CONFERENCE IN MEMORY OF TOMMASO PADOA-SCHIOPPA

MONETARY POLICY AND PAYMENT SYSTEMS

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Tommaso Padoa-Schioppa was critical of the predominant approach in macroeconomic theory, which gives little if any role to money and credit, and thought that a full and joint analysis of the functions provided by money – means of payment, measure of value, and store of value – is essential to understand its role in the economy. In parallel, he saw monetary policy as inextricably linked to financial stability and to the functioning of the payment system.[1]

1. Monetary policy formulation in Italy between the 1970s and early 1980s

Padoa-Schioppa's contributions to monetary policy thinking span a period of over thirty-six years during which he served at the Bank of Italy (1970-1979 and 1983-1997), the European Commission (1979-1983), the Italian Securities Commission, Consob (1997-1998), and the European Central Bank (1998-2005). His first contributions to monetary policy formulation date back to his early years at the Bank of Italy. After completing his post-graduate studies at MIT, he arrived at the Research Department as a young economist in 1970, becoming head of the Money Market Division in 1975. Back then, the Italian economy was afflicted by considerable instability, high and volatile inflation rates, large and sudden depreciations of the currency, and strong rigidities, a "100% plus indexed economy", as Padoa-Schioppa and Franco Modigliani labelled it in their 1977-78 essays.[2] Financial markets were underdeveloped, public debt management non-existent; the central bank and the banking system played a key role in financing the large and rising budget deficits. In spite of extensive financial repression, elusion or outright evasion of capital controls was common. Furthermore, society was racked by violent terrorism, in a context of social unrest. The challenges faced by policymakers in that context were enormous.[3]

In those years, due to the lack of well-developed money markets, monetary and credit management took place through a system of administrative controls on quantities (portfolio constraints on banks' bond investment, ceilings on credit expansion), that

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1 See L. Bini Smaghi (2011), *Tommaso Padoa-Schioppa: economist, policy-maker, citizen in search of European unity*, remarks at the conference in memory of Tommaso Padoa-Schioppa, European University Institute, Badia Fiesolana, 28 January.

2 F. Modigliani and T. Padoa-Schioppa (1977), "La politica economica in una economia con salari indicizzati al 100% o più", in *Moneta e credito*, 117; F. Modigliani and T. Padoa-Schioppa (1978), *The management of an open economy with '100% plus' wage indexation*, Princeton University Press.

3 For a description of the features of the Italian economy in that period and their implications for the conduct of monetary policy, see I. Visco (2011), *Tommaso Padoa-Schioppa, "Architect …"*, remarks at the conference in memory of Tommaso Padoa-Schioppa, European University Institute, Badia Fiesolana, 28 January, pp. 1-2.

generated inconsistencies and conflicts. To address this state of affairs, the Bank of Italy began to lay the foundations of a ‘new system’ that would shift over to indirect monetary controls and open market operations.

Padoa-Schioppa’s participation in this process was influential. He was the promoter of a reform that led the Bank of Italy to assume an active role in the auctions of government paper, and to the adoption of variable rate tenders. This reform enhanced the Bank’s ability to affect the interest rate on T-bills, then the reference rate for monetary policy. It was the beginning of the road to full independence, achieved in the early 1990s after a long series of gradual steps (including the 1981 “divorce” between the Treasury and the Bank of Italy, whereby the Bank ceased to act as residual buyer at Treasury bill auctions, a milestone in this process). As described by Ciampi (2011) and Micossi (2011), Padoa-Schioppa himself vividly recalled that Baffi (at the time Director General of the Bank) initially opposed the proposal of his young collaborator, but then – after sleeping on it – admitted he had changed his mind at a meeting with Padoa-Schioppa and the Board of the Bank, which approved the proposal.[4]

As Rossi (2011) noted,[5] the analytical foundations of Padoa-Schioppa’s important contributions to this reform process (a radical revision of the compulsory reserve regime being another important change in the same years) can be found in studies he made in the mid-1970s[6] and in a wide and enlightening retrospective that he published a decade later.[7] In this essay Padoa-Schioppa provided a vivid description of monetary policy conduct in Italy and the reforms of those years. He also put forward a number of general ideas which would remain a yardstick throughout his entire career as an economist and central banker.

