precise empirical studies.

Finally, we will discuss (§4) how a sociological approach conceived in this way can attempt to respond to future challenges, for example in the interpretation and modelling of socio-historical processes, forecasting, or even the categories of public policy in the field of central banking.

The space of finance and central banks: a socio-historical dynamic

The institution of money is known to the most remote societies and is closely linked to both political and economic power (Testart 2001; Ingham 2004), placed in a permanent tension between the two. The particular configuration we observe today is the result of a long process abundantly documented by monetary and financial history (Théret ed. 2007; Dyson, Marcussen (eds) 2009; Feiertag, Margairaz (eds) 2010…) and inserted into the global economic history of capitalism (Wallerstein 2004; Bihr 2018; François, Lemercier 2021).

In the most advanced regions of the world economy, an autonomous space of finance linked to the state as well as to private actors has progressively emerged. In this universe, which is itself expanding, the central bank, which only took on this name after a long evolution, occupies a specific position, at the centre of multiple links with all the other economic actors, whether they are themselves public (government, agencies and public enterprises) or private (households, financial or non-financial enterprises).

During the period of the emergence of capitalism – which can be defined at least provisionally as an economy largely dominated primarily by private actors and “rationally” oriented towards profit and accumulation – finance is a progressive extension of state activity, in the form of what in France is called “public finance”. At the same time, it developed as a private activity backed by trade, in particular

international trade, of which it is one of the vectors and which in turn stimulates the capacity for innovation, in particular in the banking world. Its dynamic has therefore been twofold since the beginning: state and private, monetary (linked to a national political space) and financial (linked to the global expansion of trade). This duality, or even this double duality, is still constitutive of the object "finance" today, at once an extension/derivative of money that rests on the collective trust of which the state is the guarantor, and a partly autonomous reality, the source of its own logic of accumulation by private actors (Orléan 2014).

States have a monopoly on monetary issuance in a defined territory and must at the same time maintain confidence in the (internal and external) value of the money they issue. For a very long time, this was reflected in the more or less subtle manipulation of gold reserves and the gold composition of coins, an issue that took on a global dimension with the quest for gold in the colonies from the 15th to the 16th centuries. Gold discoveries stimulated activity and led to a general upward trend in prices (Simiand 1932, 1934). At the same time, states developed increasingly important financing needs over time, as they concentrated multiple resources. They were confronted with potentially contradictory constraints: not only the concern to promote the growth of national wealth, within the borders of the state, the development of international trade, but also the need to maintain an often expensive state activity (court, wars, etc.) that generates a structural public debt (Lutfalla 2019), whose creditors are the beneficiaries of commercial and then industrial accumulation. The States also faced the issue of preserving a certain equilibrium of prices and, in the background, between the socio-economic groups dependent on prices (Simiand 1932), among which the exchange rate of the currency with other national currencies. Social groups and nations are indeed in potential conflict over the appropriation of wealth produced or redistributed, class struggle and imperialism being only a particular case.

The genesis of the modern state is thus inseparable from that of monetary and financial operations, which constitute the very matrix of the space of finance, closely inserted into particular social structures,

obeying its own logic. The constraints of public debt management interact closely with the issues of monetary issuance and the surveillance, which takes various forms, of the price level within national spaces. Gradually, actors who were originally relatively indistinct began to differentiate while remaining closely interdependent: on one hand, the central bank, which emerged at the end of the 17th and 18th centuries as a state bank, became the actor, located at the intersection of the public and private sectors, in charge of monetary issuance and responsible for maintaining the value of money, first through the management of gold reserves, then by imposing limits on monetary creation in the national space; on the other hand, banks and other private actors with savings, accumulated in trade, industry or finance, are the creditors of the state and, of course, of the private economy. They are in charge of financing the economy, in particular operations within the arena essential to European capitalist development that is international trade (Bihr 2018); and finally the Treasury is the actor in charge of issuing the state's debt, according to its needs. The functions and structures of these three interdependent poles have differentiated, giving rise to three large and distinct groups of financial actors: central bankers, private bankers and financiers and public financiers (in the Treasury and the Budget). This differentiation takes place in a non-linear manner and is part of legal frameworks that vary according to the period and the country, depending in particular on historical experience. Hyperinflationary phenomena are particularly striking: in these "pathological" periods, the value of money collapses rapidly and continuously, making it difficult to save for accumulation and brutally modifying the distribution of wealth and income.

