UNIVERSITA' CATTOLICA DEL SACRO CUORE
- Milano -

QUADERNI DELL'ISTITUTO DI ECONOMIA E FINANZA

The Debate on the Crisis: Recent Reappraisals of the Concept of Functional Finance

G. Mastromatteo

105 – novembre 2011

UNIVERSITÀ CATTOLICA del Sacro Cuore

Quaderni dell’Istituto di Economia e Finanza
numero 105 novembre 2011

The Debate on the Crisis:
Recent Reappraisals of the Concept of Functional Finance

G. Mastromatteo (*)

(*) Istituto di Economia e Finanza, Università Cattolica del Sacro Cuore,
Largo Gemelli 1 – 20123 Milano, e-mail: giuseppe.mastromatteo@unicatt.it

Redazione

Istituto di Economia e Finanza
Università Cattolica del Sacro Cuore
Largo Gemelli 1
20123 Milano
tel.: 0039.02.7234.2976
fax: 0039.02.7234.2781
e-mail: ist.ef@unicatt.it

* Esemplare fuori commercio per il deposito legale agli effetti della Legge n. 106 del 15 aprile 2004.

* La Redazione ottempera agli obblighi previsti dalla Legge n. 106 del 15.04.2006, Decreto del Presidente della Repubblica del 03.05.2006 n. 252 pubblicato nella G.U. del 18.08.2006 n. 191.

* I quaderni sono disponibili on-line all'indirizzo dell'Istituto http://istituti.unicatt.it/ief

* I *Quaderni dell'Istituto di Economia e Finanza* costituiscono un servizio atto a fornire la tempestiva divulgazione di ricerche scientifiche originali, siano esse in forma definitiva o provvisoria.
L'accesso alla collana è approvato dal Comitato Scientifico, sentito il parere di un referee.

The Debate on the Crisis:
Recent Reappraisals of the Concept of Functional Finance

Giuseppe Mastromatteo[1]

Abstract
This paper seeks to map out the possible paths of effective management of public action – including the possibility of deficit-financed action – designed, firstly, to short-term problems, with an immediate impact against economic depression, and secondly, to the medium-long-term perspective, aiming to assure that the extent and role of policies enacted is sustainable over time. This analytical approach underscores the theoretical validity of an active role of fiscal policy in helping to overcome severe recessions, provided that this policy is underpinned by appropriate institutional rules and a judicious application of the method of functional finance. This approach implies that the economic evaluation of deficit financed projects and careful selection of meritorious projects should be oriented towards goals of collective interest. Also, such projects should always pursue the goal of increasing the productivity of the economic system, with a view to achieving sustainable growth and, over time, allowing the debt to be suitably refinanced, managed and reduced by means of budget surpluses obtained during economic upswings.

Keywords: crises, policies, functional finance, growth and sustainability of the public finance.

JEL codes: B22; E62; E63.

[1] The author wishes to express his sincere thanks to Prof. D.P. Giarda, Prof. C. Panico and Prof. G. Serravalli, Dr. E. Gatti and anonymous referee for their helpful comments on earlier versions of this work. All errors or omissions are to be attributed exclusively to the author himself.

1- Introduction

The shock that threw the markets into disarray in August 2007 and the subsequent development of a serious worldwide recession have once more directed the attention of theoretical debate to a number of interrelated issues which in recent times had faded from the forefront of investigation. There is renewed interest in seeking to understand the origins of the decline in productive activities and the possible connections between real and financial factors in sparking a crisis, as well as a quest to identify the most suitable remedial tools (if indeed there are any). Current scientific debate has begun to focus again on the long abandoned question as to whether it is legitimate for a State (or conceivably a State's duty) to take action with deficit spending policies funded through public debt, or with an increase in money supply. Recent discussion has even seen the revival of an expression coined by Abba Lerner in 1943, in the framework of a growing awareness among economists of the economic policy implications of Keynes' General theory. The expression is that of "functional finance", which refers explicitly to the argument that public budget should not only fulfill its traditional allocative tasks but should also address the problem of the stabilization of the cyclical trend of the economy. According to this theory, financial activity is considered as a tool for solving long-term problems, and pursues the aim of planning, stability and development of an economic and social system.

1.1 – The theoretical framework

Functional finance proposes a theoretical framework (see Lerner, 1943, Wray, 2003, 2009a, 2009,b) that differs from the concept of "sound finance" of the public operator. This theoretical approach holds that it is effective for the State to engage in borrowing as means of generating useful demand, and to avert an increase in the rate of unemployment as well as to respond to important social and collective needs. Therefore the problem does not consist in demonstrating that the deficit is detrimental, but rather, in determining at what point it is desirable for the balance sheet to show a deficit and thus to allow debt to accumulate and under what macroeconomic conditions it is possible for operators to continue running their activities under a deficit or in a liability position.

Following mainstream macroeconomic doctrine, this theoretical position is devoid of fruitful developments, for several reasons. Firstly, as pointed out by MacKenzie, 2006, who takes up again the reflections of Von Mises, 1922[1936], and puts forward considerations in line with consolidated laissez-faire positions, it is important to underline the allocative distortions of an economy driven by public debt. Particularly important is the risk of socialization of investments, which results in absence of incentives for saving and for accumulating private capital. Secondly, public borrowing is known to have adverse effects on the functioning of the markets, inducing a drive for wage increases and disrupting the balance of the labour market (cf. Greenspan, 2009[2]).

In addition to these difficulties, there is widespread concern over the consequences that an excess money supply - linked to financing of the public debt – may have on inflation and on price expectations, as is acknowledged in the literature with the Philips curve. Non negligible consequences may also be exerted on the currency situation, with effects on capital flows, on the exchange rate and the internal rate of interest in open economies, due to disruption of a

[2] Greenspan is not alone in holding this position, although his stance may raise eyebrows, coming as it does from the pulpit of one who bore considerable responsibility in the "easy money" policies that were subsequently considered to have been among the causes of the recent recession.

fiscal system based on a balanced budget. Fear of a permanent deficit and a growing public debt may also appear incumbent (Buchanan J. and Wagner E., 1977).
However, the problems springing from the recent severe worldwide crisis point to the need to focus renewed attention on the functional finance approach to macroeconomic stabilization, starting out specifically from the observation by Musgrave, 2003, p. 127, which reflects the fundamental work he published in 1959[3]: "*The concept of Functional Finance is a good framework in which to view budget policy, and the stark outline of Lerner's Functional Finance model did so brilliantly for its macro role. But the model needs to be extended to allow also for its other functions. Controlling aggregate demand, establishing which services should be provided and equity in their distribution must all be addressed, each of these having its own rationale and requiring implementation*".
Adopting a pragmatic interpretation of functional finance, this essay, through an in-depth analysis of the problems of macroeconomic stabilization, aims to map out the possible paths of effective management of public action.
The second section illustrates the problems involved in the debt deflation process, starting from the observations of De Grauwe, 2009, on the deflationary spirals that create an unstable economy.
The analysis proposed in this section will examine the situations in which fiscal policy measures and recourse to public borrowing may in the short term act as crucial tools to counter specific crisis situations. This can be the case when the efficacy of monetary policy is impaired (liquidity trap), or when there is a persistence of a severe recession that would, in the absence of government action aiming to provide anti-recession support for aggregate demand, have even more detrimental effects of the State deficit and on the increase in the public debt[4].

The third section inquires into the medium-long term consequences of the necessary anti-cyclic fiscal policy measures and the criteria to be adopted in order to keep public debt unsustainability at bay and ward off the impression that the public finances are being conducted like a Ponzi system. The fourth section, on the other hand, examines the theoretical context that makes it desirable – and feasible – to revive the functionalist approach *à la* Abba Lerner (1941, 1943, 1951).
Finally, the conclusions, which also dwell on the new crisis context, emphasize the need to diversify economic policy strategies and management of the public accounts, as highlighted in the earlier context by Minsky.

2- *Debt Deflation Process and the Need for Government Action*

2.1. *Analysis of the debt deflation process*

Ben S. Bernanke, 1995, in a major analysis of the most massive deflationary process of world history, namely the Great Depression of the 1930s, went so far as to write that "*to understand the Great Depression is the Holy Grail of macroeconomics*" but "*we do not yet have our hands on the Grail by any means*".

[3] Musgrave, starting specifically from the 1959 analytical contribution, built up the theoretical structure of budget decisions and the framework of functional finance with precise indications of the various policy objectives – stabilization, redistribution and allocation – and of the tools to be utilized.
[4] Cf. Casadio, Paradiso, Sarcinelli M. (2009, p.163), who, in an overview of the economic policy of the last sixty years, highlighted the gradual regression of fiscal policy in favor of monetary policy. These authors share the idea that during the recent worldwide crisis, the risk of plunging the real economy into a recessive-deflationary spiral led to a rediscovery of fiscal policy on the demand side, although this is still hindered by cultural reluctance in Europe and perhaps in the USA.

A number of different explanations have been put forward but, as argued by Bernanke, the problem of prolonged deflationary crises "*remains a fascinating intellectual challenge*" (Koo, 2008, Preface, p.XI).

De Grauwe, 2009, p.3, identifies four deflationary trends (*Keynesian savings paradox*, *Fisher's debt deflation, cost cutting deflation, Bank credit deflation)* which have a common origin in collective panic and increased risk aversion in specific market situations. Interaction among these tendencies leads not only to a drop in economic activity but also to prolonged self-perpetuation of recessive tendencies.

