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MONETARY POLICY AND FISCAL DOMINANCE IN ITALY FROM THE EARLY 1970s TO THE ADOPTION OF THE EURO: A REVIEW

by Eugenio Gaiotti* and Alessandro Secchi*

Abstract

This paper reviews the main literature and evidence on the relevance of fiscal dominance in Italy in the last part of the 20th century and examines the evolution of the techniques of Treasury financing and of monetary targets. In the early 1970s budget deficits and monetary base creation were correlated, but the paper argues that monetary accommodation mostly reflected the considerable weight that the monetary authority assigned to real objectives and to fine-tuning policies. The monetary regime changed in the early 1980s: public deficits continued to expand, but monetary base creation associated with the Treasury decreased, money targets were met, disinflation was successfully initiated. According to the paper, the review of the Italian experience indicates that monetary policy effectiveness in achieving price stability requires the adoption of clear objectives and the independence of the central bank, but it does not require the latter's sphere of action to be limited to a specific set of operational tools. Furthermore, it signals that the independent management of monetary policy is not a sufficient incentive to foster fiscal responsibility.

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Keywords: Bank of Italy, monetary policy, fiscal dominance.

Contents

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1. Introduction

In Italy a lively debate has long been under way as to whether, and how, in the second half of the 20th century the achievement of the central bank's final objectives and the autonomy of monetary policy may have been hampered by the constraints of fiscal policy (fiscal dominance). A number of questions have been raised: was the inflation observed in the 1970s caused by the need to accommodate fiscal needs? Or was it instead the result of the overall setup and objectives of monetary policy? How great was the risk of the central bank becoming "hostage" to the fiscal authority, and what institutional reforms were needed to avoid it?

This paper offers a brief review of the main interpretations, facts and empirical evidence on these issues, also taking into account the substantial evolution of monetary policy institutions and tools during the 1970s and 1980s. Recalling the main elements of this debate may offer some guidance for today's concerns, as discussion about the risk of fiscal policy dominating monetary policy has been rekindled recently by the sharp increase in public debts in many advanced countries, the sizeable central bank interventions in the secondary government bond markets and, in particular, by the sovereign debt crisis in the euro area. Some questions keep recurring. Public discussion revolves around whether central banks could become hostage to the fiscal authority and ultimately put the objective of price stability at risk, or whether government bond purchases on the secondary market, a traditional monetary policy tool, might effectively serve monetary policy purposes; whether, to this end, it is enough for the central bank to keep its independence in pursuing objectives and implementing policies, or whether additional restrictions on the set of instruments it can use are necessary; whether a proper fiscal policy framework should be designed to support the effectiveness of monetary action and avoid moral hazard, or whether the threat of higher interest rates and a non-accommodating monetary policy is a sufficient incentive to fiscal responsibility.

To shed light on these issues, we organize this survey of the Italian experience under four headings: interpretations, institutional evolution, empirical research, and facts about monetary creation. After defining the concept of fiscal dominance in Section 2, in Section 3 we look at the main points of view concerning its relevance in Italy from the 1970s to the 1990s. Section 4 recalls the evolution in monetary policy institutions,

objectives and instruments during the same period. Section 5 reviews the existing empirical evidence. Section 6 presents the main stylized facts on the relationship between Treasury financing and the evolution of monetary variables and prices. Section 7 attempts to draw some conclusions.

2. Definitions

The economic concept of fiscal dominance is more complex than the legal definition that states that monetary financing consists in any form of direct financing to public entities.[1] There are sound political economy reasons for why direct monetary financing is forbidden.[2] However, on economic grounds, other forms of monetary interventions might also reflect the predominance of the fiscal over the monetary authority; at the same time, it would be misleading to identify a situation of fiscal dominance with the central bank's recourse to a specific set of monetary instruments. Indeed, monetarist theory holds that the composition of the channels of monetary base creation should have no importance for the monetary stability objective. According to Friedman (1970), "inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the *quantity of money* than in output". This implies that what determines the rate of inflation or the short-term effects on economic activity is the evolution of the monetary base as a whole, regardless of whether the central bank has supplied money to the economy through the Treasury, the banks, open market operations or the external channel. What counts, therefore, is the determination of the central bank in pursuing the objectives of monetary policy and not its recourse to a specific set of instruments.[3]

These observations suggest that, as the economic literature has concluded, a more interesting and economically relevant discussion of the presence of fiscal dominance should

[1] The Treaty on European Union states that monetary financing consists in any form of direct financing to public entities, i.e. through credit facilities or purchases on the primary market (Art. 123). Purchases on the secondary market are, instead, allowed by the Treaty; however, a European Council Regulation clarifies that purchases made on the secondary market must in any event "not be used to circumvent the objective of that Article." (Council Regulation (EC) No. 3603/93 of 13 December 1993).

[2] Cottarelli (1993) emphasizes, inter alia, the fact that a prohibition is an institutional marker of the separation between the central bank and the government.

[3] An earlier proposal by Friedman (1948) seems to go even further. The proposal was to create a fiscal authority that satisfies its inter-temporal budget constraint; central banks could then dispense altogether with providing funds to banks or operating in the open market, while "government expenditures would be financed entirely by either tax revenues or the creation of money: … [cyclical] deficits and surpluses in the government budget would be reflected dollar for dollar in changes in the quantity of money".

be "based on [the central bank's] motivation rather than its actions".[4] From this perspective, what counts is whether the central bank's operations are aimed at achieving its ultimate objectives or whether they are directly or indirectly determined by the actions of the fiscal authority. This implies that, in general, the use of any specific monetary instrument, like for example the recourse to open market operations in the secondary government bond market, is neither a sufficient, nor for that matter necessary, condition for fiscal dominance.

Fiscal dominance has been defined as a situation in which the duty to satisfy the government's intertemporal budget constraint falls on monetary policy rather than on fiscal policy.[5] In their formal description of this concept, Sargent and Wallace (1981) characterize a situation of fiscal dominance as a coordination scheme in which the fiscal authority acts first and independently sets its current and future deficits and surpluses, thus determining the overall amount of revenues that must be raised either through bond sales or seignorage; the monetary authority operates under the constraints imposed by private demand for government bonds and the need to ensure the solvency of the fiscal authority.[6] Although in this situation the monetary authority might still be able to achieve its objectives, its scope for intervention is clearly more limited.

The interaction between the fiscal and the monetary authority and the conditions that bring about a situation of fiscal dominance are analysed at length in the literature. It has been concluded that in order to counteract this risk and reduce the incentives for the fiscal authority to behave irresponsibly, the monetary authority must (i) be assured of a high level of instrument independence, both formally and substantively, (ii) be assigned clear objectives, and (iii) be given responsibility for achieving results.[7]

However, when the fiscal authority adopts lax budgetary policies, even the conditions listed above may not be sufficient to safeguard the sphere of action of the monetary authority: it has been argued that, when recurring budget deficits make the public

[4] See Thornton (2010).
[5] Masciandaro and Tabellini (1988).
[6] By contrast, "monetary dominance" prevails when the monetary authority acts first and independently sets its instruments to achieve its objectives; the fiscal authority chooses future deficits and surpluses subject to the solvency constraint. The concept of "fiscal dominance" is also formally defined by Leeper (1991), who uses the terminology of "active" fiscal policy and "passive" monetary policy, and by Woodford (1995), who provides the foundations for a "fiscal theory of the price level".
[7] See Alesina and Stella (2011) for a review of the literature on the political economy of monetary policy.

debt unsustainable, the monetary authority may eventually be forced to monetize it, regardless of the institutional arrangements.[8] On these grounds it has been concluded that, together with clear objectives and governance that ensures independence for the central bank, institutional arrangements for the conduct of fiscal policy that guarantees the long-term sustainability of the public debt is also a necessary condition for monetary stability. This is one of the fundamental reasons why in the euro area the introduction of the single currency occurred in association with the adoption of the Stability and Growth Pact.[9]

3. Fiscal dominance in Italy, 1970-98: points of view

From the mid-1960s to the early 1990s Italy ran unsustainable fiscal policies, with high deficits and persistent primary imbalances that fuelled public debt accumulation.[10] Some contributors to the debate have argued that the dominance of fiscal impulses in monetary creation was the principal cause of the high levels of inflation observed in Italy in the 1970s. The issue is, however, controversial. It has been maintained that although fiscal policy placed significant operational limits on monetary policy up to the early 1980s, these constraints were *per se* not so great as to prevent the monetary authorities from achieving their objectives. Instead, the high levels of inflation observed in the 1970s were the result of the overall set-up of monetary policy that was characterised, as in other central banks at the time, by a lack of clearly specified price stability objective, a strong emphasis on fine-tuning the economy and the perception of an extremely unfavourable short-run trade-off between inflation and economic activity (determined, among other factors, by a rigid wage indexation system).

Proponents of this second view stress the fact that once the Bank of Italy adopted price stability as its final objective and started to set precise intermediate targets, the behaviour of fiscal variables had a negligible effect on price dynamics. The need for a "change in the monetary constitution", to be pursued by reinforcing central bank autonomy, was advocated by the Bank of Italy and started to be implemented in 1981.

[8] The alternative would be to allow the fiscal authority to default on its debt. According to Kocherlakota (2011), this event could expose the economy to considerable risks of recession in the short and medium run (a suboptimal outcome when default is due to a coordination failure among investors, i.e. to a sovereign debt run; see also Blanchard, 2011) and, although further research is needed into the trade-off between the cost of default and the cost of higher inflation, it cannot be excluded ex ante that in some circumstances it may be better for the central bank to loosen its stance and support the solvency of the fiscal authority.
[9] See ECB (2008).
[10] Balassone, Franco, Momigliano and Monacelli (2002).