In France, after the Second World War, the government, supported by the body of senior civil servants from the Inspection Générale des Finances who ran the Ministry of Finance, concentrated tight control over the three components, in particular the central bank (the Banque de France, which had become public) and the Treasury: private banks were then placed under strong dependence on the first two poles, and the financial markets remained underdeveloped until the 1960s (Lemoine 2016). This close control gradually broke down over time and, in 1993, the Banque de France became "independent",

emancipating itself from the supervision of the Treasury, before the creation of the ECB at the level of the Euro zone (1999). In the new configuration that emerged in the 1980s, the financial markets acquired a much more important place in the financing of the economy, alongside the banks: financial liberalization, resulting from a series of legislative changes and innovations, radically modified the equilibrium in most economic sectors to the benefit of financing by the market and the global players that dominated it. Despite the rise of financial funds, banks thus retain an important role, if only because of their close link to the central bank, and as essential components of the payments system and the financing of certain private economic actors (notably households and small and medium-sized enterprises).

Financial globalization, largely the result of political decisions taken in the United States and Europe in the 1970s and 1980s (Chesnais 2004; Krippner 2012), is reflected, particularly in North America and Europe, in the very strong growth in the activity of the various segments of private finance: the money market, the foreign exchange market, the bond market, the equity market, the derivatives market, etc. It also gave rise to an extraordinary increase in the complexity of finance, which tends to extend ever further beyond its initial sphere of influence, as all sorts of objects become tradable assets. The space of finance, energized both by the challenges of managing public debt and by the internal quest for innovation, is also becoming a very autonomous universe. It is both interdependent and compartmentalized, marked by the arrival of new players and by the explosion of complex instruments that are more or less highly regulated. This expanding space tends to colonize many sectors of activity, through multiple channels (Boussard 2018). The lengthening of the chains of interdependence within the financial sphere is such that each sector, or even sub-sector, of financial market activity can be studied relatively autonomously.

The financial expansion since the 1980s has also been reflected in a marked upward trend in asset prices, which contrasts sharply with low inflation (rise in the consumer price index) and relative wage

stagnation, for example in the United States (Stiglitz 2010). The counterpart of this movement is a certain instability that characterizes financial markets, where so-called “speculative bubbles” form, temporary and artificial price increases that eventually burst, calling into question the entire system, especially since all markets are now highly interconnected.

Prices, far from being the result of mechanical adjustments that constantly bring them back to equilibrium and thus to the optimum, are the product of institutional arrangements and power relations, including symbolic ones. These determine them, which explains their instability and the persistence of imbalances. The heart of the functioning of the economy is in fact the social process of price formation, in which the central bank is now one of the key players: attentive to the stability of consumer prices and to the limitation of wage variations, which partly determine it, it must also be concerned with possible dynamics that lead to instability on the asset markets, and, as it has always been in the international context, with exchange rate developments.

Despite the increased instability associated with financialization, the main task of central banks since the 1990s has been to ensure consumer price stability in this context of sharply rising asset prices: this has been the main purpose of what is known as “monetary policy” since the emergence of “cyclical policies” in the 1930s and especially after the Second World War: these are public policies explicitly aimed at maintaining price stability and implementing their own instruments to this end, within a framework more or less dominated by the financial markets. Confronted with the problems of financial instability, they have to constantly improve financial regulation, particularly in its macro-prudential form (Thiemann et al. 2020): macro-prudential regulation is a recent extension of their mission towards monitoring systemic risks. The steady increase in public debt in many countries appears, in particular, to be a threat to the future stability of the entire financial system, insofar as it increases the risk of a government defaulting, which in turn exposes all of the interdependent agents that make up the

financial sphere to risk. This issue is particularly accentuated in the context of European monetary integration.