Of these deflationary spirals, the first and third are regarded as flow deflations, as they concern flow adjustments (savings and profit) by families and firms in recessive situations[5], while the second and fourth are examples of stock deflations, associated with periods of *balance sheet recession,* (Koo, 2008). All such spirals are examples of failure of coordination among private operators, often resulting from pessimistic or euphoric convictions and from behavioural interactions that limit the effectiveness of the classical market mechanisms (cf. Akerlof and Shiller, 2009). Moreover, flow and stock deflations reinforce each other: in particular, if the period prior to the crisis was characterized by excessive indebtedness of families and an abnormal extent of loans granted by banks and financial institutions, the resulting drastic stock deflation prevents the functioning of the normal balancing mechanisms that generally come into play during cyclical recessions[6].

2.2. Need for public intervention and variety of macroeconomic analyses

The solution to the above described failed coordination - De Grauwe believes - can and must be found in the fundamental role of public intervention as a means to sustain demand through public expenditure. A similar argument is strongly put forward by Koo, 2008, who, in seeking to understand how depressive spirals come into being and to individuate the appropriate remedial policies, argues that it is helpful to gain insight into the macroeconomic phenomenon which he aptly termed *balance sheet recession.* He underlines (pp. 58-63) that in a balance sheet recession the dramatic drop in tax revenue, due to sharp reduction in asset prices and deceleration of the economy (aggravated by the increase in welfare support for lower income families, through mechanisms that have become incorporated in various ways in the budgets of all developed countries), is far more severe than in a traditional recession.

---

[5] It is important to underline that when families, enterprises and banks do not attempt to adjust their balance sheets by reducing their debts, it is generally the case that automatic rebalancing mechanisms – in particular through the stabilizing force of the banking system - are sufficient to prevent flow deflations from degenerating into depressive spirals. The stabilization mechanism of the banking system is known: it acts through transmission of monetary impulses to the economy during recessions, by means of a reduction in the interest rate, typically induced by the central banks. Usually, the decrease in interest rates dissuades families from increasing their savings and drives firms towards private investments, thereby boosting the economy.

[6] The desire to avert the excessive accumulation of debt prompts families towards a higher rate of saving, which, however, is not accomplished, due to the worsened macroeconomic conditions. Banks then tend to reduce their risk exposure by reducing their lending activity, and they do not transform the decrease in the rate of return offered on deposits into a parallel decrease in the interest rate on loans, because they are concerned about the adverse prospects for the debt repayment capacity of firms and families. Firms no longer invest, and tend to reduce their production capacity in relation to a more contained sales trend. Taken together, such a sequence of events can obstruct the possibility of reining in the deflationary spiral.

With regard to an interpretation and theoretical analysis of economic instability, the teachings of Minsky (1982, 1986) still appear to hold great significance, while the theoretical models based on the rational behavior of agents and often on a simplified vision of the complexity of economic relations do not appear to provide persuasive arguments, on the macroeconomic plane, capable of shedding light on the nature of the deflationary spiral and pointing the way towards an effective exit strategy to overcome the crisis.

If one accepts the concept that State intervention is a fundamental tool for macroeconomic stabilization when private demand shrinks, then the answers to the following questions become crucial for a viable economic analysis:

a) what kind of policies should be awarded priority in order to re-launch the economy and restore the financial position of the main economic agents to equilibrium: for example, should priority be given to an increase in public expenditure or to reduction of the tax burden, with analysis, in either case, of the action typologies that can be undertaken?
b) what are the most appropriate tools, in the framework of the public budget, to finance the deficit?

The mainstream doctrine accepts the argument championed by Barro, which is based on the well-known Ricardian equivalence. According to this theoretical approach, a state deficit today – whether covered by the creation of money or through a loan obtained by issuing public bonds – requires higher taxation in the future. Awareness of such a situation induces families to save more, either as a means of coping with expected inflation, as in the case of quantitative easing, or in order to purchase new public loans, as in the case of recourse to borrowing. In either case, net private wealth remains unchanged and the stimulus effect of the expansionary policy manoeuvre is completely neutralized.

As suggested by Arestis and Sawyer (2003 and 2004), the Ricardian equivalence merely serves to illustrate accounting relations ex-post: it provides little insight into the impact of state deficits on private sector assets. The main problem of the Ricardian equivalence is that it rests on the assumption of full employment and denies the wealth effects generated by fiscal policies. If the economy operates below full employment, private savings will normally exceed investments and therefore – in an economy which we will assume to be closed, for the sake of simplicity – public budget deficits serve the function of absorbing these savings in order to close the gap in demand.

In contrast, the problem of the wealth effects generated by fiscal policies is of relevance on the analytical plane if one recognizes – in line with Keynes and following the approach of Davidson, 1982-83 – that "*important decisions involving production, investment and consumption activities are often taken in an uncertain (nonergodic) environment*". (Davidson, 2007, p.22). For example, a policy of reducing the tax burden on private individuals, to be financed through the issuing of public debt that will be held in the central bank, may not be effective against deflation if wealth effects are not generated and private individuals decide to destine the greater income obtained to repaying their debts (cf. Koo 2008, cited above).

Divergent assessments of the crowding out effect, i.e. the supplanting of private investments by public intervention, have also been put forward. One well-known analysis is that of Robert Barro on the ineffectiveness of the fiscal stimulus (see Barro, 2007, Tatom, 2009, Forster, 2009[7]). An equally significant and non-negligible alternative theoretical

[7] Forster, 2009, p.21 and p. 22 notes that "*if fiscal policy were so obviously effective at raising output and lowering unemployment, countries with persistently underperforming economies would have been doing it for years. Some have tried, but their economies continued to under-perform stubbornly nonetheless..... In a closed economy, government borrowing reduces the pool of saving available for private spending, either investment or consumption. .... An open economy permits a government to finance its deficits by importing saving from abroad.... The increase in domestic demand due to deficit spending is fully offset by a reduction in demand arising from net exports. Once again, Keynesian stimulus is of no effect.*" Tatom, 2009, p.18 mentions the negative effects of Keynesian fiscal policies on the financial markets and on the cost of capital, as also on the expectation of new future taxes. Both the paper by Forster and that by Tatom underscore the theoretical and

perspective is that of Tcherneva (2008a, pp.35-37), who argues that the crowding out effects do not arise as a result of fiscal policies. In fact, fiscal policies depend on monetary policy and on the interest rate, which, in an endogenous money system, is under the direct control of the monetary authority. Rather, Tcherneva believes, public expenditure policies actually generate crowding in effects, i.e. they inject high potential money into the economic system, thereby stimulating net credit to the private sector.

Evaluations of budget constraints are likewise notably divergent (cf. Bell, 1999). However, there is a general consensus that budget constraints have an important effect on the economy, as they limit the possibility of deficit spending. Since the government is a different agent in comparison to the private sector (as also recognized by the NEC, cf. Woodford, 2000, p. 32) and the growth rate of the economy is not a given but is subject to change, this limitation has non-negligible macroeconomic consequences.

Attempts to overcome these limits have been made both on the theoretical and analytical plane. In particular, Arestis and Sawyer, 2004, p. 151 link the sustainability of the state budget to a growth rate of the economy greater than the gross interest rate on the debt. Other authors (cf. Alsopp and Vines, 2005) believe it is useful, when exploring the stabilization potential of fiscal policy, to address the theme of solvency rather than the traditional issue of budget constraints, as these can be superseded by political decisions (as in the case of the war in Iraq for the USA or the recent government measures aimed at counteracting the world financial crisis).

2.3. Public finance and income stabilization: the specificity of the pragmatic approach

2.3.1 – A new scenario that calls for pragmatism

Given the profound theoretical divergences in macroeconomic analyses, it is helpful, as Minsky and many other economists have suggested, to adopt a pragmatic approach to the relation between public finance, income stabilization and debt sustainability. The specific conditions of each State as well as the different governance systems and institutional frameworks can thus be taken into account.

A useful starting point is the work of Spilimbergo, Symansky, Blanchard and Cottarelli, 2009, which offers a balanced pragmatic assessment of the impact of fiscal policies in a profound and generalized recession. What these authors underline is the distinctly novel character assumed by the crisis scenario when it occurs in a globalized economy. In such a case, the financial turmoil and the sharp drop in aggregate demand lead to an overall fragility of the world economy that cannot be fully evaluated by the econometric models. Reflections on the lessons of previous crises – the Savings and Loans Crisis in the 1980s, the situation of the Scandinavian countries in the early 1990s, the Japanese recession of the same period and in Korea in 1997 - suggest that the traditional macroeconomic policy measures adopted to support aggregate demand may be only scantily effective in the current scenario. For example, an export-led recovery strategy is not feasible for the overall worldwide economy; furthermore, the financial nature of the crisis has severely weakened the effectiveness of the traditional mechanisms of transmission of monetary policies. And since the drop in demand is linked to a strong negative wealth effect, this can fuel a self-perpetuating intensification of the recession, via "wait and see" and other uncertainty-related attitudes, as well as precautionary saving on the part of consumers and generalized credit restrictions.

The call for a strong fiscal response on the global level is therefore plausible and probably necessary in the circumstances described. However, not all States have sufficient resources or

---

empirical reasons behind the ineffectiveness of fiscal policy, and they also refer to the analysis by Barro, 2007, on the multiplier during wartime.

scope for recourse to expansionary fiscal manoeuvres, on account of the numerous restrictions on capital inflows/outflows, the marked public and foreign indebtedness dating from prior situations, and the high risk premium associated with the emission of State debt.

In this perspective, the emphasis in Spilimbergo-Symansky-Blanchard and Cottarelli, 2009, p. 27 on the need for a proper balance between long term action with a broad scope and fiscal sustainability can be fully shared.