There is a general consensus that the reforms adopted in the early 1980s marked a "milestone" in the evolution of monetary policy in Italy, and have been referred to as a far-reaching "monetary regime change". After these reforms, monetary base creation by the Treasury rapidly decreased and was sterilised, money targets were met and inflation steadily declined.

Fratianni and Spinelli (2001) are the leading proponents of the thesis that monetary policy has been dominated by fiscal policy for most of Italy's monetary history; they maintain that growth of the monetary base was dominated by the growth of the Treasury component.[11] According to their reading, fiscal dominance reached extreme levels in the 1970s, under the pressure of large and growing budget deficits, also as a result of the adoption of specific policy objectives[12] and the introduction of administrative controls on banks and of foreign exchange restrictions, designed to keep the cost of public sector borrowing under control.[13] The latter critique has also long been made by Mario Monti.[14] Fratianni and Spinelli also maintain that a tendency of monetary policy to support economic expansions for too long can be traced back to its subordination to political power.

In their view, the Bank of Italy's stance in that period is well illustrated by a famous passage by Governor Carli in the Annual Report on 1973: "We asked ourselves then, and continue to do so, whether the Bank of Italy could have refused, or could still refuse, to finance the public sector's deficit by abstaining from exercising the faculty, granted by law, to purchase government securities. Refusal would make it impossible for the government to pay the salaries of [...] civil servants, and the pensions of most citizens. It would give the appearance of being a monetary policy act; in substance it would be a seditious act, which would be followed by a paralysis of the public administration".

Toniolo (1999) contends that the perspective of Fratianni and Spinelli is limited and fails to take adequate account of the severe political tensions plaguing Italy in the 1970s. He argues that, as for the 1970s, "if a degree of stagflation was common to all European

[11] Fratianni and Spinelli (2001), pp. 720-21.
[12] Between 1974 and the early 1980s, the Bank of Italy adopted an intermediate monetary policy objective (total domestic credit), which took the public sector's liquidity requirement as a given.
[13] They argue that these administrative measures (such as the ceiling on the growth in lending and the securities investment requirement) were used to limit the provision of credit to the private sector and to force banks to purchase government bonds.
[14] E.g., see Monti (1989).

countries, social conflict was nowhere as rife as it was in Italy"; and wonders whether better styled monetary institutions could have resisted the social pressure in each one or in most of those episodes, and with what results. From this viewpoint there was, then, a conscious decision by the Bank of Italy that an accommodating monetary policy was the best option among those available.[15]

The concerns later expressed by Governor Carli (1991) appears to echo this view: "How can we judge the policy adopted in the early 1970s, which some people mistakenly deemed 'permissive', if no account is taken of the [extreme social tensions, and of the violent demonstrations of the] fourteen-year-olds I used to see every morning streaming past my study on Via Nazionale? Public opinion had been shaken by mysterious episodes associated with the strategy of tension. Were we supposed to ignore it?".[16]

Ciocca and Nardozzi (1993) note several underlying reasons for the accommodation of inflation in the 1970s: inflation in those years seemed inevitable and in a certain sense the lesser evil, because "deeply rooted in the currents of philosophical and political thinking that had influenced economic life since the Great Depression and, in particular, since the 1960s". They claim that higher interest rates were considered unrealistic, not least because they were deemed inappropriate owing to the widely feared repercussions on production, employment and the systemic stability of banking and financial intermediation.

Indeed, there is consensus that Governor Baffi's awareness in the mid-1970s of the need for "expressly charging the central bank with the protection of monetary stability" marked a turning point in the conduct of monetary policy.[17] Favero and Spinelli (1999) acknowledge the importance of Governor Baffi initiating a theoretical counterrevolution that would gradually enable the Bank of Italy to become independent and adopt price stability as its substantive objective. This radical change was also considered to reflect the progressive development of a secondary market for government bonds which endowed the Bank of Italy with a powerful instrument – outright open market transactions – to absorb the excess liquidity created in the first part of the 1970s.[18]

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[15] Savona (2007) proposes an alternative viewpoint according to which the defining characteristic of Italy's monetary history was foreign dominance even more than fiscal dominance.
[16] Carli (1991), p. 261.
[17] Concluding Remarks, Annual Report on the year 1976.
[18] Fratianni and Spinelli (2001), p. 454.

At the beginning of the 1980s, major changes in the monetary regime were introduced after Governor Ciampi called for a "change in the monetary constitution". There is general agreement that these reforms (beginning with the so-called "divorce" between the Bank and the Treasury in 1981[19]) were crucial in strengthening the Bank of Italy's autonomy from the government and in fostering monetary stability. According to Padoa-Schioppa (1987), the "divorce" was a milestone in the evolution of monetary policy in Italy. Tabellini (1987) calls it as a "monetary regime change".

In contrast, the effects of this "monetary reform" on public finance developments were not satisfactory. As recently remarked by Draghi (2011), "those who were expecting that the central bank's refusal to accommodate public deficits with monetary financing would have induced more responsible fiscal policies remained disappointed. [...] Ten years after the "divorce" public deficits were still between 10 and 11 percent of GDP; in 1994 the debt to GDP ratio was above 120 percent."

Some observers also argued that in the 1980s public finance kept affecting prices, through both the demand and the supply side. Micossi and Papi (1994) observe that the public sector contributed to the temporary rekindling of inflation in Italy in late 1980s, via public wage policies, the extensive support to groups or industries that distorted relative prices and curtailed competition, and the increase in public expenditure that pushed up consumption and domestic demand even in a period of strong exchange rate appreciation.

Therefore, Padoa-Schioppa (1987) argued that "with a public debt and a fiscal deficit approaching, respectively, 90% and 15% of GDP, the conflict between fiscal policy and monetary policy is in the facts. […] The operational procedures, the instruments of intervention, and the institutional independence are necessary, but not sufficient conditions for monetary stability."

In this vein, the fiscal dominance hypothesis was discussed again, although from a quite different perspective, after the lira left the European Exchange Rate Mechanism in 1992 and in the light of the extreme tensions that affected the government securities markets in that period. The argument was advanced that, in those conditions, fiscal

[19] See the following section.

indiscipline would inevitably diminish the effectiveness of monetary policy in controlling inflation via self-fulfilling effects on the exchange rate. According to Visco (1995), "anticipating a non-negligible risk of inflation associated with the future evolution of the debt, the markets have tended to induce an excessive depreciation of the currency and this clearly hinders the attainment of otherwise reasonable inflation targets". This argument substantiated the claim that monetary policy "needs to be supplemented by firm and timely action on the fiscal front, by a clear and easily assessable program of fiscal consolidation capable of dissipating the many doubts and uncertainties that seem to prevail in the financial markets". These concerns, however, did not prevent the Bank of Italy from "acting first", tightening policy in 1994-96; in the following two years the consolidation of public finances accelerated, bringing public deficits below 3 percent. In 1997-98 inflation fell to below 2 percent.

4. Institutional evolution: Treasury financing, monetary policy instruments, objectives.

It is useful to consider these views against the backdrop of the numerous institutional changes made to monetary policy in Italy during the same period. Three aspects are in particular considered: the innovations in the techniques for Treasury financing, the developments in the instruments and in the operational autonomy of the central bank, and the evolution of the central bank's objectives (see Table A1 in the Appendix; Table A2 reports the dynamics of the main macroeconomic variables).[20]

A discussion of the challenges faced by Italian fiscal policy in this period is largely outside the scope of this paper. As it has been extensively discussed in the literature,[21] severe imbalances fuelled public debt accumulation since the early-1970s; a consolidation process was started in the mid-1980s, but initially lacked determination and had limited effects; the adjustment accelerated in 1992 for domestic reasons, while after that year EMU fiscal rules and the prospects of joining monetary union played a major role in the adjustment.

[20] For a comprehensive analysis of Italian monetary history in the closing years of the last century, see Padoa-Schioppa (1987), Visco (1995), Passacantando (1996), Fratianni and Spinelli (2001) and Gaiotti and Rossi (2004).
[21] For a broad overview of the fiscal policies implemented in Italy since the 1960s, see Balassone, Franco, Momigliano and Monacelli (2002) and Morcaldo (1993).

A number of additional dimensions in the change in the monetary regime and the process of disinflation in Italy must also be kept in mind, although they cannot be satisfactorily addressed here. Structural reforms (the development of efficient financial markets, the progressive abolition of foreign exchange controls, the reform of labour market institutions) were a key component of economic policies conducive to price and macroeconomic stability. Padoa-Schioppa (1987) argues that these structural reforms were at least as important as the day-to-day conduct of monetary policy: he argues that the classical definition of economic policy not only includes quantitative actions, but also qualitative actions, and that the conditions prevailing at the end of the sixties made the use of qualitative policies necessary.[22] Some features of these qualitative actions in the period 1960-98 (the innovations in government bond markets, and the reform of labour market institutions) are also provided in Table A1. On these aspects, the reader is however referred to the vast existing literature.