One of these ideas concerned the nature and complexity of the monetary authorities’ tasks, and the relationship between monetary policy, the structural features of the economy and the areas for reform. In his words, “The monetary authority maximizes its objective function subject to constraints that are of both an institutional and an economic nature, and it responds to factors that make such constraints more binding”.[8] In a period in which the sharp increase in the public sector borrowing requirement was one of the main constraints, a transformation of the financial structure became imperative, and the monetary authority had to play a decisive role in this process: “The importance of the role played by the Bank of Italy in this process has been a distinctive feature of the Italian experience. The resources that the central bank has devoted to it suggest that rather than a ‘nuisance’, innovation has been an explicit objective”.[9]

Another way in which he expressed this idea was by arguing (along Tinbergen lines) that economic policy had to include, in addition to “quantitative” actions, also

4 C. A. Ciampi (2011), “In ricordo di Tommaso Padoa-Schioppa”, *Moneta e credito*, 253, p. 5; S. Micossi (2010), “L’Europa di Tommaso Padoa-Schioppa”, www.lavoce.info, 21 December.

5 S. Rossi (2011), “Tommaso Padoa-Schioppa economista”, *Rivista italiana degli economisti*, 16, 1.

6 T. Padoa-Schioppa (1974), “Il controllo qualitativo del credito: considerazioni sulla recente esperienza italiana”, *Moneta e credito*, 108; G. Caligiuri, A. Fazio and T. Padoa-Schioppa (1976), “Domanda e offerta di credito in Italia”, *Banche e banchieri*, 6.

7 T. Padoa-Schioppa, “Reshaping monetary policy”, in R. Dornbusch, S. Fisher, J. Bossons (eds.), *Macroeconomics and Finance. Essays in honor of Franco Modigliani*, The MIT Press.

8 T. Padoa-Schioppa (1987), op. cit., p. 265.

9 T. Padoa-Schioppa (1987), op. cit., p. 266.

"qualitative" actions, designed to change structural characteristics of the economy. In his view the Italian experience in the period under consideration provided ample evidence that this concept "applies forcefully to monetary policy, which normally encompasses both the manipulation of policy variables *in* a given structure and deliberate innovative action *on* the structure itself".[10]

2. Monetary policy "styles"

Between 1979 and 1983 Padoa-Schioppa served as Director General for Economic and Financial Affairs at the European Commission. After returning to the Bank, he was appointed Deputy Director General in 1984 (a post which he then held for thirteen years). The European Monetary System had been established in 1979; in the second half of the 1980s exchange rate controls were removed and capital movements were completely liberalized. During this period he devoted his energies to the thorough transformation of the Italian financial infrastructure.[11] At the same time he concentrated on the exchange rate system and on the process that eventually led to the European Economic and Monetary Union. In this period he put forward the idea that the coexistence in Europe of free trade, full capital mobility, fixed (or managed) exchange rates and national monetary policies would generate an "inconsistent quartet", and that the only solution to the inconsistency would be to complement the common market with a monetary union.[12] As Bini-Smaghi (2011) points out, in the early 1980s these ideas were still pioneering and visionary, but they later became extremely influential in shaping the history of Europe, turning vision into reality.[13]

In this period he also put forward his ideas about monetary policy strategy. In a paper published in 1996 he discussed the relative merits of rules versus discretion, and activism versus non-activism, arguing "that the conflict between activism and non-activism is still present, at a deeper level, once one fully acknowledges the implications of uncertainty. Adding uncertainty to a model does not simply involve adding a stochastic term to its equations. What uncertainty really implies is that there are unforeseeable events that cannot be incorporated in a stochastic rule, no matter how sophisticated it may be".[14] These ideas reflected his awareness of the importance of

[10] T. Padoa-Schioppa (1987), op. cit., p. 267.

[11] I. Visco (2011), op. cit., recalls – among the many transformations carried out in those years – the suppression of direct credit controls, the reform of reserve requirements, the adoption of competitive-bid auctions for Treasury bills, the introduction of longer-term Treasury bonds (with uniform price auctions) and indexed Treasury credit certificates, the establishment of screen-based markets for government securities and for inter-bank deposits.