Thus we can, at this point, put forward the following statements:

a) measures to overcome financial crises constitute the indispensable premise to stimulate growth that is sustainable over time; such measures should precede the solution of macroeconomic difficulties;

b) the timing of remedial measures is fundamental, as delays may significantly worsen the macroeconomic conditions and may involve higher costs for public finance at a later date.

c) Fiscal stimulus measures are useful and often necessary when the financial crisis causes a worsening of the balance sheets of families and firms.

d) The specificity of each crisis typology means that fiscal intervention on aggregate demand may not be as effective as expected; moreover, such intervention should be appropriate in its composition and should be carefully structured.

For a definition of appropriate composition and structure of the fiscal stimuli, it should be borne in mind that a prolonged crisis requires targeted measures designed to act on expenditure, in contrast to milder recessions in which tax cuts or an increase in money transfers may prove effective in re-launching the purchasing power of families and thus also of firms. In prolonged crises, the ensuing elevated uncertainty means that considerably greater difficulty will be encountered in endeavouring to counteract the drop in aggregate demand through a revival of consumption and private investment. In addition, the presence of macroeconomic conditions that have not been familiar over recent decades suggests that caution should be exercised in evaluating the impact of fiscal multiplicators. From a pragmatic point of view, this offers another justification for a diversification of policies aiming to support demand and to maximize the impact on a crisis-ridden economy. It is thus worth taking a fresh look at functional finance.

2.3.2 – *How should typologies of expenditure be prioritized? Priority should be awarded to public investment*

Functional finance has traditionally been criticized for its presumed indeterminacy, discretionality in its policies, time lags between decisions about changes in the expenditure budget and actual implementation of such changes. These flaws have led to a decline of interest in the theory originally proposed by Lerner, preference being given to application of objective rules of management of State finance, as such rules are based on transparent and verifiable parameters (Balassone and Franco, 2001).

However, some theoretical analyses have suggested that qualitative flexibility in selection of public expenditure, as in the functional finance approach, may be preferable to the rigidity of quantitative parameters[8]. For example, Anschauer (1989) emphasizes the importance of

[8] Colander and, Matthews, 2004, suggested the moving-average budget, as a small change that would help better to integrate the long-run and short-run dimensions of fiscal policy into the politics of budgets. It's a

orienting government expenditures towards areas of intervention that constitute the components of public capital; he demonstrates that an increase in investments in the public sector of the economy contributes to achieving an increase in private sector investments, thereby increasing the productivity of the latter as well[9].

It should be kept in mind that any increase in public investments must take into consideration the specific situations of each State – that is to say, a diversified approach should be allowed, on the basis of the incidence of public investments out of total State expenditure, degree of efficiency of public expenditure and of the administrative system, and so forth. Furthermore, one should not overlook the fact that public works may in fact increase the productivity of the private sector (see the reading of Lerner proposed by Forstater, 2003, p. 165) through reduction of the costs for firms, because there are numerous social services and services of collective interest that are not adequately provided by the private sector and which have beneficial effects for the economy and for society. In this regard, Giddens, 2009, proposes a shift in public investment policy, awarding priority to the aim of constructing societies capable of an equitable sharing of responsibilities in respect of vulnerable elements (personal, social, environmental); to achieve such a goal, he invokes a virtuous public-private partnership.

Clearly, careful selection of public investment projects, and of the manner of funding such projects, is of paramount importance. Rochon and Seccareccia, 2008, maintain that any recourse to the deficit should be linked to expenditure programs that address well defined and precise macroeconomic circumstances. We believe that in order for an expenditure policy to set itself the objective of achieving a high growth level, the policy should sustain a solid labour market with an elevated degree of well qualified labour characterized by an aptitude for operating in innovative processes. The creation and training of human capital achieved by ensuring good qualifications and better educational opportunities, and measures to protect against environmental blight and decline in the quality of life are fully in line with the aim of constructing more solid and productive economies.

To proceed in this direction, it is necessary to distinguish public expenditure into two fundamental components, namely ordinary operations (day-to-day current operating expenditures), and investments (capital expenditures, which call for a longer-term perspective). An appropriate financial balance between these two components should be established, while avoiding the defects of the lack of clarity typical of the double budget (Balassone and Franco, 2001, pp.39-41). Furthermore, just as is the case among private operators, there should be no rigid constraints on the expansion of investments by the State[10], although this must be maintained within the limits of a public capital whose financing and maintenance does not assume elephantine dimensions (Anschauer, 1998). Thus in non-

way to integrate the spirit of sound finance with the functional finance principles that make sense for the aggregate economy in which government spending and taxing decisions affect levels of economic activity.

[9] On the other hand, Anschauer himself (1998) is aware that this statement is not always valid, as economic inefficiency may derive from an excess of public capital, which is likely to lead to a greater tax burden and thereby reduce the economic returns of private business.

[10] It is known that public investments drag current expenses: the example of environmental maintenance to avert flooding and natural disasters typically implies that these expenses form part of ordinary action, with employment of staff constantly in charge of action designed to assure environmental protection. However, it one reflects that this kind of activity serves to avoid collective disasters, then it becomes undeniable that the aspect of investment for the benefit of the whole community constitutes its predominant element. A similar argument can be put forward with regard to expenditure on youth training: adequate funding for teachers capable of educating a country’s human resources represent an investment of invaluable public impact, and should not be scoffed at as mere transfers that crowd out expenditure for private investment.

pathological conditions the development of public capital should constitute a fundamental element of a growth strategy for national economies and for assurance of continuity in collecting tax revenue and servicing the debt.

This approach is in line with the theoretical heritage of Keynes, who proposed a policy orientation based on:

- a moderate wage policy[11], capable of making sure that business would reap adequate profit: this would suppress any temptation on the part of businesses to emigrate to other countries;
- rigorous taxation on personal income and/or on consumption.

But it hardly needs to be emphasized that today's scenario is very different from the Keynesian context, and globalization has radically changed the conditions that influence entrepreneurial choices. The huge gap between the wage base of workers in more industrialized countries as compared to wages in the emergent economies increasingly makes cost-based delocalization an attractive proposition; in addition, easy loopholes facilitate tax evasion and tax avoidance through international capital movements and recourse to tax havens. Yet the rationale of a policy strategy more clearly oriented towards collective welfare – with control of inflation and more equitable distribution of tax burdens –=is still widely accepted. To set in motion such a strategy, the revenue from capital gains tax should be utilized for social expenditure, in order to ensure that workers have an elevated income in real terms, even though actual wages may appear to be fairly low. This could be achieved by reducing the cost of reproduction of the labour force (to use classically Marxian terminology) and by enabling the financial position of families and firms to be in credit, so that the private sector can become a net positive contributor and help to cover the public sector deficit.

2.3.3 – *How should typologies of expenditure be prioritized? Examples of possible action*

Let us now revisit Abba Lerner's functionalist approach, with attention to the impact of deficit-financed projects on the economy and the selection of meritorious projects, while bearing in mind that the functionalist approach allows scope for policy discretionality depending on the concrete financial situation of each State, the weight of the public sector and the choices that influence collective behaviour through government decisions.

To illustrate the approach, it is helpful to make a three-way distinction in public expenditure programs: projects, between those that make a direct contribution to cost reduction, those whose contribution to cost reduction is made indirectly through their positive impact on the cost of living within the entire local community, and those that aim to increase productivity in the private economy (families and firms). Some examples are given below:

- *Direct impact on cost reduction*

A program of State incentives and/or guided State action aimed at reducing energy costs in order to tackle the scarcity of non-renewable energy sources and the associated environmental problems. This would at the same time have beneficial effects in decreasing firms' energy consumption and production and freight transportation costs, as well as inducing wage moderation. Additionally, it would favour a virtuous circle of research and development with multiple offshoots in terms of innovation in the productive and commercial context.

[11] In line with this indication, the reader is referred to the suggestion put forward by Spilimbergo-Symansky-Blanchard and Cottarelli, 2009, p. 28, who argue that wage increases in the public sector should be avoided, as they are generally not well targeted and, in addition, are irreversible; furthermore, in terms of economic efficiency and productivity, they can be likened to money transfers.

- *Indirect impact on cost reduction*

Support for improving public housing projects (council housing) based on low or zero energy cost and/or impact systems, and funding for more sophisticated disaster prevention systems, hydrogeologic protection, monitoring of ecological habitats.

- Action to *increase the productivity of economic systems*

Programs in the sphere of education and lifelong learning, technological retraining (Perez, 2009) and research would lead to innovation characterized by an elevated content of highly qualified and well-paid labour (based on intelligence, capabilities and individual and collective creativity). Development of advanced infrastructures (rail networks, integrated transportation connections, efficiency in collective transportation, hi-tech and internet equipped freeways) could favour increasing levels of productivity and integration of economic systems; this in turn would intensify trade and movement of goods, capital and people.

Furthermore, there are numerous forms of action which have the *twofold effect of both reducing costs and increasing the productivity of the economy*. Examples include an efficient health care system, based on prevention, research, advanced patient care protocols to reduce the heavy costs of hospitalization and of caring for non self-sufficient patients; a reduction in the cost of caring for children and the aged, to be obtained by constructing facilities such as public crèches and day-care / drop-in centres and by reinforcing community services for the disadvantaged; actions designed to safeguard and enhance the natural environment and heighten the appreciation of cultural attractions.