Clearly, the representation of the financial field as a system of multiple interdependencies with tendencies towards instability, caused by the fact that prices result from complex socio-political processes, has therefore been reinforced over time and through the experience of financial crises. The awareness of “systemic risks”, which became very strong in 2007–2008, has not, however, led to radical changes in the dominant scientific conception of both markets and central banks: it remains centred on the powerful model of the efficient and self-regulating market, where the independent central bank intervenes to maintain the equilibrium of consumer prices. It is to this renewal that a sociological approach could contribute.

Monetary and financial dynamics since the 2007 crisis

According to many observers, the period that began in 2007 constitutes an inflection, or even a break, in the dynamics that emerged from the financial liberalization of the 1980s, which accompanied the accelerated movement towards central bank independence. The securitization of mortgage loans in the United States is the process underlying the formation of a real estate speculative bubble: when it burst, it led to a series of bankruptcies of financial institutions, until the paralysis of the interbank market following the collapse of Lehman Brothers. The systemic crisis that materialized then had not really been anticipated by the monetary authorities (Fligstein 2021), and neither more broadly by mainstream economists, especially when compared to marginal experts (Pénet 2019).

Monetary policy, faced with the crisis, was first confronted with the need to intervene in the short term to maintain the functioning of the interbank market, by lending massively to banks and, more broadly, to allow financial actors to regain confidence. At the same time, governments intervened in specific

ways (nationalizations, recapitalizations, etc.) to avoid the potential collapse of their financial system.[1] But the scale of the crisis, its globality, the risks it revealed, was at the origin of a lasting inflection: the balance sheet of central banks increased very strongly (to the point of integrating as collateral a large number of more or less doubtful debts), and key interest rates were durably maintained at very low levels in order to facilitate the distribution of credit within the economy. The financial crisis thus led to a shift to so-called "unconventional" policies, which became the norm worldwide from 2008 onwards, whereas they had previously been seen as a peculiarity specific to Japan. The developments of the so-called "subprime" crisis can be seen as a test of relevance for an economic sociology of financialization. The movement towards central bank independence, which is spectacular in Europe with EMU and the creation of the ECB, especially seen from France where the government and the Treasury had long kept the upper hand on monetary policy is an important facet of the financialization process. This is a process of collective belief, in the Durkheimian sense, carried out by professional actors: economists, central bankers, managers and professionals of private finance, senior officials of ministries and international organizations, and last but not least certain central political actors.

However, as early as 2007, this financialization process seemed to be directly challenged. This was especially obvious in September 2008. The crisis of belief was the most striking aspect of what we were witnessing. Nicolas Sarkozy, who in 2005–2007 pushed for the dismantlement of the French welfare state, had become in a few weeks a virulent critic of financialization and the excesses of capitalism. His speeches drew on two pillars of left-wing economic discourse: regulation and economic stimulus. Alan Greenspan and Jean-Claude Trichet, who spearheaded the Great Moderation of the 2000s, witnessed the downfall of the neoliberal creed they had helped to create. This helped to reinforce the hypothesis, which I had in mind since 1993–1994 when I started my work on the monetary policy council of the Banque de France, that central banks are at the nexus of all these issues and that they need to be studied from all these perspectives: their links with fiscal policies and more broadly with economic

(including structural) policies, their imbrication in a system of liberalized financial markets and, finally, their deep interconnections with the international academic field, first and foremost in economics, dominated by the United States.