[12] T. Padoa-Schioppa (1982), *Capital mobility: why is the treaty not implemented?*, address to the Second Symposium of European Banks, Milan, June; *The EMS is not enough: the need for monetary union*, address delivered to the conference on "The European monetary system", Perugia, October 1987, later published in T. Padoa-Schioppa (1994), *The road to monetary union in Europe*, Clarendon press. The idea of an "inconsistent quartet" had previously been set out in the literature as the impossible trinity proposition, according to which a group of countries cannot simultaneously maintain a fixed exchange rate, carry out autonomous monetary policies and retain full capital mobility. Padoa-Schioppa adapted this proposition to the specific European context, including free trade as a fourth element; above all, he saw the adoption of a single monetary policy and a single currency as the most coherent way to reconcile these elements (L. Bini Smaghi, op. cit., pp. 2-3).

[13] L. Bini Smaghi (2011), op. cit., p. 3.

[14] T. Padoa-Schioppa (1996), "Styles of monetary management", *Bank of Japan monetary and economic studies*, 1, p. 44.

taking into account in the policy-making process the concepts of model uncertainty and robust control, built upon theoretical ideas developed in previous decades (such as "knightian uncertainty") and later formalized by economists such as Hansen and Sargent. He added that "once the two extreme hypotheses of deterministic rules and arbitrary action are rejected, experience shows that rules, even when provisos are added, must allow for discretionary action by central banks to cope with the complexity of real life, changes of a structural nature and extraordinary events. A strong central bank is an institution which is in the position to act in a discretionary way". At the same time, he was well aware that modern central banks had to balance their growing independence vis-à-vis the political sphere with increased accountability for their actions to the government, parliament and the public.

In the same paper, he discussed what he called the possible "styles" of monetary management. He distinguished three styles based on a formal and quantified pre-commitment to a single target variable (the exchange rate, the money supply or the rate of inflation) and a fourth one, which he called the "classic" style, that relied instead on a multiplicity of variables and did not entail a prior commitment by the central bank to react to a specific indicator. He observed that the styles actually implemented by central banks deviated in many instances from those formally announced and that the "classic" style had been, on the whole, the most widely adopted. Based on inflation performance, he also noted that price stability can be achieved through different styles and that a formal pre-commitment to a single target variable may not be as important in practice as it might appear in theory; furthermore, "central banks should be aware that trying to influence market expectations by 'speaking up before' may be useful but that the best way to win credibility is still through the results they achieve and the determination and consistency they show in their behaviour".[15]

This line of thinking explains his scepticism about inflation targeting. Since this was, at the time, a newly emerging style and it was therefore not yet possible to judge its effectiveness empirically, he discussed it *a priori* and concluded that the main merit of inflation targeting, i.e. the focus on price stability, also represents its most serious drawback, because it forces the central bank to make a formal commitment with respect to an economic variable that is beyond its full and direct control, especially in the short time horizon used for judging monetary policy actions. His preference went to the classic style. To critics who lamented the lack of transparency of this style, Padoa-Schioppa answered that "transparency should not be reduced to announcements. Central banks adopting the classic style try to eschew both the gambles and the monistic bias of some recent strands of theory, while incorporating the useful elements that can be distilled from them and from experience inspired by them […] They are by no means inherently less transparent and accountable than central banks adopting inflation targeting". [16]

In the following years, Padoa-Schioppa's main ideas on monetary policy and the tasks of the central bank did not change substantially. As a member of the Executive Board of the ECB, he again used the four archetypes coined ten years earlier, with the only difference that the classic style was renamed "discretion".[17] He saw the ECB

[15] T. Padoa-Schioppa (1996), op. cit., p. 40.

[16] Tommaso Padoa-Schioppa (1996), op. cit., p. 54, p. 63.