In addition to the above-described distinctions, various other measures designed to alleviate difficulties faced by families and enterprises can be suggested. In a recession, plunged as it is into an atmosphere of uncertainty, the adverse influence of uncertainty on families' consumption patterns leads to a precautional "wait and see" saving attitude, as mentioned earlier: this can be countered by specific measures such as subsidies/transfers to encourage labour and reduce unemployment and, more generally, to increase the effectiveness of the social protection network. Public intervention in favour of families who are having difficulty paying their home mortgage instalments, or to help them decrease their debt level may, in specific circumstances, represent a fiscal policy measure that could have positive macroeconomic reflexes by sustaining demand as well as improving the conditions faced by the credit and financial system.

For enterprises, the considerable uncertainty may bring investment decisions to a halt. In which case it is particularly important to provide support for entrepreneurial ventures that could survive on the market through appropriately restructured business activities. These opportunities could encounter difficulty in securing the necessary financing, due to the dysfunctions of the credit market. Public guarantees on new credit would make it easier for firms to face the critical aspects of the credit squeeze.

2.3.4. *Typologies of expenditure: a preliminary assessment*

In short, within the contemporary framework the traditional paradigms referring to the quality of social development (housing, education, health care, jobs) are expanded to embrace

new areas of intervention in the field of sustainable mobility, the environment and energy, and lifelong education. A limited list of high-profile projects, set in a long-term perspective and with strong externalities (environmental protection is an emblematic case), can act directly by increasing aggregate demand, and indirectly by inducing positive expectations. These projects should form part of targeted public expenditure or action programs that the Government undertakes to carry out integrally without subsequently hampering their execution by cutbacks due to lack of resources[12]. Furthermore, contexts characterized by scarcity of available public resources and the low propensity of the private sector to invest during prolonged crises point to the potential for public-private partnerships for value-added projects that would otherwise not be financially sustainable or which have been suspended due to lack of private capital (cf. Spilimbergo-Symansky-Blanchard and Cottarelli, 2009, p. 28).

The direct and indirect consequences of an improvement in the productivity and competitiveness of economic systems would help to cover the costs of funding the public programs, while at the same time providing tangible quality of life benefits for the population and containment of the adverse social costs of the crisis.

3. Functional Finance revisited

3.1. Stabilization Policies

It is of interest, in this context, to re-examine the approach based on functional finance, as presented by Lerner and subsequently applied, but it should be borne in mind that this approach depends crucially on the degree of freedom enjoyed by a State in enacting its public economy policies (Bell, 1999). As also shown by Forstater, 2003, p. 166, the feasibility of functional finance depends to a large extent on the possibility for a Government to levy taxes, issue liabilities and accept payment of securities that represent its liabilities, create and destroy money, purchase and sell bonds, administer and control the price of goods and services purchased from the private sector.

In a re-visitation of functional finance[13] seen as an exit strategy to overcome a generalized and global crisis, the assumption that a balanced budget is the priority objective, held to be "intrinsically good" independently of its impact on the economy, should be rejected (Seccareccia, 2010a e 2010b). An important strand of political economy (Alesina, Ardagna, Trebbi, 2006) has argued that stabilization of the balance sheet of the public budget, over time, to within certain specified values can contribute to control of inflation[14] and allows scope for adequate funding of productive investments, as well as enhancing government decision-making processes during economic crises (cf. Hoj, Galasso, Nicoletti, Thai-Thanh Dang, 2006, pp.5 ff.). On the other hand, as Alesina, Ardagna, Trebbi, 2006 themselves underline, the political conflict on apportioning the adjustment costs among the various stakeholder groups whose interests are divergent can delay the adoption of necessary and urgent action to ensure financial stabilization.

---

[12] Rapid accomplishment of programs within the appointed time span serves to avert the additional burden of a prolonging of the programs themselves, and also provides a deterrent against wasteful projects which, after an encouraging beginning, are put on hold and never completed.

[13] For an in-depth examination of a similar attempt to revive functional finance, towards the end of the 1990s, see the work by Nell, Forstater (ed.) (2002), which collects the works of a seminar held in the spring of 1998 at the *New School for Social Research* of New York..

[14] Significant analyses on the theme of the way in which voting behavior is influenced by the evolution of inflation and unemployment, and also on the opportunistic approach of political economy, were developed in the pioneering work by 1975. For a further in-depth inquiry into the question of *Political Business Cycles,* the reader is referred to Alesina, 1997.

The conclusion that stabilization can be achieved only when one of the social groups succeeds - by means of suitable political and institutional systems and/or specific electoral mechanisms - in imposing its desired policy on the other groups is formally correct, but it is very weak if developed to its extreme consequences. In contrast, during a crisis the method of functional finance, which takes into consideration the macroeconomic and microeconomic effects of public expenditure and, conceivably, of a deficit, is helpful in opening up new policies for compensating the costs of a potentially medium-term financial stabilization[15].

However, the question of social groups who have "lost out" needs to be addressed in further detail. As pointed out by Taccone, 2008, pp. 7-8, the limits beyond which such groups are no longer willing to bear the brunt of the costs should not be overlooked. Policies that severely and/or systematically infringe the rights of significant groups of citizens can undermine the "social pacts" that are a constitutive element of many state-run organizations in a democracy. This may lead to social discontent and unrest, to the point of compromising the economic outcome of stabilization measures, so that the politically dominant social group is compelled to perform a complete U-turn on previously agreed policies[16]. An alternative route capable of reconciling the need for financial stabilization with that of social compensation is to opt for action based on selective criteria, so that the different categories of public expenditure can be prioritized according to principles around which sufficient social consensus can be built up (Taccone, 2008, p. 9).

3.2 *Functional Finance and the problem of public debt sustainability*

As highlighted by Mehrling, 2003, the public finance apparatus is a powerful tool that can be adopted to address a broad range of major social problems. But how can different measures involving public expenditure be properly selected and prioritized, so that deficits and accumulated debts do not become unsustainable and distortions or abuse of the system can be forestalled?

The functional finance approach invokes considerations of the historical, political and also institutional aspects, and cannot be viewed merely as a theory of management of public requirements.[17]

---

[15] As suggested by Musgrave, 2003, p. 126, who took up the theme addressed by Wicksell, 1896, the mechanism of citizens' preference concerning expenditure and taxation choices is the best method available for allocative decisions. However, Musgrave himself admitted that the system for detecting preferences, through a comparison between the distribution of costs and benefits, is made explicit by taxation and not by indebtedness. The consequences on the plane of financial illusion and of the transfer of the burden to the future generations are known, and are examined in depth by the theory. These difficulties invite the suggestion that there is a need to rethink Musgrave's approach in order to avoid choices dictated exclusively by short term horizons. The attempt to revive the path indicated by Lerner may seem weak as far as resource distribution and allocation is concern, but it is fully in agreement with the need to establish a link between stabilization policies based on support for effective demand and a medium-long-term horizon oriented towards a resumption of growth, investments and productivity.

[16] Taccone, 2008, p. 8 further notes that one of the important aspects of mediation among opposing interests may involve the suggestion of additional expenditure as compensation for social groups who have been badly affected by the cost of stabilization policies, a suggestion that generally cannot be taken into consideration. This sometimes leads to the quest to find a middle way by changing the composition of public expenditure and public revenue, in order to reconcile the overall aim of a balanced budget with the proposal of transferring new resources to the social groups perceived to be the "losers". Such a move is an extremely challenging task, virtually impracticable during a crisis or recession.

[17] It is worth recalling the thought of Alvin Hansen, and the arguments clearly stated by Mehrling, 2003, who noted that there may be historical and political moments in which sound finance, i.e. rigid public budget rules prescribing a balanced or surplus budget, do not seem to be functional to the requirements of the economy.

The existence of a significant literature maintaining that there is a lack of scientific criteria for determining univocally the sustainability of the public debt (Pasinetti, 1998) should not be overlooked. This notwithstanding, the conviction that it is important to create appropriate conditions for a higher growth rate of the economy than the interest rate on public loans, in order to guarantee a sustainable base capable of reducing the weight of the debt over time, is widely shared among economists.

Therefore, from a theoretical point of view, it is not correct (other than in a purely accounting operation) to claim that every type of deficit triggers future increases in the public debt that will render its weight unsustainable for the economy. By the same token, it is hardly likely that every reduction in the deficit will necessarily be effective in leading to a stable and lasting decrease in the public debt. For if debt reduction causes a downturn in economic activity, then the scenario will be that of a less sustainable and heavier debt.

On the other hand, a continuous expansion of the debt may in itself lead to severe problems, as is well known on the financial markets. Increasing public indebtedness goes hand in hand with an increase in the expense of servicing the interest to be borne by the State. This can be tackled either by further issue of public bonds (which has the effect of further increasing the burden of servicing the debt), or, in the last analysis, by an increase in taxes. In this sense, the public debt can be described as self-feeding, so that the accumulated debt triggers further debt to finance the increasing expenditure on the interest. Furthermore, in order to provide an incentive for investors to purchase public bonds, the State has to increase the interest rate on the new issues, and has to continue to raise it in order to keep pace with the growing risk of insolvency, or of hostility on the part of the financial markets that judge the "fundamentals" of competitor countries to be more stable. Among the worst case scenarios there is the threat of debt consolidation, namely a condition in which the State is no longer capable of guaranteeing its repayments and can, at best, only renegotiate the debt by seeking longer terms of payment, or - in the extreme case – technical default (see Forges Davanzati, 2009).

For example, there may be cases where capital spending may be necessary prior to collecting the corresponding revenue: examples include investment in research and human capital development and technological infrastructures, and more generally, investment in measures designed to ensure that the collective community can meet the overall challenge of a competitive context. In such conditions, deficit financing represents the solution that provides the best response to the objective of economic development.