The 1960s

In the 1960s the government deficit was small; it was largely funded on the market, mostly via the issuance of medium and long term securities (as well as via postal savings).[23] The Bank of Italy financed the Treasury through an overdraft facility which enabled the government to obtain funds of up to 14 per cent of current and capital expenditure for each fiscal year.[24] The issuance of Treasury bills via an auction system started in 1962. Until 1969, the Bank of Italy would not participate in the auction, but subsequently trade Treasury bills at the auction price. Since 1969, it was decided that the Bank was empowered (not obliged) to subscribe the unsold amounts of securities on the primary market and resell them on the secondary market.[25] These forms of Treasury financing did not pose pressing problems, as long as the government deficit remained small in relation to GDP, as was the case until the early 1970s (in 1970 public debt was still below 40 percent of GDP and the public deficit was still around 3 percent).[26]

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[22] According to the definition proposed by Tinbergen (1952) "qualitative actions" are those in which "a change in organization is aimed at, meaning, in mathematical language, that the type of certain structural relations existing before is changed". According to this definition the creation of a new market, as well as, the change of certain patterns of economic behaviour are indeed the results of "qualitative actions".

[23] Salvemini (1989).

[24] In the first part of the 20th century overdrafts on the deposit account of the Treasury with the Bank of Italy were prohibited. This constraint was lifted during the Fascist era and re-introduced in the form discussed in the text in 1948.

[25] Salvemini (1989).

[26] Francese and Pace (2008).

Until 1971, the monetary strategy was constrained by the Bretton Woods fixed exchange rate regime. Monetary policy was subject to the external constraint; however, the pervasive controls to international capital flows left some domestic room for manoeuvre. All in all, monetary policy objectives in Italy were largely related to the real economy: support for investment, capital formation, the preservation of satisfactory competitiveness with respect to the main commercial partners and balance-of-payments equilibrium. Price stability was one of the objectives, but was mostly seen as a necessary condition in order not to endanger convergence with the other European countries.[27] Of course, the priority accorded to "real" objectives in that period was not peculiar to Italy, but was influenced by the political climate and economic policy mix of other industrial countries.[28]

The 1970s

At the beginning of the 1970s, after the first oil shock, inflationary tensions rose; in 1971 the Bretton Woods system was abandoned. At the same time the increase in public deficit and debt put increasing pressure on the need to issue securities and on interest rates.

In 1975, a comprehensive reform of the placement system for Treasury bills was introduced, with the main purpose of supporting demand at auctions and increasing the efficiency of the allocation mechanism. The Treasury set a minimum purchase price, calculated to produce a yield in line with market conditions. The Bank of Italy was admitted to participate on an equal footing with other market agents and auctions were opened also to non-bank intermediaries.[29] The reform included a provision whereby the Bank of Italy, which previously had no obligation to intervene on the primary market, would act as a residual buyer at auctions of government securities.[30] The importance of this financing channel was enhanced by the fact that in the second part of the 1970s the

[27] In a discussion with Franco Modigliani in 1967 Governor Carli stated that "the primary objective is to promote a level of income that […] would permit a level of investment capable of closing the gap between Italy and the other members of the European Economic Community" while "account is taken of the objective of price stability" (Rey and Peluffo, 1995, pp. 54-57).
[28] The views held at the time would struggle to accord with modern perspectives on the dangers of "time-inconsistent" policies. In explaining the (temporary) accommodation of the inflationary episode in 1961-62, resulting from a strong wage push, Governor Carli claimed that it was not due to him being subject to government pressure, but rather to his objective of "allowing firms to pass on the cost increases to prices, preserving profit margins"(Carli, 1991, p. 268).
[29] Salvemini (1989).
[30] Fazio and Salvemini (1982). The measure was simply enacted by a directive of the interministerial credit committee (*Comitato Interministeriale per il Credito e Risparmio,* CICR) which approved the reform.

minimum purchase price at auctions was often set higher than market prices in order to limit borrowing costs.

The control of the monetary base required the Bank's continuous presence in the form of outright interventions on the secondary market for government securities, with a view to placing on the market the securities that were acquired at auctions. Outright operations in Treasury securities, which were almost non-existent in the 1950s and 1960s, therefore acquired prominence as the main tool of monetary policy to control the monetary base.

In this period, monetary policy made increasing recourse to direct credit controls. In 1973 credit ceilings were introduced, with the main objective to guarantee appropriate funds to small and medium enterprises; however, the objective soon became to control the overall amount of credit in the economy. Mandatory bond holdings for the banks (also first introduced in 1973) required credit institutions to purchase long term fixed rate bonds for an amount equal to a fraction of their deposits, with the objective to increase the availability of long term financing to firms (*de facto* favouring the purchases of government bonds). The effectiveness of these constraints was rapidly decreasing, due to circumvention; at the same time, distortions in the allocation of resources were caused.[31]

From the mid-1970s onwards, the Bank of Italy assigned increasing importance to the role of price stability in its objectives. Governor Baffi explicitly advocated the adoption of a price stability target;[32] the lack of a formally announced objective was considered a problem, since it was felt by the Governor that the absence of a clear mandate (and mostly, the lack of a clear consensus in society on it) could make it more difficult for the Bank to aggressively pursue this objective. At the same time, the potential for conflict between the respective objectives pursued by the fiscal and monetary authorities grew more concrete owing, on the one hand, to the effects of the two oil shocks on inflation and, on the other hand, to the strong growth in public debt. At the time the Bank's view was that this conflict was exacerbated by the existence of a "practically full wage indexation … [that] magnifies the inflationary effects"[33] and that was severely increasing inflation inertia. This indexation

[31] Croff and Passacantando (1979).
[32] Concluding Remarks, Annual Report on the year 1976; also see the discussion in Gaiotti and Rossi (2004).
[33] Concluding Remarks, Annual Report on the year 1978.

system was further strengthened in the early months of 1975 as a result of an agreement between the Italian employers' association and the trade unions.[34]

Inflation peaked in 1980, after the second oil shock, at above 20 percent (the only year, together with 1920 and 1947, in which average inflation exceeded this level in Italy in peacetime). In the last part of the 1970s and in the early-1980s the discount rate was repeatedly increased; the introduction of monetary targeting was however rejected, since "opposing more concentrated and inflexible processes of price determination by applying the monetary monopoly more rigorously, without the assent and confidence of those who operate in the economy, […] would lead to a diversion and waste of resources not unlike that which accompanies a price freeze".[35] Public debt reached 60 percent of GDP at the end of the 1970s (from around 40 percent at the beginning of the same decade).

The 1980s

In the 1980s there were major changes in the monetary regime. Governor Ciampi, in particular, called for a "change in the monetary constitution" based on three pillars deemed prerequisites for the return to monetary stability: "central bank autonomy, reinforcement of budgetary processes and a code for collective bargaining".[36]

Throughout the decade a series of major reforms were enacted to guarantee greater autonomy for the Bank of Italy both in its dealings with the Treasury and in operational terms. The most important one took place in 1981, the so-called "divorce" between the Bank and the Treasury, following which the Bank of Italy ceased being the residual buyer at primary market auctions of government securities, as it had been since 1975.[37]

The divorce was a milestone in the evolution of monetary policy. Net subscriptions of government securities by the Bank of Italy on the primary market peaked in 1981 and declined almost uninterruptedly in the following years. Yet, the Bank of Italy did not completely stop supporting the Treasury, even if formally not committed to do so, and the

[34] In Italy wage indexation was substantially attenuated in 1983, but not completely abolished until 1992. According to Passacantando (1996), this measure was an important determinant of the reduction of inflation observed in the following years.
[35] Concluding Remarks, Annual Report on the year 1978.
[36] Concluding Remarks, Annual Report on the year 1980.
[37] Salvemini (2009).

Treasury did not immediately abandon the practice of setting base rates. The minimum purchase prices at government securities auctions set by the Treasury were only eliminated after 1989; before that date, the Treasury continued to exert control over borrowing conditions by capping yields. The main reason why the Treasury was reluctant to abandon its grip on interest rates and the Bank was not willing to stop having any role at the auctions is that in the early 1980s financial markets (including the secondary market for government paper and the interbank market) were still highly imperfect and there were substantial risks that in absence of a reference point interest rates could become excessively volatile.[38]

While this gave rise to occasional conflicts between the Bank and the Treasury, it did not ultimately affect the central bank's ability to steer monetary conditions.

An episode at the end of 1982 illustrates the effects of the new regime: the Bank of Italy raised the rate on repos to avoid adverse effects on monetary base creation, but the Treasury did not adjust the maximum rate at auctions as sharply as suggested by the Bank. The Bank then refused to buy unsold government securities, allowing a subscription crisis to erupt. As a consequence, in the following year the Treasury abandoned the practice of controlling auction yields by setting the maximum rates at levels not consistent with market conditions and began instead to set them at non-binding levels.[39] Therefore, in subsequent episodes of monetary restriction the Bank succeeded in pressing the Treasury to adjust the base rates.[40] In addition, throughout this period outright secondary market operations were actively used to control monetary conditions, *de facto* sterilising any undesired creation of monetary base by the Treasury.[41]

In the second half of the 1980s the Bank of Italy's ability to pursue its objectives was enhanced by a series of crucial improvements in the government bond market (the introduction of competitive bid-auctions for Treasury bills, the introduction of a screen-based secondary market for government securities and the progressive abolition of floor

[38] Passacantando (1996).
[39] Passacantando (1996), pp. 90-91. The 1982 subscription crisis eventually required the Parliament to approve by law a one-off extraordinary advance by the Bank to the Treasury. According to Majnoni and Zautzik (1986), in the following years the setting of non-binding base prices at auction was seen as necessary by the Treasury to set aside funds to reimburse the advance.
[40] See Angeloni and Gaiotti (1990) on monetary restriction in mid-1988.
[41] According to Angeloni and Gaiotti (1990), after 1981 outright operations had the direct objective of sterilising the effect of operations on the primary market, while in the second half of the 1980s they were mostly used to affect secondary market interest rates and their term structure.

prices at Treasury bill auctions), in the interbank market (the introduction of a screen-based market for interbank deposits), in the set of its monetary instruments (the introduction of a competitive auction system in securities repurchase agreements between the Bank of Italy and commercial banks, improvements in reserve requirement) and by a reduction in the degree of wage protection from inflation.[42] These actions were accompanied by a progressive removal of administrative controls (credit ceilings and mandatory bond holdings) and foreign exchange rate restrictions.