This crisis reveals, in a strong, almost photographic sense, the deepening interdependencies in the global financial sector that have developed since the 1970s. An event that is at least partly contingent (the development of securitization, which at first sight reduces risks but ended up fostering the distribution of credit to insolvent households) led to the paralysis of the money market and to a credit crunch on a global scale, which then developed into a deep recession, with cross-country variations. The Chinese case is very specific, as the crisis accelerated its growth.

In this sequence, a wide range of policymakers were at the forefront: first central bankers, who dealt with the most urgent issues (liquidity), then political leaders, esp. finance ministers, who were faced with tough choices (nationalization, recapitalization, deposit guarantees, etc.) in the face of looming bank bankruptcies, and finally certain global political actors involved in the creation of new mechanism – bank rescue plans, stimulus plans within the G20 framework, followed by various regulatory mechanisms meant to boost the economy.

To a certain extent, 2008–2009 did indeed start a new era. The global financial crisis displayed well-known patterns of previous financial and banking crises and of cyclical recessions, both of which are often linked. But the “global” dimension is relatively new. The interdependence between central banks increased during this period and their role became even more decisive.

Following François Simiand, we can think that economic history is a succession of imbalances, in which the monetary-financial sphere plays a driving role, “orchestrating” as it does different social groups. In that sense, imbalances are not unique to the period that began in 2008. It does, however, feature new characteristics, which we can theorize with the Elias-inspired notion of interdependency.

Interdependency refers first to the fact, which I've already mentioned, that countries are completely interconnected via the globalized financial markets. A problem in Greece can undermine optimism in the global markets and trigger chain reactions. But this is only but one dimension of the wide range of interdependencies that now characterize our economic and financial system.

The most central interdependency is between governments and large private banks – and more broadly financial actors – under the "patronage" of central banks, and it manifests itself in successive liquidity and solvency shocks affecting both governments and large global companies. The relative balance between these three interdependent components (governments, private financial actors and central banks) was undermined in 2008 and continues to fuel instability today.

Public debt is made possible by expansionary monetary policies, a process that is frequently interpreted as a return to the Keynesian state. But these non-conventional measures result in continuing inflation of asset prices (including real estate), in the ever-growing "power of finance" and in increased downward pressure on both wages and public spending. In that sense, the neoliberal paradigm is still very much alive, albeit in an unstable version, as financial stability is now heavily dependent on central banks. This transforms the current system into an ideological monster, since public debt, which helps to prevent private finance from collapsing, is used to justify the limitation of social spending and the continued existence of acute income inequalities.

At the same time, new objectives have emerged from 2020 onwards in the context of the acute pandemic. Faced with the recessionary and potentially deflationary consequences of the pandemic and the public responses to it, central bankers were particularly reactive and interventionist. Very early on, they recognized the risk of a massive loss of confidence, which would lead to a catastrophic financial amplification of the recessionary dynamic brought about by the sudden stops in activity due to lockdowns. In the context of the euro zone, such a dynamic could take the form of a surge in speculation

affecting the sovereign debt securities of the most troubled countries and, consequently, a new crisis of the single currency.

Very quickly, the activation of quantitative easing (QE) measures already in place was imposed by central banks/central banks activated…, primarily the Federal Reserve Bank, with massive purchase programs in which government debt securities now have a very important weight. In an indirect way, this is the return of what economic history has vulgarly described as the use of "money printing": in the context of crisis or war, central banks massively finance the treasuries of governments.

Careful not to take the risk of increasing mistrust a little more, central banks seem to be trapped in unconventional policies. For all that, the monetary and financial doctrine of the world's main central banks has not changed radically as one might think: their extreme interventionism is aimed at ensuring monetary and financial stability. In the euro zone, they seek to respect an inflation path below, but close to, 2%, which defines their mandate. The fiscal measures of the states, which they support, always obey the "three Ts" (Temporary-Targeted-Timely) rules that emerged during the 2007–2008 crisis. In their forward-looking narrative, as soon as the recovery is clearly underway, a new sequence of responses to the crisis may emerge and monetary policies may gradually return to a "normalcy" that is currently out of reach, as are "normal" fiscal policies. If inflation accelerates, they will not fail to intervene to "cool down" the overheating machine, according to the classic metaphor. The issue will become very topical in 2022, with the war in Ukraine and the predicted rise in energy and food commodity prices.