[17] T. Padoa-Schioppa (2004), "Monetary policy: as strong as the Deutsche mark", in *The euro and its central bank*, The MIT Press.

approach as choosing none among money targeting, inflation targeting and discretion, while drawing something from each of them; recognizing the merits of the rather eclectic approach prevailing for over a quarter century among leading industrial economies and avoiding tying monetary policy action to a single variable; not seeing inflation expectations as sufficient to depict exhaustively the state of the economy; using a plurality of models, not a single model or paradigm; regarding a margin of flexibility to cope with exceptional circumstances as desirable; and, all in all, favouring a wide discretion over a simple rule.

He discussed the arguments of the main critics of the ECB strategy (Svensson and Galí are mentioned as the main examples), arguing that, in conclusion, "large part of the dispute over the ECB strategy can be traced to a differing appreciation, of the ECB and of some of its critics, as to whether monetary policy should rely on a diversified, or else a unified, all-encompassing model of the economy. The rationale for a discretionary policy label, such as that widely used in the quarter century before the start of the euro, is not only for a simple desire to be free at the moment of policy decisions, it is also in recognition of the risks associated with an unconditional adoption of a single model without conclusive evidence that it is the best model. Discretion, which implies some eclecticism, in turn confers some robustness to policy-making". He concluded that "A strategy, useful as it is for good decisions, does not yield decisions. Its role is to identify relevant information, help interpret it, and connect it with possible actions, but not to mechanically produce a decision. Ultimately this is due to the fact that a decision is an act of *will*, not an act of *knowledge*". [18]

3. The payment system: thought and action

Until the 1980s, the debate on money did not centre on its role as a means of payment. Most of the analysis focused on the two other functions of money, that of numéraire and that of store of value. Likewise, the particular technology of payments went largely unheeded in those decades. It was generally taken for granted that money was essentially fiat money, paper legal tender or cheque. "Technological change set the thinking about money in motion once again. Innovation was brought about by the joint application of electronics and telecommunications. In the payment system, this innovation has determined epochal changes. What started out as a product innovation (electronic money) ended up as a fundamental process innovation (the modification of the circuits for the exchange of money)."[19] Perhaps more than any other area over which Padoa-Schioppa exercised his intellect, that of payment systems is the one in which his deeds have been as important as his thinking.

As noted by Visco (2011), it is now natural to think that a smooth, well-functioning and economical payment system is a pre-requisite of a modern financial system. But this is a relatively recent achievement, following the information and communication technology revolution. In the mid-1980s the large value payment system was rather neglected and far from well-organised, not only in Italy. In the 1980s, the gradual spread of new technologies and developments in financial markets fuelled a spectacular growth in the volume of transactions going through large value payments systems – the set of structures and procedures used by financial intermediaries, mainly banks, for

[18] T. Padoa-Schioppa (2004), op. cit., pp. 76-77.

[19] T. Padoa-Schioppa (1992), foreword to *La moneta e il sistema dei pagamenti*, il Mulino.

payments among themselves. During the decade, volumes went from 35 to 80 times annual nominal GDP in the US; in Japan, over the same period, they went from 20 to 115 times GDP. Until then, banks in the main industrialized countries had exchanged payments largely through net settlement systems, mechanisms that would allow banks to exchange promises of payment during the day and settle the net balance at the end of the day in base money. The exceptional growth in volumes increased the counterparty and credit risks generated by these systems. Central banks gradually became aware of these risks and started to think about ways to curb them. The US Federal Reserve was among the frontrunners in this area. The Fed's own large value payment system, called Fedwire, allowed banks to settle their payments in real time using base money; banks could run uncollateralized overdrafts during the day, free of charge as long as they were paid back by close of business. In practice, the Fed would make good a bank's overdraft, bearing the credit risk until the payer reimbursed it at the end of the day. The risk became painfully clear to the US central bank when on November 21, 1985, the Bank of New York failed to reimburse its daylight overdraft, and the Federal Reserve Bank of New York was forced to extend the bank an overnight loan from the discount window equal to several times its supervisory capital and to 10 percent of the US monetary base, far larger than any other loan in its history.[20] While the episode ended well, as the failure turned out to be due to a technical problem, it made the central banking community well aware of the risks created by the staggering growth in payment volumes and by high tech payment system.