The reforms that radically reshaped the secondary market for government bonds and created an efficient money market, strengthening the role of interbank rates both in the transmission of monetary policy and as reference for Treasury bills auctions, were particularly important. By spurring demand on the primary market, they created the conditions for the progressive elimination of floor prices at Treasury bill and longer-term bond auctions and for the *de facto* discontinuation of interventions by the Bank on the primary market, well before these were formally prohibited.

All these reforms were instrumental to the far-reaching shift in monetary strategy implemented in the early 1980s. Fine-tuning policies were explicitly abandoned, based on the "broad agreement that the uncertainties resulting from sudden and frequent course corrections [of monetary policy] and the time lags that occur before their effects are felt, can in fact increase the cyclical variability of the economy instead of reducing it". Monetary policy must be therefore "determined against a fairly long time scale".[43]

Precise intermediate targets were adopted for both exchange rates, with Italy's entry into the European Monetary System (EMS), and the M2 money supply.[44] Monetary policy was designed to maintain an adjustable parity, but M2 was an essential complementary objective, although interpreted as an information variable and pursued with a certain amount of flexibility in order to account for portfolio shifts and other forms of financial innovation.[45] According to Gaiotti and Rossi (2004), the EMS constraint was essential in giving institutional legitimacy to the Bank's action in absence of a specific statutory

[42] See Table A1 in the Appendix for details.
[43] Concluding Remarks, Annual Report on the year 1979.
[44] Italy joined the EMS in 1979. Monetary targets, in the form of ranges for the growth of M2, were first introduced in 1984.
[45] For a discussion on how these objectives were derived and of their role in the policy set-up, see Altissimo, Gaiotti and Locarno (2000).

objective for inflation: they argue that, thanks in part to the symbolic value it had for politicians, employers and the unions as the necessary condition for participation in European integration, it allowed the Bank of Italy to pursue its disinflation objective.

The level of real interest rates, which was negative at the end of the 1970s, rose and became steadily and largely positive from 1981 onwards;[46] the Bank thus joined the effort by the central banks of advanced countries in "taking on inflation", made explicit in the US by chairman Volcker in 1979.[47] Between 1980 and 1987 inflation fell from 21% to less than 5%.

As mentioned, however, for public finance developments the effects of these major changes in the monetary regime, including the "divorce" between the Bank of Italy and the Treasury, were not satisfactory. Public deficits kept increasing, touching a peak of 12.3 percent of GDP in 1985 and still being close to that level in 1991. The debt to GDP ratio kept constantly rising, from 58 percent in 1981, to 80 percent in 1985, to 121 percent in 1994. All in all, consolidation efforts put in place during the second half of the 1980s lacked determination and had limited effects.[48]

The 1990s

In the 1990s the reforms continued. In 1993 the Maastricht Treaty was ratified, abolishing all residual forms of direct financing of the Treasury in the signatory countries. The Treasury overdraft with the Bank of Italy was abolished and purchases of government securities on the primary market by the Bank were forbidden; at that point, however, the Bank's interventions on the primary market had already all but ceased.

In 1992 the power to modify the discount rate was assigned to the Bank of Italy. Before then, it formally belonged to the Treasury, which, however, was acting on a proposal by the Bank. The innovation was partly a formality, since the Bank already controlled the interest rates that were relevant for monetary transmission (the repo rate, the marginal rate on advances); but it marked the passage from *de facto* to *de jure* independence.[49]

[46] Gaiotti and Rossi (2004).
[47] Ciocca and Nardozzi (1993).
[48] Balassone, Franco, Momigliano and Monacelli (2002).
[49] Passacantando (1996).

In 1992 the Italian lira had to abandon the exchange rate mechanism of the EMS. The strategy of monetary policy had to be redesigned. It was urgent to contrast the risk of a self-fulfilling spiral between exchange rate devaluation and inflation; doubts on the sustainability of public debt and exchange rate risk pushed up the spreads between the yields of 10-year Italian and German government securities, which reached 6.5 percent in early 1995. The Bank's objectives began to include direct reference to inflation: from 1994 onwards Governor Fazio announced the reference values for inflation to which the management of official rates would be linked, and implemented a decisive monetary restriction to meet those objectives.

Starting from 1993, the effectiveness of these decisions was supported by the labour market agreement that removed all forms of indexation and introduced the predetermination of wage increases based on the inflation objective. Fiscal policy eventually followed. Public finances consolidation brought down the public deficit from 10 percent of GDP in 1993 to 2.7 percent in 1998 and put the debt back on a sustainable path. The consolidation process was supported by EMU fiscal rules and by the prospects of joining the monetary union. Inflation fell further and reached 1.8 percent in 1998.

5. The econometric evidence

A selection of the main empirical findings is summarized in Table 1.

The approach generally adopted in the literature for assessing the fiscal dominance hypothesis is to verify the existence of a causal link between budget deficits and developments in the monetary base, the money supply and, ultimately, prices. This is the idea behind the formal test of fiscal dominance proposed by Fratianni and Spinelli (2001). The essential element of their test is that there must be a positive correlation between the budget deficit and the Treasury component of the monetary base, and that this correlation must proceed from the former to the latter and not vice versa. To this end they estimate a bivariate VAR which includes the deficit (DEF) and the component of monetary base creation associated with the Treasury (BMTES[50]) on the sample 1865-1998 and use a Granger causality test to conclude that the lagged values of DEF are a significant element

[50] BMTES is defined in their paper as the sum of direct Treasury financing and net outright purchases of the Bank of Italy on the secondary market.

in the BMTES equation.[51] By contrast, the lagged values of BMTES do not help explain the current behaviour of DEF.

Table 1: A selection of empirical research

	Approach	*Finding*	*Conclusion*
Fratianni-Spinelli (2001)	VAR	Over 1865-1998 the budget deficit leads the creation of monetary base by the Treasury.	Fiscal dominance
Favero-Spinelli (1999)	structural model	Structural break in 1975: the effect of the budget deficit on money supply disappears	No evidence of fiscal dominance after 1975
Tullio-Ronci (1997)	reaction function estimate	The effect of the budget deficit on money growth drops in 1977	No evidence of fiscal dominance after 1977
Gallo-Otranto (1998)	Markov switching approach	Structural break in the relationship between deficits and money around the mid-1970s	Fiscal dominance ends in mid-1970s
Gaiotti-Salvemini (1993)	simulations of the monthly model of the Bank of Italy	Until 1989, a shock to the budget deficit is found to have only a mild and short-lived effect on money and monetary base. After 1989, the effect is nil.	No fiscal dominance in 1980s-1990s
Gressani-Guiso-Visco (1988)	simulation of the quarterly model of the Bank of Italy	The domestic component of inflation (mostly monetary policy) explains the bulk of the disinflation in 1980-86.	1980-1986: no fiscal dominance. Monetary policy effective
Grilli-Masciandaro-Tabellini (1991)	measures central bank independence and debt sustainability	Italy in the 1980s is found to have a fairly independent central bank but still an unsustainable fiscal policy	Higher rates did not prevent fiscal irresponsibility in the 1980s
Micossi-Papi (1994)	equations for wages, prices	Public sector variables affect wages and prices	Fiscal irresponsibility affected services inflation in 1987-1991
Gaiotti-Gavosto-Grande (1998)	VAR	In the 1990s, changes in expectations on the sustainability of public debt are not found to have had an effect on inflation; monetary policy shocks affected inflation expectations	1990s: no fiscal dominance. Monetary policy effective.

[51] This result holds for the whole sample, for the sample excluding the war periods, and also for the sample excluding the period of convergence towards the euro (1992-98).

Favero and Spinelli (1999) go one step further and obtain slightly different results. They extend the analysis to a structural model and test the overall transmission of shocks to the budget deficit on the growth of the money supply (M2). They find that fiscal dominance ended in 1975. They test the year 1975 as a structural break since, in their view, from that year onwards (when Paolo Baffi became Governor of the Bank of Italy) there was an increasing awareness of the problem of granting independence of monetary policy from fiscal policy, and the reform process of the monetary framework was launched. The results of their analysis suggest that a link does exist from 1875 to 1975 between the dynamics of budget deficit and those of money supply. On the contrary, this relationship disappears when the sample is restricted to the period between 1975 and 1994.[52]

Evidence of a structural break after the mid-1970s is confirmed by Tullio and Ronci (1997). They find strong support for the "fiscal dominance hypothesis" only up to the end of 1977. They obtain this result by estimating a general version of the reaction function of the Bank of Italy using quarterly data over the sample 1970-92 and observing a significant drop in the effect of the lagged values of the budget deficit on current money growth after 1977. Also in their view this break is associated with the appointment of Baffi as the Governor of the Bank of Italy.

The hypothesis of a limited and declining role for fiscal dominance in determining monetary developments in the course of the 1980s and early 1990s is confirmed by Gaiotti and Salvemini (1993). They simulate two different versions of the Bank of Italy's monthly model of the money market (Angeloni, 1988; Gaiotti, 1992), which reflect the evolution of the institutional characteristics of the monetary framework and assess the response of money and the monetary base to an exogenous increase in the budget deficit, respectively in the first half of the 1980s and at the beginning of the 1990s.