There have been historical circumstances - for example, after the Great Depression of 1929 - in which stabilization of aggregate demand became a priority aim: even before Keynes' General Theory of 1936, Hansen underlined that a large-scale public insurance against unemployment could have particularly positive consequences on the macroeconomic level, albeit with a burden to be borne by the State. By the same token, as Hansen goes on to point out, one should not overlook the late post-war experience, which rested on considering Government action, in terms of economic planning, as a driver of development. At a later time, above all from the 1970s onwards, a renewed predominance of cyclical problems re-launched the theoretical orientations (Minsky, 1986) that assigned to the State an appropriate role of macroeconomic stabilization through expansion of its intervention during recessions, through recourse to deficit spending (increase in public expenditure or reduction in taxation), and contraction during phases of production expansion and financial surplus.

The link between the theoretical approach of functional finance and macroeconomic policies carefully tailored to stabilize employment or to achieve full employment is important, yet it is coincidental: the two aspects can be linked but, if more urgent questions come into play, the priorities may prove to be different. As shown by Musgrave, 2003, pp. 124-125, over the course of history there may be changes in the mix of stabilization policies. Thus periods of a stronger economy make it possible to achieve a budget surplus, which can be destined, by means of suitable measures, to reduction of the public debt; this may also be of aid in addressing the question of long-term demographic change (eg. an aging population and an increasing burden for social protection systems). In contrast, during crisis periods priority can be awarded to re-launching demand.

It is also important to underline that in non-limited and important cases such as the Euro area countries, the option of issuing money and assuring payment of the implicit associated liabilities has been entrusted to an organ not forming part of any individual national State of the European Union, namely the European Central Bank, which operates according to the fundamental parameter of combating inflation. Support for the borrowing process, which must in any case be contained within the deficit limits and must ensure the gradual debt reduction of the member States, does not fall within the purview of the ECB.[18].

The limits which the most radical theorists of functional finance[19] consider to be artificial actually appear as real constraints in a open economy, where the States are severely constrained by their commercial balance, their current accounts and capital flows, as they are obliged to turn to the financial markets in order to secure resources required to carry out planned projects. That is to say, in the current setup of the international economic system, if a State aims to accomplish useful public projects desired by citizens, yet lacks the necessary tax revenue and deems an additional tax levy to be unworkable, but at the same time wishes to avoid currency difficulties (external structural disequilibrium) or the specter of inflation, then recourse to the financial market is the accepted procedure, but its outcome is intrinsically linked to the degree of confidence in the future sustainability of the debt[20].

Doubts as to the validity of belief in the pro-cyclicity of the budget trend have not been dispelled on the theoretical plane either. Admittedly such a belief was held in a vastly

---

[18] It is clear, as asserted even by the most radical supporters of functional finance, that in this case attention should still be paid to the words of William Jennings Bryan (March 19, 1860 – July 26, 1925), a lawyer, statesman and Democratic politician, three times nominated party candidate for President of the United States, with a strong popular appeal. At the *Democratic National Convention* of Chicago in 1896, in the context of broad-ranging debate on bimetallism, he delivered a celebrated speech which concluded with words that would subsequently become famous in the economic field as well: *"Having behind us the producing masses of this nation and the world, supported by the commercial interests, the labouring interests and the toilers everywhere, we will answer their demand for a gold standard by saying to them: You shall not press down upon the brow of labour this crown of thorns, you shall not crucify mankind upon a cross of gold"*

The simple response of abandoning "the cross of gold", and equally, *mutatis mutandis*, that of abandoning a possible "cross of the euro", seems to clash with the reality of a capital market which is integrated on the international level and highly attentive to the evolution of the pattern of debt of enterprises and banks, but also of individual national states. This is a particularly important aspect if one reflects that at times of severe financial and macroeconomic difficulty, European States that are free to issue liabilities insistently demand to be allowed into the Euro zone in order to avail themselves of this currency shield.

[19] The different impact in countries with flexible interest rates versus countries without monetary sovereignty (as highlighted by Nersisyan and Wray, 2010) with regard to the possibility of introducing measures oriented towards growth without excessive concern for constraints on the public debt, has justifiable theoretical bases. However, the economically non central nations – i.e. a sizeable number of the major economies, with the exception of the USA and China – encounter difficulty if they find themselves operating in a context of economic and financial globalization, partly on account of their virtual exclusion from the international capital markets, but also due to the balance of payments disequilibrium and the growing risk of imported inflation (cf. Reinhart and Rogoff , 2009a and 2009b).

[20] After the financial crisis, and given the seriousness of the Greek crisis, not to mention the growing threat that such a situation may engulf, by contagion, other European countries that are struggling with structural debt problems and/or public deficit, the markets are beginning to have doubts about the future of public finance. Investors are seeking answers to two kinds of questions: how will the deficits evolve in countries whose public finances are the most severely compromised in the short and medium term? Do these countries have the capacity to keep the situation under control and resist the pressure a slow or absent recovery may place on the public finances? The best way to dispel these doubts is to enter into a commitment providing a reassurance that the priority objective of the government's action is stabilization of the deficit and debt. Despite this, there still remains the unsolved problem of how to achieve such an objective without compromising the prospects for economic growth, and of how to promote a sustainable revival of demand in order to assure support for growth itself. Cf. Ciocca, 2009.

different historical and institutional context in comparison with the present circumstances ("*Look after employment and the budget will look after itself*", Keynes and Henderson argued in 1929 [1972]). However, even if one were to adopt the most radical functional finance approach, and there were no "real" and stringent financial constraints on the public budget, the balancing between expenditure and tax revenue would still remain subject to macroeconomic equilibrium limits in order to forestall inflationary and deflationary processes.

Therefore, it is crucial, in a modern approach to functional finance, to establish specific rules order to maintain the achievements over time. In effect, just as there is no guarantee that expenditure by private operators will be efficient and effective in leading to economic development, so also there is no a priori guarantee that resources managed by the State will be utilized for the genuine collective good, yet well structured management of public finances can represent a fundamental framework for concrete development of economic policies that will be appropriate for the historically evolving and institutional requirements of every community.

4. Functional finance based on rules and its advantages in the current macroeconomic context

4.1 *The rules of functional finance and the evolution of economic theory* .

As is made clear by Colander, 2003, functional finance represents a public finance theory that obeys the following rules:

1) The State must maintain a reasonable level of demand in all circumstances. If the level of expenditure is too restricted, leading to excessive unemployment, then the State must increase expenditure or cut taxes. If, on the other hand, the level of expenditure is too high, then economic policy must be oriented towards preventing inflation by reducing its own expenditure or by increasing taxes. Thus in this approach, economic policy acts as a fundamental macroeconomic stabilizer. *(Government spending: optimal money supply rule)*

2) Appropriate monetary policy manoeuvres must be implemented in order to assure interest levels that will induce the optimum level of investments necessary for economic growth. *(monetary policy: optimal total aggregate expenditure rule)*

3) The principles of sound finance, in the sense of a balanced budget and a ceiling on public indebtedness, should be subordinated to above two rules in the case of a clash of objectives (*priority of monetary and fiscal policy over a balanced budget*).

These three rules, as argued in Colander, 2003, led to the success of Lerner's vision of functional finance on the theoretical and political plane in the academic context of the 1950s and 1960s[21]. However, they proved to be insufficient – in terms of a politically and socially acceptable unemployment and inflation rate – from the mid 1970s onwards[22]. Furthermore, as

[21] During the 1950s and 1960s, in a phase of particularly marked economic dynamism, a number of circumstances contributed to the appeal of the functionalist approach. The focus on the macroeconomic consequences of public financing became the driver of growth that was sustained over time and was guided by investments, in a historical context of the predominance of the neoclassical versions of Keynesian theory.

[22] With the oil crisis of the 1970s and the rise of inflationary difficulties, Lerner's approach was abandoned because it seemed inadequate as an solution to the simultaneous rise of stagnation in production and increasing prices. Additionally, the adoption of Lerner's rules of functional finance as the fundamental basis for

from the 1980s, the theoretical predominance of New Classical Economics resulted in the primacy of a Walrasian single equilibrium[23], which progressively restricted the scope of active monetary and fiscal policy.

Since then, however, there has been greater awareness, on the academic level as well, of the limits of the single market equilibrium. This has led to rejection of the presumed optimality of this equilibrium, and has also raised the prospect of revising the three above-stated rules[24] Accordingly, Lerner and Colander included a fourth rule of functional finance, which calls on the government to enact price stabilization policies and to coordinate the above rules on optimal money supply (government spending rule), optimal total aggregate expenditure (monetary policy) and the subordinate position of a balanced budget (priority of

---

economic policy did not seem to result empirically in the desired stabilization of the economy (Colander 2003, p.37). Thus instead of proceeding to an in-depth analysis of the Keynesian approach, priority was awarded to a theoretical context that stressed the importance of analyzing the neoclassical microfoundations of macroeconomics, such as wage and price flexibility and the theory of rational expectations.

In effect, the rules of functional finance as they were interpreted at the time could be compatible with many different typologies of government expenditure and forms of taxation. Unfortunately, the functional finance approach took on the negative meaning of policies generically oriented towards significant levels of public deficit and mounting state indebtedness, with expansionary effects on expenditure (and consequent crowding out of private investment) as well as potentially devastating effects on the inflationary spiral. Moreover, since the theoretical approach of functional finance was clearly incompatible with the New Classical Economics revolution, any revision seeking to adapt the fertile intuitions of Lerner's original program to the problems now arising in a new macroeconomic context became totally unfeasible. In contrast, New Classical Economics succeeded in adopting the rational expectations approach in conjunction with the Walrasian single general equilibrium model.