Will the ECB, for example, help limit the extent of fiscal tightening by asking "surplus" states to compensate for the spending cuts of the most fragile, as it did under President Mario Draghi? Or will the movement be so powerful that it will force the ECB to continue to intervene massively on the monetary front to avoid an even more acute crisis in the euro zone? How can the resurgence of the inflationary threat affect the monetary debate, especially within the euro zone?

Once again, tensions have arisen within the Governing Council, resulting in the further marginalization of the monetary hawks who prioritize the fight against inflation. As in other regions of the world, the proponents of unconventional policies seem to have temporarily triumphed over their orthodox opponents, who are still worried about the resurgence of the hyperinflation of the past. The resurgence of the debate on the inflationary threat from 2021 onwards shows, however, that we must be wary of drawing any definitive conclusions on this matter.

The continuation and acceleration of QE policies contribute at the same time to reinforcing the unequal dynamics linked to financialization: more than ever, QE policies feed financial speculation without having a clear knock-on effect on the level of employee remuneration, whose relative value continues to fall in comparison with the prices of financial and real estate assets. While they make it possible to avoid deflationary processes, they do not stimulate virtuous socio-economic dynamics, and the shock of energy prices in 2022 places them in a new situation.

What contribution can economic sociology make?

One of the first challenges of economic sociology is its contribution to an analysis of socio-historical processes likely to enrich and improve existing interpretative frameworks and, in particular, to go beyond a conception based on the still dominant idea of a self-regulating, transparent, linearly expanding and, above all, fundamentally efficient market, to which an independent and conservative central bank is attached. From this point of view, the particular importance given here to multilevel interdependencies and power relations between actors implies adopting both a structural and historical view (Joly, Lebaron 2022) of economic and financial processes. This is already the case in international political economy or in many historical studies, and to a certain extent in economic science (Boyer 2011). This approach implies in addition for sociologists, by relying on their own investigative

approaches, to determine in each case with precision the particular configuration of the relevant actors, their relational structures, their practices and discourses.

Economic sociology, in particular the sociology of financial markets, has developed various conceptual and methodological tools to think about individual and collective action, interdependencies at different scales between actors (individuals and institutions). They help us to analyse the power relationships between them, and to integrate into the analysis the role of ideas, instruments and interests in financial processes and public policies. These concepts and tools allow us to think differently about the issues facing central banks and monetary policies today.

A first element, common to many sociological and historical studies, is the importance given to concrete actors in the (private and public) world of finance, provided that they are resituated in their various contexts or environments of action. By concrete actors, we mean not only individuals, with their past and their trajectory, but also firms and more broadly organizations that participate in the ordinary functioning of this universe. Individual actors are characterized by dispositions, resources and ways of acting, thinking and feeling, beliefs and interests, which are continuously confronted within institutions, which are themselves placed in relations of competition, strategic alliance or confrontation that are constantly evolving. Each professional group involved in financial activities has its own characteristics and, within each group, "individual styles" are also specified. The empirical study of the universe of financial professionals thus provides a set of key elements (Boussard 2018). In particular, the actors of monetary policy and financial regulation (for the ECB, see Bowles, Dufour 2021) are situated at the intersection of three major social universes: the academic world (Mudge, Vauchez 2018), the financial markets and the State in the broad sense. It is by anchoring them in the empirical exploration of these universes that we can understand the way they act and represent themselves in the world.