They find that in the early 1980s the impact of a shock to the budget deficit on the creation of monetary base by the Treasury, while still positive, was short-lived: about 20 per cent of the initial shock was transmitted to the creation of monetary base by the Treasury after one month, before being rapidly reabsorbed in the following months as full sterilisation got underway; an increase of 1 percentage point in the budget deficit to GDP ratio also temporarily affected M2, by about 0.4 percentage points, but the effect was

[52] Moreover, their results suggest the importance of supply factors, such as the two oil shocks, in determining the evolution of prices.

similarly entirely reabsorbed within a few months.[53] The effect of public deficit shocks on monetary base creation by the Treasury had instead completely disappeared by the end of the decade, as shown by simulations of the later version of the model, incorporating the additional improvements in monetary control owing to the removal of restrictions on the floor price at auctions of Treasury bills and bonds and, consequently, the virtual cessation of primary market activity by the Bank and of unexpected recourse to the overdraft facility.

In contrast, the conjecture that greater central bank autonomy would reduce fiscal irresponsibility was disproved by the facts. The idea was that, without monetary accommodation, higher deficits would have led to higher interest rates and that the fiscal authority would have necessarily taken this constraint into consideration when adopting its decisions. However, the assumption of far-sighted fiscal authorities turned out to be flawed. In general, the international evidence on this hypothesis is not conclusive: Parkin (1986) analyzes a series of advanced countries over the period 1955-1986 and concludes that the relationship between central bank independence and deficits is not precise. In Italy, the hypothesis is utterly rejected. Grilli, Masciandaro and Tabellini (1991) show that in the 1980s seigniorage decreased, while deficits grew larger; they also find that, based on indicators of central bank independence and debt sustainability, Italy in the 1980s belonged to the group of countries with fairly independent central banks but still unsustainable debt policies. Giovannini and Spaventa (1991) also conclude that higher interest rates did not discourage governments from running high deficits and accumulate excessive levels of debt, highlighting a possibly perverse effect of capital movement liberalisation on fiscal discipline.[54]

The existing evidence suggests that monetary policy drove the disinflation process in Italy. A quantitative analysis of the determinants of the disinflation process between 1980 and 1986 is presented by Gressani, Guiso and Visco (1988). Using the quarterly model of Banca d'Italia, they present simulation exercises aiming in the first place at identifying the contribution of international variables (oil prices and the exchange rate of the dollar) to inflation, in order to disentangle its domestic and imported components. Then, they evaluate the effects of the policies adopted in that period (regulated prices, exchange rate policy and interest rate policy) on the internal component. They show that

[53] This is also consistent with the anecdotal evidence presented by Majnoni and Zautzik (1986) of a short-run correlation between the Treasury overdraft facility and money over the same period.
[54] See the discussion in Passacantando (1996).

the process of disinflation was made possible by the continuous decline in the domestic factors rather than by diminishing foreign impulses; monetary policy (including both exchange rate and interest rate management) played a decisive role in curbing inflation (a policy of "precommittment" to target inflation rates announced by the government also prevented the rise of autonomous impulses to the inflation process).

However, Micossi and Papi (1994) present evidence on a persistent effect of public finance on prices by estimating equations for wages, labour costs and prices; they show that the inclusion of public sector variables among the regressors improves the explanatory power of the equations; in particular, they conclude that public expenditure can largely account for the rekindling of inflation in 1987-1991 (notably for services, whose inflation rate was above the average for the whole economy).

In the first half of the 1990s it was argued that, even under a restrictive monetary policy, a worsening of expectations about the sustainability of the public debt would immediately affect the exchange rate and the devaluation would be transmitted to prices, disanchoring the economy. In this context, however, the fiscal dominance hypothesis was tested and rejected by Gaiotti, Gavosto and Grande (1998). By estimating a VAR and by means of a historical decomposition, they found that in the 1990s the main determinants of inflation dynamics were the evolution of inflation expectations, demand and the two episodes of exchange rate depreciation (and the subsequent appreciation). By contrast, changes in expectations regarding the sustainability of the public debt (measured by the default premia on 10-year BTPs) were not found to have had a significant impact on inflation; their effect on the exchange rate was effectively countered by monetary policy, largely via its impact on inflation expectations, thus rejecting the assumption of fiscal dominance. They conclude that the emphasis put at the time by some observers on the fiscal constraints on monetary policy effectiveness was excessive: a resolutely anti-inflationary monetary policy was effective in curbing inflation.

6. Public deficits, monetary base creation and policy objectives: stylized facts

The conclusions of the empirical literature are consistent with the stylized facts on public deficits, monetary creation and the attainment of monetary objectives.

Table 2 provides a brief overview of the scale of monetary base creation through the various channels: the foreign channel (first column), the direct creation through the Treasury channel (second column), monetary policy interventions (the policy channel, third column), other factors (fourth column).[55] Three observations stand out.

First, throughout the 1970s and 1980s most monetary base creation was associated with the Treasury channel. In particular, in 1980-81 the overall share of liquidity creation through this channel peaked at about 5 times the total flow of the monetary base. However, it rapidly declined after the "divorce".

Second, the Bank of Italy intervened heavily with sales on the secondary market and with refinancing operations (both included in the "policy" channel) to counter the excessive growth in liquidity, fully or partially offsetting monetary base creation by the Treasury. After 1975 outright secondary market operations were used to regulate the monetary base and sterilise the effects of the Treasury channel and were therefore primarily aimed at destroying liquidity.

Finally, in the early 1990s monetary base creation by the Treasury turned negative. Following the additional market reforms described in the previous sections, the Treasury's funding needs were easily satisfied on the market; its recourse to the overdraft facility and Bank of Italy's interventions on the primary market all but ceased; the Treasury destroyed liquidity in an amount equal to the securities in the portfolio of the Bank of Italy coming to maturity.

[55] Consistent with the definition adopted by the Bank of Italy since 1990 (see Rinaldi, 1992, p.12), we define creation through the Treasury channel as net purchases on the primary market by the Bank of Italy (gross purchases at auction, less securities redemptions) plus recourse by the Treasury to the overdraft facility with the Bank of Italy, plus minor items; we define monetary policy intervention as the sum of open market purchases (outright and repo, with repos acquiring quantitative relevance only since the late 1980s), and refinancing operations.

Table 2: Monetary base creation channels and monetary policy interventions

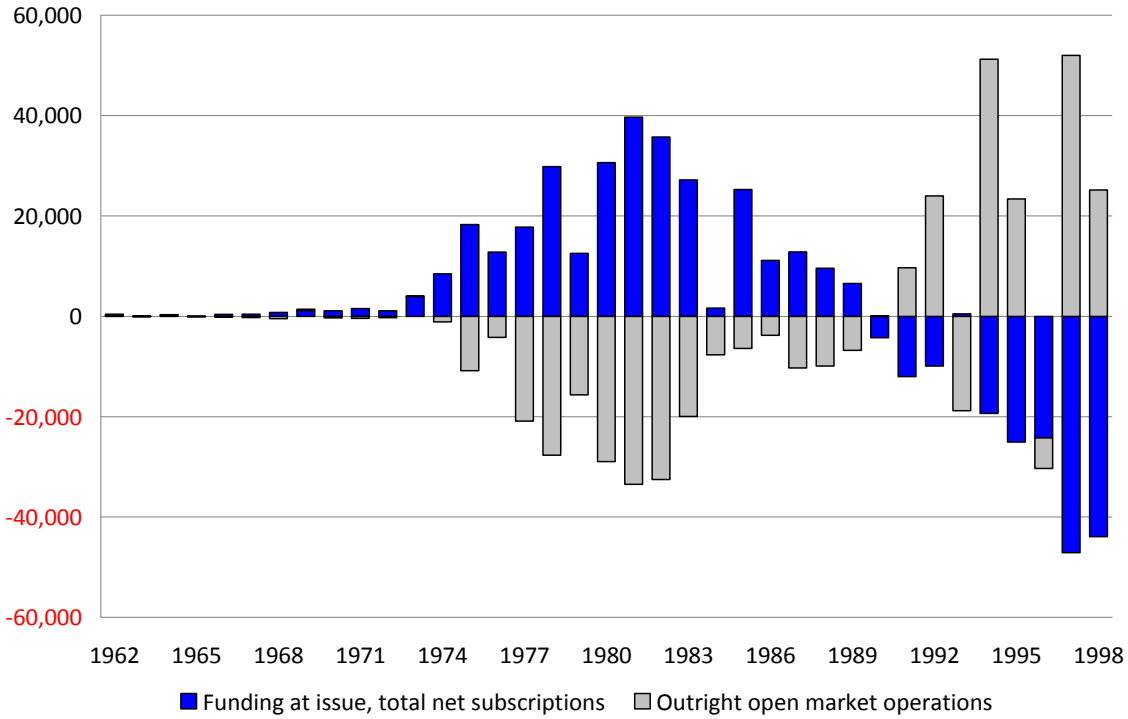
(values expressed as a percentage of the absolute value of the total change in the monetary base)