This important theoretical connection led to the conclusion that if the assumption of markets characterized by perfect competition was adopted, then the hypothesis of the irrelevance of long term macropolicies could also be extended to the short term.

[23] In this regard, doubts remain concerning the possibility of applying the concept of "general economic equilibrium" in connection with New Classical Economics, i.e. to models systematically built on a single basic good, or even on none at all. Removal of the concept of "single general economic equilibrium", and the assumption – which has recently become possible by virtue of the scientific development of complex models and non-linear systems theories (such as models with multiple equilibria) – has also opened up new perspectives for active policy intervention.

[24] In this context it becomes possible, from a theoretical perspective as well, to propose a revisitation of functional finance by contemplating the framework of a world analyzed and governed by the complexity of multiple equilibria.

That is to say, functional finance can be utilized as a method to refine the mechanisms of selection of possible equilibrium situations in such a manner as to orient the economy towards socially more desirable equilibria. This approach is feasible inasmuch as theories based on multiple equilibria no longer rely on the presumption of the global optimality of the equilibrium chosen by the market. All the economic agents may be aware of the existence of a preferred equilibrium, but they may not be capable of reaching it through the converging behaviour of each of the private agents involved. As argued by De Grauwe with regard to failure of coordination (on this point the reader is referred to section two of the paper), it cannot be presumed, in contrast to the belief widely held in academic circles until recently, that the private economy, given its institutions, can always reach an equilibrium preferable to that which can be pursued by means of public guidance. If, as we endeavoured to demonstrate in the previous section, empirical and historical experience demonstrates that public intervention had a comparative advantage over the automatic response of the market as far as the stabilization of short term fluctuations is concerned, then there may be plausible reasons for taking into consideration the positive medium-long term effects of public finance as a means of addressing problems of negative macroeconomic externalities (for example, the effects of individual decisions on aggregate levels of expenditure).

monetary and fiscal policy over a balanced budget)_with a new rule on stable prices at the accepted or preferred unemployment level.[25] (price stabilization rule)

These four rules, taken together, may indeed provide valuable guidance for appraising the extent to which functional finance can genuinely address modern economic problems and deal with the effects of a worldwide crisis, in which the crisis on globalized and integrated economic and financial markets makes it imperative to address the question of the solvency of public finance. However, it is also worth noting that recessions can at times trigger an uncontrollable increase in the public debt even without an active intervention designed to support the economies.[26]

4.2. New orientations for advantageous application of functional finance

Is there an escape route that would make it possible, when it is genuinely necessary, to accumulate deficits without placing a heavy burden on the future generations or triggering severe inflation?

The above-mentioned four rules do not seem sufficient in the present-day context, in which economies no longer enjoy full flexibility in management of the national budget and are often weighed down by a heavy debt burden, crippling their support for growth. We believe that a solution may lie in adding a **fifth rule**, whereby the State is called upon to boost the productivity of the economy through public expenditure that invests in the nation's human and technological capital[27] and through containment of collective costs. This is to be achieved above all by policies that encourage competition and by provision of efficient public services. At the same time, it should be borne in mind that an improvement in the efficiency of state institutions, and thus in the ability to transform tax revenue into collective services appreciated by families and firms can heighten a nation's productivity as well as its

---

[25] This rule is not designed to expand the margins of policy discretionality (i.e. it does not intend to endorse the fine tuning conceptions that can culminate in the free hand of the policy Authorities): rather, it seeks to emphasize that when faced with a number of objectives (a defined mix of inflation and acceptable unemployment), what is required is to have at hand a range of tools that are not limited to monetary policy. These tools (cf. Ciocca, 2009, p. 103) should make reference to a variety of objectives, complementary or contrasting, according to mobile combinations dictated by the circumstances and not according a particular fixed approach held to be superior to all the others.

[26] For example. Minsky, an author who never held back from criticizing the neo-laisser-faire analysis, insistently stressed the importance of having a public sector endowed with a solid and solvent financial structure, with a fiscal system that would be effective in generating a surplus so as to avoid deterioration of the quality of the debt (Minsky, 1986, pp. 302-303). But the need for a reflection of this kind is not shared by the most ardent supporters of functional finance, who award little importance to the question of imposing limits concerning the quantity and quality of public expenditure. Such limits would be in conflict with Lerner's third rule, which asserts the priority of economic (monetary and fiscal) policy over the objectives of sound finance. Furthermore, according to the more radical interpretations advanced by some exponents of the Chartalist theory (Wray, 2003 and 2009c), limits on the public budget are artificial so long as a State that issues and prints money does not refuse to honour payment of the liabilities implicit in the creation of money. In this vision, the State is not bound by any particular limits on the deficit, unlike private operators, who are restricted by the financial constraint of their takings from sales or services delivered and by the possibility of obtaining loans. Moreover, caution is called for in drawing a parallel between the issue of bonds, which is a market operation, and the creation of money, which is an exercise of sovereignty: in some situations, typically in the Euro countries, this sovereignty is exercised today by an authority different from that which governs the budget.

[27] Cf. Mankiw, Romer, Weil, 1992 who, in the framework of modern growth theories, offered a significant and empirically relevant analysis to explain both the impact of human capital and also the technological component. Parente and Prescott, 2000, underline the barriers that cripple technological innovation; in addition the authors link growth opportunities to institutional rules and to the international scope of trade. For a detailed analysis of the main drivers of growth, see Casadio, Paradiso, Sarcinelli, 2009, pp.141-148.

competitiveness on the global stage, in a virtuous self-perpetuating circle, and strengthen the community's resilience in cases of market failures.

Naturally, these conditions ought always to be respected (both during crises and when there is an upturn of the cycle) if the traditional functions of public budget policies were conducted efficiently in terms of distributive justice and resource allocation (cf. Musgrave, 1959). But what actually happens is that the crisis shortens the horizons of public intervention, so that action tends to focus on the anti-cyclical rather than the structural impact of policies. The fifth rule seeks to countervail this tendency, by strengthening the economic and financial sustainability of deficit spending through measures oriented towards the medium-long term. More specifically, it highlights the need for an organic program capable of boosting productivity and involving the entire community in the endeavour to overcome the structural weaknesses of every economy, partly also through expansion of public services and/or goods or selective tax reductions. And if public expenditure programs are carefully focused in this manner, their effectiveness may prove to be even higher than the results achieved during the Great Depression with the expansionary policies that were based on massive public works[28].

In short, if on the one hand the functional finance approach does not exclude deficit spending, on the other, it requires fiscal stimuli to re-launch productivity, and more stringently selective public spending. But does this approach lead to galloping inflation? The idea that inflation always constitutes a significant aspect of all expansionary spending policies seems unacceptable. Inflation is indeed often influenced – but, and this is the crucial point, not determined – by government spending in the sense that it is an injection of credit into the economy which should be commensurate with the total of public revenue. This concept implies that not all deficits are necessarily inflationary, and not all surpluses are deflationary.

As accepted not only by the authors of NEC but also by the more radical economists who subscribe to the Chartalist theory, excessive issue of liabilities by the State (either in the form of borrowing or of money) is inflationary only when growth of public expenditure in relation to revenue is not associated with a change in the assets of the private sector. For if no-one needs to do anything in order to obtain money (work, produce goods, exchange products and services, provide services to the community), then money loses value: this implies that its value depends on what each individual has to do in order to obtain it.

An example of how increased public expenditure can induce a behavioural change in the private sector and help to restrain the price trend is given by Minsky, in his examination of action designed to curb the inflationary push of wage increases associated with public works programs. Focusing on the supply of so-called public services *in kind* (Minsky, 1965, p. 199), Minsky cited the example of hospital workers in the United States: their public nature could acknowledged by increasing the lower incomes of hospital workers, and the increase would be borne by the collective community through the supply of labor at a guaranteed minimum wage, without any increase in the price of services for the sick. The recent American Health Care Reform Bill likewise seeks to reduce overall and per-capita health care expenses of American families in order to stimulate a revival of demand for goods and services.

Thus once again, although the expansionary effects of public programs on overall current expenditure are substantial, they should not be judged negatively *a priori*: rather, much depends on the way they affect the behaviour of the private sector. In accordance with

[28] For example, it is pointed out that Minsky criticized the unselective nature of public investments during the period in question, pointing out that lack of selection may actually, in more dishomogeneous social situations, offer an advantage to affluent workers and prove to be less responsive to the needs of a "war against poverty".

Lerner's functional finance approach, such policies must be judged essentially on the basis of their economic impact, and not merely in terms of their consequences for the budget.

Conclusions

This paper has endeavoured to develop an analytical approach that underscores the theoretical validity of an active role of fiscal policy in helping to overcome severe recessions, provided that this policy is underpinned by appropriate institutional rules and a judicious application of the method of functional finance.

The investigation emphasizes the importance of evaluating the (macro and microeconomic) impact of decisions on expenditure, and stresses the need for a list of priorities in resource allocation, so that a broader perspective, extending beyond a mere balance constraints approach, can be adopted in public finance. The system outlined in this paper increases the degree of freedom in compensating groups that are socially disfavoured as a result of the stabilization manoeuvres, and can generate collective benefits that overcome adverse phenomena such as an inflationary push or wage claims not linked to productivity.

Among the significant aspects of the proposal, one important element consists in maintaining flexibility in the management of national budgets once anti-recessive manoeuvres to assure public support for demand have been put in place. This implies that the economic evaluation of deficit financed projects and careful selection of meritorious projects should be oriented towards goals of collective interest that go beyond the short-term. Also, such projects should always pursue the goal of increasing the productivity of the economic system, with a view to achieving sustainable growth and, over time, allowing the debt to be suitably refinanced, managed and reduced by means of budget surpluses obtained during economic upswings.