Research on central bank actors has had a role in the realization that individuals and their social properties matter to the functioning of the economy: depending on the characteristics of board members, monetary policy orientations vary, as seen in the case of the ECB (Lebaron, Dogan 2016). Anchoring the sociology of finance in a biographical, qualitative approach allows us in particular to reintroduce a form of subjectivity of the actors who populate the financial world. An ethnographic approach leads us even further in the understanding of the motives and forms of action (Ho 2009).

A second essential component of the sociological approach is its relational postulate, or "methodological relationism", which can be applied in many ways and at different scales. Studies mobilizing network analysis are the most obvious, and arguably the most practiced, "relational" approaches in economic sociology (Lazega 1994): its tools apply particularly well to the networks of financial and banking actors that determine the systemic functioning and governance of contemporary capitalism (Uzzi 1999; Dudouet et al. 2015). In the case of central banks, several studies have also addressed their dynamics through networks of participations in organizations related to the transnational central bank universe (Marcussen 2006).

Another, more encompassing relational perspective is associated with the notion of field initially promoted by Bourdieu (2022) and adapted by neoinstitutionalist sociologists such as Fligstein and McAdam (2012). An often overlooked aspect of the notion of field is its insertion into a broader theorization of social space: it allows us to deploy the hypothesis that individuals, whatever their behaviours and interactions, and the institutions within which they act, are inserted into systems of objective relations defined on the basis of their unequal endowments in capital of all kinds, not only financial or economic. These relations largely determine their practices or their decisions. Therefore, the insistence on internal power relations within the field does not imply losing sight of the interdependencies between fields and sub-fields but on the contrary associates them with power relations and asymmetrical endowments in various types of capital.

In the light of this research, the field of finance appears to be a highly differentiated space but also one that is strongly hierarchical between interdependent poles, where unequal professional groups evolve (Lagneau-Ymonet, Riva 2011): they are bearers of multiple orientations, specific interests and particular capital. This field is characterized by the tension between a public pole, with central bankers and public financial administrations, endowed with a form of scientific and state legitimacy, and a private pole, itself highly segmented and hierarchical, maintaining complex relations with the rest of the economy. This last pole is characterized by the growing weight of asset managers at the expense of "traditional" bankers, which has led some authors (Montagne 2016; Benquet, Bourgeron 2021) to speak of a "second financialization" based on the rise of third-party management and new financial vehicles. The contemporary dynamics of finance are inseparable from the evolution of these power relations on a global scale; the trend towards the parallel assertion of the public sector through QE and that of asset managers is the direct or indirect consequence of the obvious failures of private finance, which have become sources of gigantic opportunities for profit linked to the expansionary monetary policies pursued since 2008. The close relationship between central banks and the dominant players in private finance is thus constantly being reconfigured.

A third component of contemporary economic sociology concerns the place occupied by representations, beliefs, ideas, instruments and discourses in the most ordinary functioning of the economy. Whatever the approach, it makes room for the concrete activities that make up the world of finance, including its public component, by linking them to various cognitive processes and devices, including at the micro-sociological level.

Attention to the cognitive-discursive dimension of social activity is present both in analyses centred on the performativity of financial theories, attentive to the socio-technical devices that make it possible (MacKenzie 2006; Callon, Muniesa 2009), and in approaches that give a more important role to the material and symbolic interests of the actors underlying the financial ideologies and doctrines, including

neo-institutionalist accounts (Carruthers et al. 2001). In all cases, financial actors are neither profit-maximizing automatons nor mere bearers of abstract doctrinal beliefs, but rather concrete social agents situated in multidimensional environments that are constantly changing, mobilizing various resources and cognitive supports, which are expressed on a day-to-day basis in both their practices and their discourses. Studies show in particular the importance of the linguistic and social properties of central bankers' communication and discourses (Holmes 2013; Guilbert, Lebaron 2017).