	Foreign Sector (1)	Treasury (2)	Monetary policy (3)	Other sectors	Total	Memo: change in monetary base, bn lire
1963	-233.2	164.8	168.4	0.0	100.0	307.9
1964	46.2	67.1	-16.2	2.9	100.0	635.4
1965	71.3	67.2	-36.5	-2.0	100.0	879.8
1966	29.8	26.0	11.9	32.3	100.0	786.5
1967	36.1	25.3	47.6	-9.1	100.0	672.1
1968	17.5	125.5	-29.0	-14.0	100.0	875.9
1969	-82.4	104.5	85.7	-7.7	100.0	785.8
1970	19.1	158.7	-63.9	-13.8	100.0	1,674.4
1971	19.1	84.6	-19.5	15.8	100.0	2,193.2
1972	-17.9	134.6	29.8	-46.5	100.0	2,046.4
1973	-8.0	165.0	7.6	-64.6	100.0	3,346.8
1974	-96.4	284.3	-22.8	-65.0	100.0	3,216.6
1975	-41.0	355.0	-240.7	26.7	100.0	4,145.6
1976	22.3	273.7	-114.8	-81.2	100.0	4,962.6
1977	83.8	258.3	-323.6	81.5	100.0	6,389.8
1978	59.4	329.2	-278.8	-9.8	100.0	9,863.6
1979	39.2	229.1	-177.6	9.4	100.0	6,941.1
1980	9.0	520.4	-429.3	0.0	100.0	7,859.0
1981	0.3	537.6	-371.5	-66.4	100.0	8,640.2
1982	-54.6	432.3	-303.5	25.8	100.0	10,335.7
1983	70.1	207.3	-171.5	-5.9	100.0	12,603.7
1984	37.1	108.6	-37.8	-8.0	100.0	13,846.0
1985	-71.7	152.0	23.1	-3.4	100.0	19,075.7
1986	38.5	139.3	-66.9	-10.9	100.0	9,199.3
1987	48.4	166.2	-105.6	-9.0	100.0	13,946.5
1988	83.9	102.3	-80.6	-5.6	100.0	13,046.1
1989	73.1	41.2	-4.5	-9.9	100.0	20,485.8
1990	112.3	-10.0	26.5	-28.8	100.0	13,764.5
1991	-78.4	-85.4	269.6	-5.9	100.0	11,071.0
1992	-387.0	-32.0	509.2	9.8	100.0	8,421.9
1993	13.2	-17.3	-105.4	9.6	-100.0	-19,478.6
1994	33.3	-552.3	481.1	-62.1	-100.0	-9,911.4
1995	24.4	-279.7	170.3	-15.0	-100.0	-11,928.1
1996	492.5	-155.7	15.5	-252.3	100.0	4,151.6
1997	169.1	-366.8	248.8	49.0	100.0	13,503.2
1998	-65.7	-47.7	-1.1	14.5	-100.0	-56,362.0

Notes: (1) Official interventions on the foreign exchange market and other currency transactions by the Bank of Italy and the *Ufficio italiano dei cambi*. (2) Net purchases on the primary market by the Bank of Italy plus recourse by the Treasury to the overdraft facility with the Bank of Italy plus minor items; (3) Open market (outright and repo) and refinancing operations. For a detailed discussion of the definition of the channels of monetary base creation, see Rinaldi (1992).

Figure 1: Securities purchases on the primary market and outright open market operations

(billions of lire)



Total subscriptions on the primary market for Treasury securities by the Bank of Italy, net of redemptions. Outright open market operations in Treasury securities by the Bank of Italy.

Figure 1 compares the amount of securities purchases on the primary market, net of redemptions, by the Bank of Italy (the main component of the "Treasury" channel) and the net outright purchases of government securities on the secondary market (the main component of the "policy" channel). The figure confirms that the Bank of Italy's purchases of government securities on the primary market progressively increased during the 1970s, peaked in 1981, then rapidly diminished after the "divorce", though remaining positive for the rest of the decade. In the second part of the 1970s and in the 1980s the impact of these purchases on liquidity was symmetrically sterilised by open market sales by the Bank of Italy, at first with the direct aim to control the monetary base, then indirectly, as a consequence of the objective to control interest rates.

Eventually, the strengthening of financial markets that spurred demand at auction and the removal of floor prices set by the Treasury created the conditions for the Bank to all but stop intervening on the primary market. In the 1990s, as gross purchases on the

primary market fell to nil, the Treasury channel destroyed liquidity in an amount equal to the securities maturing in the Bank of Italy's portfolio; by contrast, open market operations created liquidity for purposes of monetary control.

Table 3 shows that since the early 1980s monetary policy targets consistent with the disinflation process were largely, if not constantly, met. The first column reports the objectives for M2 growth, initially set in terms of ranges, then, since 1995, as point values. The Bank began announcing monetary targets in 1984, when the demand for money became relatively stable. As mentioned, the M2 objective was pursued with flexibility; nonetheless, the targeting was broadly successful in providing a nominal anchor, as can be seen from the second column of the table, which reports the actual realisations of money growth.[56] M2 growth either remained within the target range or deviated only slightly.

Table 3: Monetary growth targets and inflation

	M2		Inflation	
	Target (1)	**Actual**	**Target**	**Actual** (3)
1980	**n.a.**		***14-15****(2)*	**21.1**
1981	**n.a.**		***18.0****(2)*	**18.7**
1982	**n.a.**		***16.0****(2)*	**16.3**
1983	**n.a.**		***13.0****(2)*	**15.0**
1984	**11**	**12.3**	***10.0*** *(2)*	**10.6**
1985	**10**	**11.1**	***7.0*** *(2)*	**8.6**
1986	**7-11**	**9.6**	***6.0*** *(2)*	**6.1**
1987	**6-9**	**8.6**	***4.0*** *(2)*	**4.6**
1988	**6-9**	**8.9**	***4.5*** *(2)*	**5.0**
1989	**6-9**	**9.5**	***4.0*** *(2)*	**6.6**
1990	**6-9**	**9.9**	***4.5*** *(2)*	**6.1**
1991	**5-8**	**9.0**	***5.0*** *(2)*	**6.4**
1992	**5-7**	**6.0**	***4.5*** *(2)*	**5.4**
1993	**5-7**	**7.9**	***4.5*** *(2)*	**4.2**
1994	**5-7**	**1.9**	***3.5*** *(2)*	**3.9**
1995	**5**	**1.9**	***4.2*** *(2)*	**5.4**
1996	**5**	**2.6**	**<4** (4)	**3.9**
1997	**5** (5)	**9.7** (5)	**<3** (4)	**1.7**
1998	**5** (5)	**5.8** (5)	**<2** (4)	**1.8**

Source: 1984 to 1993, Visco (1995). From 1994 to 1998, Banca d'Italia, Annual Report, various issues. Notes: (1) Target refers to annual growth measured on end-December data until 1989, on December average for 1990 and 1991, and on last-quarter average from 1992; (2) "Tasso di inflazione programmato" indicated as the official government target in the Economic and Financial Planning Document. The target for year *t* was determined by the government in September of year *t-1*; (3) Cost of living, national index of consumer prices for blue and white-collar worker households, annual growth rate measured in December; (4) Inflation objective (upper limit) announced by the Governor of the Bank of Italy in the previous year's Annual Report. See Altissimo, Gaiotti and Locarno (2000). (5) M2 net of CDs.

[56] The figures reported in the table are those appearing in various issues of the Annual Report of the Bank of Italy. In each year, the specific M2 definition consistent with how the target was formulated is used.

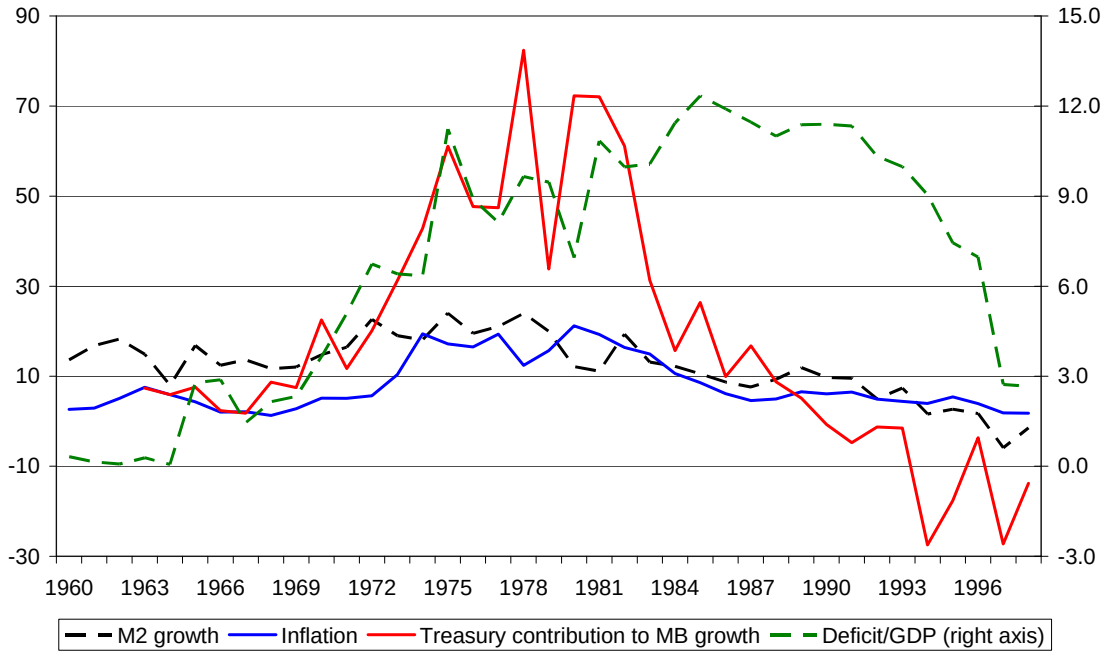
The third and fourth columns compare inflation "objectives" with actual inflation. Before 1995 monetary policy made no reference to direct inflation targets. The reported inflation objectives, between 1980 and 1995, are those set by the government for use in the economic policy-making process; the Bank of Italy did not participate in their definition, but took them into account for defining monetary targets, although it did so along with other information and with some flexibility in the form of ranges. As discussed in detail by Visco (1995), they typically overshot the target, but the actual inflation rate between 1981 and 1987 nonetheless followed the target down, with short lags and yearly errors of between 0 and 2 percentage points, consistent with a steady process of disinflation. This process continued into the 1990s, but with a temporary slowdown between 1989 and 1991.