A further implication of the approach championed here is that public expenditure can indeed be based on deficit spending if necessary, and that such a policy need not cause apprehension among a generation that has learned to view the public debt as the specter of looming disaster. Rather, if public expenditure is drastically restructured by cutting out bureaucratically wasteful projects that become mired in red tape, concentrating instead on investment programs of collective utility, then it can become an effective tool for improvement of the competitiveness of economic systems, which in turn will assure the financial sustainability of the private sector cash-flow (families and firms) and indeed of entire national communities. This is particularly true if, at the same time, the macroeconomic strategy guided and accompanied by elevated levels of personal debt is replaced not only by policies oriented towards the growth of public investments but also by reconstruction of personal savings, leading to marked collective benefits.

Thus a well formulated strategy of public social investment programs has an impact that goes beyond the short term, as it contributes to remoulding collective behaviour over time, and is thus capable of inducing potentially positive financial and economic effects in the medium and long term, provided that the extent of state intervention does not become pathological. In short, throughout the process of selecting and implementing such programs, attention should constantly focus on striving to boost the medium-long term growth rate of the entire economic system. It is this more extended horizon, rather than the stop-go short-term horizon, that can most reliably underpin the financial sustainability of the public accounts. In this perspective, functional finance heightens an approach to fiscal policy management that moves beyond the simplistic tool kit of an increase in effective demand. Instead of attempting to stimulate consumption and to buttress the expectation of returns on private investment (cf.

Tcherneva, 2008b), functional finance seeks to usher in a more far-reaching economic policy that sets itself medium or long-term policy objectives (for example, that of limiting the increase in family debt, combating oligopolistic and monopolistic powers and stimulating the entrepreneurial spirit together with individual retraining and qualification: cf. Minsky, 1975, p. 167; 1982). This would involve laying down guidelines that carefully select expenditure programs built around targeted action, and such programs should be concretely monitored during their implementation, so as to keep track of their direct and indirect effect on demand. In sum, the conditions allowing these measures to be correctly enacted without harmful contra-indications[29] depend on a suitable mix of discretionary actions and on respect for rules that replace the traditional budget constraints.

[29] Ciocca, 2009, p. 116, in a recent examination of the theoretical contribution of post-Keynesian economists, advocates the revival of a very clear proposal, of Keynesian derivation, as a means of counteracting the crisis: "*In order to overcome the current difficulties, it is necessary to act simultaneously on the monetary and on the real front: to re-establish the functionality of finance, sustain global demand*". See also Seccareccia, 2010a e 2010b.

Bibliography

Alesina A. (1997), *Political Cycles and the Macroeconomy***.** MIT Press , Cambridge.

Alesina A., Ardagna S., Trebbi F. (2006), *Who Adjusty and When? On the Political Economy of Reforms*, NBER Working Papers 12049, February.

Allsopp C., Vines D. (2005), *The Macroeconomic Role of Fiscal Policy*, in *Oxford Review of Economic Policy*, Vol. 21 (4), pp.485-508.

Arestis P., Sawyer M. (2003), *The Case for Fiscal Policy* – Working Paper n. 382, *The Jerome Levy Economics Institute*, Annandale-on-Hudson, N.Y..

Arestis P., Sawyer M. (2004), *Re-examining Monetary and Fiscal Policies in the Twenty-First Century,* Edward Elgar, Cheltenham.

Akerlof G., Shiller R. (2009), *Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism*, Princeton University Press, Princeton, 264 pp.

Aschauer D.A. (1989), *Does Public Capital Crowd Out Private Capital?*, in *Journal of Monetary Economics*, Vol. 24, pp. 171-188.

Aschauer D.A. (1998), *How Big Should the Public Capital Stock Be?,* in *Public Policy Brief Note n. 43-A, September 1998 - The Levy Economics Institute of Bard College.*

Balassone F. e Franco D. (2001), *EMU Fiscal Rules: A New Answer to an Old Question?*, in Banca d'Italia, *Fiscal Rules*, 33-58, Rome.

Barro R.J. (2007), *Macroeconomic. A modern Approach*, Mason, OH-South-Western College Publishers.

Bell S. (1999), *Functional Finance: What, Why, and How?*, Working Paper n. 287, *The Jerome Levy Economics Institute*, Annandale-on-Hudson, N.Y.

Bernanke B.S. (1995), *The Economics of the Great Depression: A comparative Approach*, in *Journal of Money, Credit, and Banking*, 27 (1).

Buchanan J. M., Wagner R. E. (1977), *Democracy in Deficit: The Political Legacy of Lord Keynes.,* 1977.

Casadio P. , Paradiso A., Sarcinelli M. (2009), *La politica economica: quale aiuto allo sviluppo in Italia?*, prima parte in *Economia Italiana*, 2009/1 – Gennaio-Aprile (pp. 125-181); seconda parte in *Economia Italiana*, 2009/2 – Maggio-Agosto (pp.541-567).

Ciocca P. (2009), *Dopo Keynes, dopo Sraffa: il pensiero "critico" e l'economia italiana*, in *QA - Rivista dell'Associazione Rossi-Doria*, Milano, n.4/2009, pp. 93-121.

Colander D. (2003), *Functional finance, new classical economics and great-great grandsons*, in Nell E. J. e Forstater M. (a cura di) (2003), *op. cit*., pp. 35-51.

Colander D., Matthews P.H. (2004), *Integrating Sound Finance with Functional Finance*, in Middlebury College Economics Discussion Paper n. 04-13.

Davidson P. (1982-83), *Rational Expectations: A Fallacious Foundation for Studying Crucial Decision-Making Processes*, in *Journal of Post Keynesian Economics*, 5.

Davidson P. (2007), *Keynes' serious monetary theory*, in Davidson P., *John Maynard Keynes (Great Thinkers in Economics Series)*, Palgrave/Macmillan, London and New York, 2007.
econ.as.nyu.edu/docs/IO/8801/DavidsonKeynesMonetary.pdf

De Grauwe P. (2009), *Keynes' Savings paradox, Fisher's Debt Deflation and the Banking Crisis*, New Working Paper, University of Louven, March.

Forges Davanzati G. (2009), Il governo, la crisi e i costi sociali del rigore finanziario, in *Economia e Politica – Rivista on line di critica della politica economica*, 11 giugno 2009
http://www.economiaepolitica.it/index.php/primo-piano/il-governo-la-crisi-e-i-costi-sociali-del-rigore-finanziario/

Forstater M. (2003), *Functional Finance and Full Employment: Lessons from Lerner for Today?* in Nell E. J. and Forstater M. (a cura di) (2003.), *op. cit*., pp.160-170.

Forster J..D. (2009), *Keynesian Policies Stimulate Debate and Debt, Not Employment, in CESifo Forum,* n.2/2009, pp.20-25.

Giddens A. (2009), *The Politics of Climate Change*, Polity Press, Cambridge, 2009, pp. 264

Greenspan A. (2009), *Inflation is the big threat to a sustained recovery*, in *Financial Times*, 26/6/2009, p. 9

Hoj J., Galasso V., Nicoletti G., Thai-Thanh Dang (2006), The *Political Economy of Structural Reform*, OECD Economics Department, Working Paper n.501.

Keynes, J. M., Henderson, H. D., 1929 [1972]. '*Can Lloyd George Do It?*', in *Essays in Persuasion*, *The Collected Writings of John Maynard Keynes,* v. 9, Macmillan, Cambridge, pp. 86-125.

Keynes J. M. (1936), *The General Theory of Employment, Interest, and Money,* in *The Collected Writings*, Vol. VII, London, Macmillan, 1973 edition..

Koo R. C. (2008), *The Holy Grail of Macroeconomics: Lessons from Japan's Great Recession* , Wiley & Sons Ltd, New York.

Krugman P. (2007), *The conscience of a liberal*, Northon & Company, New York.

Lerner, A. P. (1941), *The Economic Steering Weel*, in *University Review*, June.

Lerner, A. P. (1943), *Functional Finance and the Federal Debt*, in *Social Research 10* (February 1943): 38-51.

Lerner, A. P. (1951), *The Economics of Employment*, Mc Grow Hill, New York.

MacKenzie D.W. (2006), *The Myth of Functional Finance: Mises vs. Lerner, in* Mises Daily by D.W. MacKenzie | Posted on 5/23/2006 12:00:00 AM

Mankiw G. N., Romer D., Weil D. N. (1992), *A Contribution to the Empirics of Economic Growth*, in *The Quarterly Journal of Economics*, 107, pp. 407-437.

Mehrling P. (2003), *Functional finance, past and present*, in Nell E. J. e Forstater M. (a cura di) (2003), *op. cit.*, pp. 83-88.

Minsky H.P. (1965), *The Role of Employment Policy*, in Gordon M. S. (a cura di) (1965), *Poverty in America,* Chandler Publishing Company, San Francisco.

Minsky H.P. (1975), *John Maynard Keynes*, Columbia University Press, New York.

Minsky H. P. (1982), *Can 'It' Happen Again? Essays on Instability and Finance*, M.E. Sharpe, New York.

Minsky H. P. (1986), *Stabilizing an unstable economy*, Yale University Press, New Haven and London.

Musgrave R.A. (1959), *The Theory of Public Finance*, McGraw-Hill, New York.

Musgrave R.A. (2003), *Functional finance and fiscal functions*, in Nell E. J. , Forstater M. (a cura di) (2003), op.cit. pp. 123-128.

Nell E. J. , Forstater M. (a cura di) (2003), *Reinventing Functional Finance Transformational Growth and Full Employment,* Edward Elgar, Cheltenham.