The crisis of the dominant financial belief, which was acutely expressed in 2007–2009, has not yet led to a revolution in the conceptions at work among public or private actors, even if the idea of an efficient market has remained strongly contested. The paradox of the current period is undoubtedly that the maintenance of the established cognitive order in the financial sector is based above all on a radical break in the monetary doctrine of central banks, which has seen the triumph of non-conventional policies in exact opposition to the traditional orthodoxy centred on the sole monitoring of prices and control of the money supply. This break has led central banks to be defined more than ever as the day-to-day guarantors of the stability of the entire system, and the result is that their decisions (for example, future interest rate hikes) are more than ever likely to affect all financial and economic actors and their (im)balances. More than ever, it is therefore the interdependence between central banks and financial markets that is at the heart of the issues.

Scientific perspectives on the sociology of financial markets, monetary policies and central banking

If sociology produces rich empirical descriptions of the past and the present, based on heuristic concepts and multiple approaches, it could also mobilize modelling strategies, which are still underdeveloped but will probably become more important in the future. The relevance of a scientific discipline is also

measured by its capacity to represent in a clear and simple way the functioning of a complex universe (modelling) and to infer reasonable forecasts (forecasting): the power of market finance rests in part on its at least apparent capacity to tell the future, largely in a performative way and, by definition, optimistic and simply readable for the actors. The same is true of the models used by central banks, which do not merely predict but also make a certain future happen, including through their narrative (Guilbert, Lebaron 2017).

The failure of mainstream financial models to predict crises (Walter 2013) is the counterpart of this performative power in ordinary times and reflects on more classical macroeconomic forecasting tools (Pilmis 2019). In contrast, the "prophets" are those actors who anticipate the future reversal, even with very low initial probability (Pénet 2019). However, the limits of the standard model are now partially integrated, for example in research on the macro-prudential regulation of the financial system: to avoid crises, prevention tools give public actors at least the feeling that they are controlling systemic risks (Thiemann et al. 2020). As long as a critical situation (bank failure, government default, etc.) does not arise, finance is considered to be "under control", and private actors can engage in limitless accumulation, facilitated by their neutralization in various forms, of legal regulations.

The interdependencies of the financial system are asymmetrical and linked to multiple and continuous monetary and financial flows: borrowing and lending and, more broadly, exchanges of all kinds determine the dynamics of these interdependencies. This is particularly clear in periods of acute crisis: the potential failure of one actor affects many others, linked to it by commercial or financial relations, and public action has always tried to prevent and limit these domino effects.

Economists, from Quesnay in 18th-century France to the post-Keynesians today (Berr et al. 2018), have represented the flows (and stocks) of the economy in the form of "circuits" in which money and credit play a decisive role, endogenous to the overall economic dynamic. One of the limits of these

representations is that they tend to erase somewhat the actors, their heterogeneity and their multiple relations of power, in favour of relatively homogeneous processes, relations that are by definition "fluid" and devoid of tensions (apart from the overall relationship between wage earners and capital owners). A potentially fruitful perspective should thus add to the necessary study of monetary and financial flows between actors a more precise formalization of the nature of their relations of reciprocal dependence, and in particular of the social power relations that condition the dynamics of the flows themselves. Methods such as network analysis and geometric data analysis can provide more precise multidimensional descriptions of the social spaces concerned and prerequisites for modelling interdependencies.

The ability to predict the dynamics of a system as complex as the contemporary financial world thus depends first of all on the ability to accurately represent the actors, their interdependencies and their power relations, including symbolic ones, in a dynamic perspective. New modelling tools, which make it possible to take into account all of the actors and their decisions within an economy, are thus undoubtedly called upon to be more strongly mobilized in a sociological perspective, by integrating in particular the public/private duality at the heart of the analysis. Agent-based models (ABM), already used for post-Keynesian macroeconomic modelling (Seppecher 2018), are an example of formalization tools that could also allow, for example, the insertion of social relations into the functioning of a complex system of actors at different scales.