At that time the Italian interbank payment system was heavily outdated. The settlement of cheques or the completion of a credit transfer were long and cumbersome processes that involved a fragmented set of bilateral arrangements between banks. Diffidence and competition prevented banks from joining forces and investing in infrastructures that would have benefited all. Padoa-Schioppa saw this, and became convinced that a change was needed. More broadly, he believed that central banks should focus not only on monetary policy, but also on improving the payment system and the other market infrastructures that are essential to a market economy.

He therefore embarked on an effort to improve the Italian payment system. He set up a new coordination structure at the Bank of Italy, the Technical Secretariat for the Payment System, and became its driving force. The Secretariat relied on several departments and encouraged their cooperation, as well as that of Italian commercial banks, helping bridge the gap between Italy and other major economies in this field. Initially the reforms promoted by Padoa-Schioppa involved the clearing system, with the launch of dedicated projects for various payment types (customer paper-based and electronic, inter-bank, foreign exchange, securities trading). He was then instrumental in the realization of a state-of-the-art national real-time gross settlement (RTGS) system which put the Bank of Italy among the frontrunners in this area. By the end of the 1990s RTGS systems had become a worldwide standard.

In these years Padoa-Schioppa was also deeply involved in the process of European monetary unification. He soon realized that the creation of a single currency would have to be accompanied by the institution of a unified mechanism for its circulation throughout the European economy. The euro area real-time gross settlement system, TARGET, was, and still is, the backbone of the monetary policy technical apparatus in the euro area. As it allows banks to exchange funds in real time and therefore to

[20] P. M. Garber and S. R. Weisbrod (1992), *The Economics of Banking, Liquidity and Money*, Heath.

arbitrage away differences in overnight rates across borders, it is a prerequisite for the implementation of the single monetary policy. As pointed out by Visco (2011), a workshop organized by Padoa-Schioppa at the Bank of Italy's conference centre in Perugia (SADiBa) in November 1991 revealed how fragmented the procedures and mechanisms of the various European countries were and set the agenda for payment system evolution over the following years. From 1991 to 1995 Padoa Schioppa chaired the Working Group on Payment Systems of the central banks of the European Community. When he joined the Governing Council of the European Central Bank he promoted the move from TARGET to TARGET2, an innovative, highly efficient and secure RTGS created and jointly managed by the Bank of Italy, the Deutsche Bundesbank and the Banque de France on behalf of the entire Eurosystem, which settles interbank payments for each euro area country. Between 2000 and 2005 Padoa-Schioppa served as Chairman of the Basel Committee on Payment and Settlement Systems, an appointment that marked a worldwide recognition of his leadership in this area.

4. Monetary policy and financial stability

Padoa-Schioppa was of the view that, in general, sound monetary and financial stability policies support each other, although they should remain distinct (see the companion note "Financial system regulation and supervision" by De Vincenzo and Generale). His criticism of narrowly-defined inflation targeting and his endorsement of the classic approach are consistent with the rethinking on the subject triggered by the financial crisis among leading central bankers and academics. At the same time, he was also aware, at least since the early 2000s, that price stability is certainly not a sufficient condition for financial stability, based on the observation that significant episodes of financial crises in the previous two or three decades had in fact taken place in a context of overall price stability.

He also believed that there could be an occasional trade-off between monetary and financial stability, and that higher inflation in the short term could be accepted in some cases to avoid financial instability: "An important question is: could there be circumstances in which the monetary policy stance required to maintain price stability could harm the stability of the financial system? Theoretically, such situations do have fairly robust underpinnings, although empirically these occasions appear to be quite rare - mainly a result of the strong link between recessions and financial crises. But such situations can arise. If for example, the central bank assigns a relatively high probability to financial instability and assesses that such instability is associated with deflationary tendencies, it may need to accept higher inflation in the short term".[21] Therefore, monetary policy tools, such as interest rates and market operations, could at times be used to promote financial stability. In the short run, easing monetary conditions may be entirely appropriate for central banks concerned about system-wide financial problems, if there is a risk that they may in turn disturb monetary stability.

[21] T. Padoa-Schioppa (2003), *Central banks and financial stability,* remarks at the Central Bank of Indonesia, Jakarta, 7 July, p. 2.