Starting from 1995, Governor Fazio announced upper limits for inflation in the following year; these are reported in the bottom part of the table. They were systematically met, with annual inflation eventually reaching 1.8 per cent in 1997.

Lastly, Figure 2 compares the actual dynamics of money growth and inflation over the whole period with the behaviour of the public deficit and the contribution of the Treasury channel to total monetary base creation. The ratio of the public deficit to GDP started increasing in the early 1970s, reached its highest level in the course of the 1980s and started declining only in the 1990s. There is no apparent change in its dynamics in the first part of the 1980s, confirming that central bank autonomy did not prevent fiscal irresponsibility. However, the chart also confirms that the deficit decoupled from monetary base creation through the "Treasury" channel (as early as 1981, at the same time as the "divorce") and, even more apparently, from the growth of money and inflation. Since the early 1980s, monetary growth and inflation were at much lower levels than the (sterilised and progressively declining) contribution of the Treasury channel to monetary base creation. The public deficit eventually decreased to below 3% only in the last part of the 1990s.

Figure 2: Money, inflation, the public deficit and Treasury financing in Italy

(percentage points)



M2: growth rates based on end-December data. It includes all certificates of deposits (as in the pre-1997 definition). Inflation: cost of living, annual average. Contribution of the Treasury channel to growth in the monetary base: the flow of monetary base creation by the Treasury in year t, divided by the stock of monetary base in year t-1.

7. Conclusions

The review of the interpretations, the institutional evolution and the empirical evidence presented in this note suggests a number of conclusions.

First, the historical evidence indicates that in Italy in the early 1970s a significant correlation existed between budget deficits, Treasury financing and monetary base creation. This circumstance meets the formal definition of fiscal dominance. However, accounts of the institutional evolution of economic policy and policy narratives suggest that inflation was arguably not a causal consequence of direct monetary financing of the Treasury, but instead largely a reflection of the lack of an explicit assignment of inflation and monetary targets to the central bank, compared with the very considerable weight given to policies of economic fine-tuning, during a period of large external shocks and deep social unrest. Existing narratives suggest that these concerns played a crucial part in the decisions taken by the Bank at the time; this view is supported by a series of empirical studies which indicate that the correlation between Treasury financing and monetary base creation started

weakening from the mid-1970s, well before inflation reached its peak. Looking forward, these findings confirm how important it is for the actions of central banks to remain focused on a medium-term perspective.

Second, institutional evolution, econometric studies and the inspection of monetary base dynamics all suggest that a change of the monetary regime took place in the 1980s and 1990s, when the correlation between public deficits, financing of the Treasury and total money creation completely disappeared. After 1981 the Treasury's monetary base creation shrank and was systematically sterilized, although the deficits remained large. Real rates rose to unprecedented levels. In this period, monetary policy objectives were broadly achieved and inflation eventually converged to just below 2%.

Two elements played a crucial role in this evolution of the "monetary regime". The first has to do with the central bank's objectives: coherently with the change of attitude in all advanced countries around the turn of the 1970s, the formulation of precise intermediate targets (the exchange rate in 1979, money growth since 1984, inflation directly since 1996) gave institutional legitimacy to the Bank's action, even without a formal statutory objective for inflation. The second element, a necessary condition for the first, was ensuring the central bank's operational autonomy and control of interest rates, with the elimination of the obligation to intervene as residual buyer on the primary market for government debt. These observations confirm that an effective monetary policy, one that can resist inflationary pressures and stabilize inflation at low levels, requires an independent central bank with a clear mandate.

Third, once those two elements had been established, monetary policy was effective in the disinflation process, even though some operational constraints remained in place (a floor price at government securities auctions set by the Treasury and the Treasury's overdraft facility, which were not removed until the end of the 1980s or early 1990s). The residual presence of these constraints was undesirable and sparked tensions between the Treasury and the Bank, producing short-run volatility in liquidity conditions, but the Bank's views ultimately prevailed in rate setting and liquidity management. A variety of operational tools were used (repos and outright open market operations were both instruments of monetary management during the disinflation process; discretionary interventions on the primary market also remained possible until 1993, being formally prohibited only when

disinflation had already mostly taken place). This observation confirms that when assessing the degree of fiscal dominance the focus should be on the central bank's motivations rather than on specific actions only, a conclusion that remains valid in today's perspective. Provided that the conditions in which monetary injections occur are decided independently, the channels through which they take place are of less importance.

Fourth, an independent monetary policy was not sufficient to induce fiscal responsibility; the threat of higher interest rates was not enough to constrain the decisions of the fiscal authority. Those who claimed that less monetary accommodation would create the proper incentives for fiscal adjustment were disappointed. In the 1980s the fiscal authorities' reluctance to implement their own "change of regime" had dramatic consequences on public debt dynamics, setting fiscal policy on an unsustainable path, which was corrected only in the 1990s. The persistent imbalances in public finance were in turn a hindrance to the conduct of monetary policy, created upward pressures on prices, increased the costs of defending price stability, and introduced distortions in the Italian economy. The consolidation process only accelerated after 1992: EMU fiscal rules and the prospects of joining monetary union played a major role. Both the existing econometric evidence and the stylized facts suggest that fiscal developments have not "driven" monetary policy, at least since the 1980s. However, the argument that monetary policy action needed to be supplemented by a clear and robust fiscal framework, although long ignored at the time by fiscal authorities, proved to be sound.

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Appendix

Table A1: Timeline of the main institutional events in Italy from the 1970s to the 1990s

Date	
1946	*Monetary policy objectives.* Italy enters the Bretton Woods System of fixed exchange rates.
1948	*Treasury financing.* Overdraft facility enabling the government to obtain funds from the Bank of Italy up to a limit of 14% of current and capital expenditure for each fiscal year (all constraints were virtually lifted during the Fascist years). Until the end of the 1960s, the Treasury's small borrowing requirement was funded almost entirely on the market, mostly via the issuance of medium- and long-term securities and to some extent via postal savings.
1962	*Treasury financing.* The issuance of T-bills via an auction system is introduced.
1969	*Treasury financing.* The Bank of Italy is empowered (not obliged) to subscribe the unsold amounts of securities on the primary market and resell them on the secondary market.
1971	*Monetary policy objectives.* Crisis of the Bretton Woods System.
1973	*Monetary policy instruments.* First imposition of selective limits on credit growth (according to firm size). The main objective of this measure is to guarantee appropriate funds to small and medium enterprises. The measure will be used intermittently but repeatedly throughout the following decade. *Monetary policy instruments.* Mandatory bond holdings: banks are required to purchase long-term fixed-rate bonds for an amount equal to a fraction of their deposits. The main objective of this measure is to increase the availability of long-term financing to firms.
1974	*Monetary policy instruments.* Credit growth limits are renewed. The main objective of these measures becomes to control the overall amount of credit in the economy. *Monetary policy objectives.* Total domestic credit (domestic credit to the private sector plus the government borrowing requirement) becomes an intermediate target of monetary policy.
1975	*Treasury financing.* Reform of Treasury bill auctions: the Bank of Italy is allowed to participate on an equal footing with other market agents; auctions are opened to non-bank intermediaries; under a directive issued by the Interministerial Committee for Credit and Saving, the Bank is committed to act as residual buyer for unsubscribed bills; the Treasury fixes a floor price for each auction. *Monetary policy instruments.* Reform of reserve requirements: requirements become homogenous across banks. The marginal coefficient is set at 15%. *Labour market.* Agreement between the social partners ("Agnelli-Lama" agreement) increasing the degree of wage indexation: introduction of fixed-amount quarterly

	increases based on the cost-of-living index, uniform for all categories of workers ("punto unico"). Before 1975 indexation differed according to qualification.
1976	*Foreign exchange controls.* Exchange control violations become a criminal offence.[57]
1978	*Monetary policy instruments.* Mandatory bond holdings: the requirement for banks to purchase long-term fixed-rate bonds is eased considerably. During the 1980s the requirement is progressively lifted.
1979	*Monetary policy instruments*. Introduction of securities repurchase agreements with commercial banks as an instrument of liquidity management. *Monetary policy objectives.* Introduction of the European Monetary System: the Italian lira joins the Exchange Rate Mechanism (ERM) with a broad band (±6%).
1980	*Labour market.* Car manufacturer Fiat enters into a confrontation with the unions, which ends successfully after a 35-day strike ("march of 30,000" white collar workers).
1981	*Treasury financing.* The "divorce": following an exchange of letters between Treasury Minister Andreatta and Governor Ciampi, the Bank of Italy ceases to act as residual buyer at Treasury bill auctions. *Monetary policy instruments.* Introduction of a competitive auction system in securities repurchase agreements between the Bank of Italy and commercial banks. *Foreign exchange controls.* Rationalization of exchange regulations concerning financial transactions. Decriminalization of minor exchange violations.
1982	*Treasury financing.* In late 1982 the government does not adjust the maximum rate at auctions to market conditions as suggested by the Bank of Italy. The Bank of Italy refuses to buy unsold government securities. A subscription crisis erupts. *Monetary policy instruments.* Reform of reserve requirements: the ratio is set at 22.5% of the increase in deposits (20% of the decrease); the compulsory deposit with the Bank of Italy may not exceed 22.5% of total outstanding deposits. Remuneration differs by category of deposits.
1983	*Treasury financing.* Parliament approves a 12-month extraordinary advance by the Bank of Italy to the Treasury. The Treasury abandons the practice of setting maximum rates not consistent with market conditions. *Treasury financing.* Introduction of competitive bid-auctions for 3-month Treasury bills. *Monetary policy instruments.* Ceilings on banks' loans expire and are not reintroduced. They will be used again twice, though only briefly, in the second half of the 1980s to counter tensions in the foreign exchange markets.