Moreover, non-linear dynamic models, long since introduced in finance in opposition to the standard model (Walter 2013), could also in the future be enriched by closer exchanges with sociological analyses of the fields of finance and economy. The model could thus gain in realism and empirical relevance, in particular by shedding light on the different issues at stake in the asymmetrical interdependence relations characteristic of these fields. This would perhaps make it possible to better model the dynamics of relative prices and their evolution, based on a more precise knowledge of all the

interdependencies characterizing the global economic system. A multidimensional dynamic model of the world economy would then be a basis for forecasting.

One of the difficulties of forecasting is the fact that the issues at stake change over time and with the dynamics of public policies, which partly condition financial processes, prices and, in turn, public policies themselves. Thus, new trends have emerged within central banking, on which social scientists can provide readily available insights: the processes of putting on the agenda and constructing public problems (Zittoun 2014) are now a key element in interpreting the evolution of central banking and condition future processes.

While the discourse that central banks have a role to play in addressing climate change made notable advances during the pandemic crisis, one wonders what this inflection means for the future of central banking. In a recent exchange, two members of the ECB's Executive Board, Isabel Schnabel and Frank Elderson (2021), discuss what the central bank could do about climate change, both through its monetary policy (as part of its support for the objectives of the European Union, as long as it does not jeopardize the objective of price stability), and as supervisor of the major European banks (the unification of the "green capital" market being the main watchword in this area). The link with the pandemic is clear, however: the health crisis opens a window of opportunity for energy policy and seems to facilitate the acceleration of what is presented as a necessary and structural awareness. To date, however, the concrete translations of the central banks' commitment to actively participate in the energy transition still seem limited, even if some studies point to the already notable effects of certain measures.

The reference to the participation of citizens in institutions serving the people (Dietsch, Claveau, Fontan 2018) is also beginning to penetrate the centralized and vertical space of monetary policy. Councils composed of a few individuals continue today to steer the monetary and financial future of billions of

citizens, while a few central banks largely determine the course of global monetary and financial processes. This operates in the relative absence of democratic control, apart from the fact that central bankers are appointed by elected political actors draped in popular legitimacy. This emerging issue could intensify as the fair representation of citizens in the leadership of monetary institutions is put on the agenda, with potential consequences for monetary policy and financial regulation decisions.

The arrival of Christine Lagarde in 2019 as president of the ECB, a few years after Janet Yellen's nomination at the Fed, illustrates a recent acceleration in the representation of women at the helm of major central banks, even if the phenomenon remains marginal on a global scale (Lebaron, Dogan 2016). In the ECB's governing council, two female members of the executive board do not make up for the absence of a female governor of a national central bank in 2020. Globally, women represent less than 10% of all governors, and their access to the boards is often through the back door of internal careers and specialized legal-institutional skills, frequently combined with a strong international capital: mastery of languages, ease in international arenas, careers in international organizations, etc.

One can obviously ask to what extent these three dynamics of "putting on the agenda" will translate into changes in monetary policies and affect the deep processes associated with financialization, alongside the technological changes linked to the use of crypto-currencies and digitization, which are more and more often discussed, or the traditional variations of parities on the currency market in a context of instability. On these various levels, sociologists can also, through their empirical work, contribute to the debates and formulate proposals for rational evolutions: these could go in the direction of a democratic and common good-oriented monetary policy, especially in the context of global socio-environmental change (Dietsch, Claveau, Fontan 2018).

Whether or not forecasting relies on formalized models and statistical tools, it is in any case confronted with the complexity of the power relations that structure the world of finance and interact intensely

with those that are specific to the global economic and political fields: the rise of new national actors, the declining trend of Western hegemony and in particular that of the United States, the increasingly intense geopolitical and geo-economic tensions or conflicts around climate, energy or food sovereignty, and, finally, the general crisis of globalization.

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[1] Sarah Kolopp and Caroline Vincensini are currently studying this issue inside the ANR Desorbercy project (with P.Zittoun, P.Hassenteufel, F.Lebaron, P.Pénet, R.Cos, U.Lepont).