[57] For a detailed description of the main foreign exchange controls from the early 1970s to the early 1990s, see Micossi and Rossi (1989), Cotula and Rossi (1989) and Passacantando (1996).

	Monetary policy objectives. Objectives for M2 growth announced for the first time. *Labour market.* Revision of the wage indexation mechanism. Reduction of the degree of protection from inflation, ceilings on monthly increases for civil service employees for the years 1983-85.
1984	*Treasury financing.* Introduction of competitive bid-auctions for 6-month Treasury bills. *Labour market.* Government decree implying (ex post) a 4 percentage point cut in the indexation allowance: wage increases for the first half of 1984 are based on the planned rate of inflation.
1986	*Monetary policy instruments.* Mandatory bond holdings are completely abolished. *Labour market.* New wage indexation system, reducing the degree of indexation (6-monthly adjustment (May-November); 100% coverage of an initial band of 580,000 lire for all workers; 25% coverage for the rest). The private sector applies the system already introduced for civil service employees in 1985. *Foreign exchange controls.* The government is mandated to reform the exchange control system on the basis that all external commercial and financial transactions are allowed unless explicitly prohibited.
1988	*Treasury financing.* Abolition of the floor price at 3-month Treasury bill auctions. *Treasury financing.* Introduction of competitive bid-auctions for 12-month Treasury bills; introduction of uniform price auctions for Treasury bonds (BTPs); first issue of 5- and 7-year Treasury credit certificates (CCTs). *Treasury financing.* Introduction of a screen-based secondary market for government securities. *Foreign exchange controls.* New "exchange control law" laying down the principle of freedom but retaining some restrictions (e.g. on short-term capital movements for non-bank residents).
1989	*Treasury financing.* Abolition of the floor price at 6- and 12-month Treasury bill auctions; admission of Treasury bills to the screen-based market.
1990	*Treasury financing.* First issue of 7-year Treasury bonds (BTPs); introduction of uniform price auctions for Treasury credit certificates (CCTs). *Monetary policy instruments.* Reserve averaging provisions introduced. Banks are allowed to use part of their compulsory reserves, provided the average monthly stock is maintained at the required level. *Monetary policy objectives.* European Monetary System: the Italian lira adopts the narrow band (±2.25%).

	Money market. Launching of the screen-based market for interbank deposits (MID). *Labour market.* Industry and unions begin an overall revision of the regulations governing labour costs, wage bargaining and indexation. *Foreign exchange controls.* Completion of capital movement liberalization and abolition of all remaining restrictions.
1991	*Treasury financing.* Introduction of 10-year Treasury bonds (BTPs). *Monetary policy instruments.* Reform of fixed-term advances. The penalty rate on this marginal refinancing facility is set by the Governor of the Bank of Italy according to monetary conditions. *Labour market.* Preliminary agreement between employers and unions and formal acceptance of the expiry of the existing wage indexation system.
1992	*Treasury financing.* Abolition of the floor price at auctions of medium- and long-term BTPs and CCTs. *Monetary policy instruments.* The Governor of the Bank of Italy is empowered to set the discount rate. Before then, the power formally resided with the Treasury, although acting on a proposal by the Bank. *Monetary policy instruments.* The Bank of Italy introduces foreign currency swaps with banks as a new instrument to regulate liquidity. *Monetary policy objectives.* European Monetary System: on 17 September the Italian lira suspends its participation in the ERM.
1993	*Treasury financing.* Suppression of the Treasury overdraft facility. Creation of a Treasury deposit with the Bank of Italy to meet day-to-day liquidity needs. Purchases on the primary market by the Bank of Italy are prohibited. *Treasury financing.* First issue of 30-year Treasury bonds. *Monetary policy instruments.* The Governor of the Bank of Italy is empowered to regulate the reserve requirement (previously the preserve of the Treasury, acting on a proposal by the Bank). *Labour market.* Agreement between business, labour organizations and the government. Wage indexation is abolished. Nation-wide contracts determine increases in nominal wages consistent with government inflation targets. Two-level bargaining: national industry-wide agreements setting contractual minimum wages and decentralized (local or company-level) supplementary contracts.
1994	*Monetary policy instruments.* Reform of reserve requirements. The marginal reserve ratio is set at 15%.
1995	*Monetary policy objectives.* In May, the Governor of the Bank of Italy announces for the first time, in his "Concluding Remarks" to the Annual Report, upper limits for

	consumer inflation to which the management of official rates will be linked.
1996	*Monetary policy objectives:* European Monetary System: the Italian lira rejoins the ERM (with the band ±15%).
1999	EMU comes into effect.

Sources: Cotula and Rossi (1989), Passacantando (1996) and Fratianni and Spinelli (2001).

Table A2: A selection of Italian macroeconomic time-series from the 1970s to the 1990s

Year	GDP growth	Inflation	Public deficit over GDP	Public debt over GDP	M2 growth	Monetary base growth (raw)	Monetary base growth (adjusted)	Official discount rate	Lit/DM exchange rate
1960	7.2	2.7	0.3	32.3	13.7	-	-	3.5	149
1961	8.0	2.9	0.1	30.5	16.8	-	-	3.5	155
1962	6.7	5.1	0.1	29.4	18.2	-	-	3.5	155
1963	6.1	7.5	0.3	27.5	14.9	4.5	-	3.5	157
1964	3.8	5.9	0.1	27.4	8.0	8.9	-	3.5	157
1965	4.4	4.3	2.8	28.5	16.8	11.3	11.4	3.5	156
1966	6.6	2.0	2.9	33.3	12.4	9.1	11.0	3.5	157
1967	7.7	2.0	1.5	32.9	13.6	7.1	9.3	3.5	157
1968	7.2	1.3	2.1	35.4	11.7	8.6	9.7	3.5	156
1969	6.5	2.8	2.3	36.0	12.1	7.1	8.1	4.0	170
1970	6.1	5.1	3.6	37.0	14.8	14.2	12.3	5.5	171
1971	1.8	5.0	5.1	41.8	16.4	16.3	16.4	4.5	184
1972	3.7	5.6	6.7	47.5	22.6	13.1	13.6	4.0	182
1973	7.1	10.4	6.4	50.5	19.0	18.9	18.6	6.5	229
1974	5.5	19.4	6.3	50.0	18.1	15.3	15.4	8.0	268
1975	-2.1	17.2	11.2	56.4	24.0	17.1	18.6	6.0	260
1976	7.1	16.5	8.9	56.1	19.5	17.5	16.4	15.0	364
1977	2.5	18.1	8.1	55.1	21.0	19.1	18.9	11.5	407
1978	3.2	12.4	9.7	59.3	24.0	24.8	25.1	10.5	448
1979	5.9	15.7	9.5	58.1	20.0	14.0	13.8	15.0	468
1980	3.4	21.1	6.9	55.9	12.1	13.9	13.6	16.5	475
1981	0.9	18.7	10.8	58.3	11.2	13.4	13.3	19.0	535
1982	0.4	16.3	10.0	62.9	19.3	14.1	12.6	18.0	578
1983	1.2	15.0	10.1	69.1	13.2	15.1	13.3	17.0	606
1984	3.2	10.6	11.4	74.6	12.2	14.4	12.5	16.5	616
1985	2.8	8.6	12.3	80.6	10.5	17.4	14.6	15.0	682
1986	2.9	6.1	11.9	84.8	8.7	7.1	5.8	12.0	694
1987	3.2	4.6	11.5	88.7	7.6	10.1	9.2	12.0	737
1988	4.2	5.0	11.0	90.5	9.3	8.6	7.9	12.5	738
1989	3.4	6.6	11.4	92.9	11.9	12.4	10.7	13.5	743
1990	2.1	6.1	11.4	94.8	9.7	7.4	8.0	12.5	754
1991	1.5	6.4	11.3	98.1	9.5	5.6	8.8	12.0	756
1992	0.8	5.4	10.3	105.0	5.0	4.0	6.5	12.0	894
1993	-0.9	4.2	10.0	115.1	7.3	-8.9	6.6	8.0	987
1994	2.2	3.9	9.0	121.2	1.6	-5.0	2.8	7.5	1039
1995	2.9	5.4	7.4	120.9	2.7	-6.3	1.2	9.0	1107
1996	1.1	3.9	7.0	120.2	1.7	2.3	2.6	7.5	985
1997	1.9	1.7	2.7	117.4	-5.9	7.4	8.9	5.5	980
1998	1.4	1.8	2.7	114.2	-1.5	-28.9	8.4	3.0	990

Sources and definitions: *GDP*: Baffigi (2011); *Inflation*: National Index of Consumer Prices for Blue- and White-collar Worker Households, annual growth rate measured in December, ISTAT; *Public deficit*: 1960-1969, ISTAT (1973), *Annuario di contabilità nazionale*, III/I, 1970-1998, ISTAT (National Accounts); *Public debt*: Francese and Pace (2008); *M2, monetary base, official discount rate and lira/deutsche mark exchange rate*: Bank of Italy. M2 data may differ from those in Table 3 because of changes in definitions through time and data revisions. Monetary base growth in column 7 is adjusted for changes in the coefficient of reserve requirements; it refers to end-month data since 1987 and to maintenance period averages thereafter. Discount rate and exchange rate: end of period data.