Nersisyan Y e Wray R. (2010), *Does Excessive Sovereign Debt Really Hurt Growth?A Critique of "This Time Is Different", by Reinhart and Rogoff,* in *Working Paper n. 603, June 2010 2009 - The Levy Economics Institute of Bard College.*

Nordhaus W.D. (1975), *The Political Business Cycle*, in *Review of Economic Studies* (April 1975)

Parente S. , Prescott E.C. (2000), *"Barriers to Riches"*, *MIT Press*, Cambridge, Massachusets.

Pasinetti L. (1998), *The myth (or folly) of the 3% Deficit/GDP Maastricht parameter*, in *Cambridge Journal of Economics*, 22.

Perez C. (2009), *After crisis: creative construction*, in *Open Democracy*, *OpenEconomy open-minded economics,* 5 March 2009 - http://www.opendemocracy.net/article/economics/email/how-to-make-economic-crisis-creative

Reinhart, C e K. Rogoff. (2009a). *This Time is Different: Eight Centuries of Financial Folly*. Princeton, New Jersey, Princeton University Press.

Reinhart, C. e K. Rogoff. (2009b). *"Growth in a Time of Debt."* paper prepared for *American Economic Review Papers and Proceedings*, December 31 (draft).

Rochon L.-P., Seccareccia M. (2008); *A Note on Deficits and Functional Finance Expenditures*, in http://www.progressive-economics.ca/2008/11/25/deficits-and-functional-finance/

Seccareccia M. (2010a), *Is Functional Finance 'Sound' Long-Term Policy or Is There a Need for an 'Exit Strategy' to Ensure Balanced Budgets?, Speech to the 44th Annual Conference of the Canadian Economics Association, Quebec City, May 29,2010.*

Seccareccia M. (2010b), *No to Fiscal Austerity. The Perils of Deflation and the Case for Functional Finance*, in *Economia e Politica – Rivista on line di critica della politica economica*, 19 luglio 2010 http://www.economiaepolitica.it/index.php/europa-e-mondo/no-to-fiscal-austerity-the-perils-of-deflation-and-the-case-for-functional-finance/

Spilimbergo A. – Symansky S. – Blanchard O. e Cottarelli C. (2009), *Fiscal Policy for the Crisis*, , in *CESifo Forum,* n.2/2009, pp.26-32.

Taccone A. (2008), *Riforme economiche e scelte collettive*, Quaderno n. 156, Università Luiss – Guido Carli – Roma – Dipartimento di Scienze Economiche e Aziendali.

Tatom J. A. (2009), *The limits of Fiscal Policy,* in *CESifo Forum,* n.2/2009, pp.14-19.

Tcherneva P. (2008a), *The return of Fiscal Policy: Can the New Developments in the New Economic Consensus Be Reconcilied with the Post-Keynesian View?*, Working Paper n. 539 *The Jerome Levy Economics Institute*, Annandale-on-Hudson, N.Y..

Tcherneva P. (2008b), *Keynes's Approach to Full Employment: Aggregate or Targeted Demand?* Working Paper n. 540 *The Jerome Levy Economics Institute*, Annandale-on-Hudson, N.Y..

Von Mises L., 1922[1936] *Socialism, an Economic and Sociological Analysis*, M. Kahane translator. Liberty Press, 1981.

Wicksell K. (1896), *Finanztheoretische Untersuchungen und das Steuerwesen Schweden's*, Fischer, Jena.

Woodford M. (2000), *Fiscal Requirement for Price Stability*, in *Princeton University Working Paper*, October. Versione aggiornata pubblicata in Woodford M. (2001), *Fiscal Requirements For Price Stability*, in *Journal of Money, Credit and Banking*, 2001, Vol. 33, n.3, pp.669-728.

Wray R. (2003), *Functional finance and US government budget surpluses in the new millennium,* in Nell E. J. e Forstater M. (a cura di) (2003), *op.cit*, pp.141-159.

Wray R. (2009a), *The Social and Economic Importance of Full Employment* in *Working Paper n. 560, April 2009 - The Levy Economics Institute of Bard College.*

Wray R. (2009b), *The return of Big Government – Policy Advice for President Obama*, in *Public Policy Brief Note n. 99, April 2009 - The Levy Economics Institute of Bard College.*

Wray R. (2009c) , *An Alternative View of Finance, Saving, Deficits, and Liquidity,* in *Working Paper n. 580, October 2009 - The Levy Economics Institute of Bard College.*

Elenco Quaderni già pubblicati

1. L. Giuriato, *Problemi di sostenibilità di programmi di riforma strutturale,* settembre 1993.
2. L. Giuriato, *Mutamenti di regime e riforme: stabilità politica e comportamenti accomodanti,* settembre 1993.
3. U. Galmarini, *Income Tax Enforcement Policy with Risk Averse Agents*, novembre 1993.
4. P. Giarda, *Le competenze regionali nelle recenti proposte di riforma costituzionale*, gennaio 1994.
5. L. Giuriato, *Therapy by Consensus in Systemic Transformations: an Evolutionary Perspective*, maggio 1994.
6. M. Bordignon, *Federalismo, perequazione e competizione fiscale. Spunti di riflessione in merito alle ipotesi di riforma della finanza regionale in Italia*, aprile 1995.
7. M. F. Ambrosanio, *Contenimento del disavanzo pubblico e controllo delle retribuzioni nel pubblico impiego*, maggio 1995.
8. M. Bordignon, *On Measuring Inefficiency in Economies with Public Goods: an Overall Measure of the Deadweight Loss of the Public Sector*, luglio 1995.
9. G. Colangelo, U. Galmarini, *On the Pareto Ranking of Commodity Taxes in Oligopoly*, novembre 1995.
10. U. Galmarini, *Coefficienti presuntivi di reddito e politiche di accertamento fiscale*, dicembre 1995.
11. U. Galmarini, *On the Size of the Regressive Bias in Tax Enforcement*, febbraio 1996.
12. G. Mastromatteo, *Innovazione di Prodotto e Dimensione del Settore Pubblico nel Modello di Baumol,* giugno 1996.
13. G. Turati, *La tassazione delle attività finanziarie in Italia: verifiche empiriche in tema di efficienza e di equità,* settembre 1996.
14. G. Mastromatteo, *Economia monetaria post-keynesiana e rigidità dei tassi bancari,* settembre 1996.
15. L. Rizzo, *Equalization of Public Training Expenditure in a Cross-Border Labour Market*, maggio 1997.
16. C. Bisogno, *Il mercato del credito e la propensione al risparmio delle famiglie: aggiornamento di un lavoro di Jappelli e Pagano*, maggio 1997.
17. F.G. Etro, *Evasione delle imposte indirette in oligopolio. Incidenza e ottima tassazione*, luglio 1997.
18. L. Colombo, *Problemi di adozione tecnologica in un'industria monopolistica*, ottobre 1997.
19. L. Rizzo, *Local Provision of Training in a Common Labour Market*, marzo 1998.
20. M.C. Chiuri, *A Model for the Household Labour Supply: An Empirical Test On A Sample of Italian Household with Pre-School Children*, maggio 1998.
21. U. Galmarini, *Tax Avoidance and Progressivity of the Income Tax in an Occupational Choice Model*, luglio 1998.
22. R. Hamaui, M. Ratti, *The National Central Banks' Role under EMU. The Case of the Bank of Italy*, novembre 1998.

23. A. Boitani, M. Damiani, *Heterogeneous Agents, Indexation and the Non Neutrality of Money*, marzo 1999.
24. A. Baglioni, *Liquidity Risk and Market Power in Banking*, luglio 1999.
25. M. Flavia Ambrosanio, *Armonizzazione e concorrenza fiscale: la politica della Comunità Europea*, luglio 1999.
26. A. Balestrino, U. Galmarini, *Public Expenditure and Tax Avoidance*, ottobre 1999.
27. L. Colombo, G. Weinrich, *The Phillips Curve as a Long-Run Phenomenon in a Macroeconomic Model with Complex Dynamics*, aprile 2000.
28. G.P. Barbetta, G. Turati, *L'analisi dell'efficienza tecnica nel settore della sanità. Un'applicazione al caso della Lombardia*, maggio 2000.
29. L. Colombo, *Struttura finanziaria delle imprese, rinegoziazione del debito Vs. Liquidazione. Una rassegna della letteratura*, maggio 2000.
30. M. Bordignon, *Problems of Soft Budget Constraints in Intergovernmental Relationships: the Case of Italy*, giugno 2000.
31. A. Boitani, M. Damiani, *Strategic complementarity, near-rationality and coordination*, giugno 2000.
32. P. Balduzzi, *Sistemi pensionistici a ripartizione e a capitalizzazione: il caso cileno e le implicazioni per l'Italia*, luglio 2000.
33. A. Baglioni, *Multiple Banking Relationships: competition among "inside" banks*, ottobre 2000.
34. A. Baglioni, R. Hamaui, *The Choice among Alternative Payment Systems: The European Experience*, ottobre 2000.
35. M.F. Ambrosanio, M. Bordignon, *La concorrenza fiscale in Europa: evidenze, dibattito, politiche*, novembre 2000.
36. L. Rizzo, *Equalization and Fiscal Competition: Theory and Evidence*, maggio 2001.
37. L. Rizzo, *Le Inefficienze del Decentramento Fiscale*, maggio 2001.
38. L. Colombo, *On the Role of Spillover Effects in Technology Adoption Problems*, maggio 2001.
39. L. Colombo, G. Coltro, *La misurazione della produttività: evidenza empirica e problemi metodologici*, maggio 2001.
40. L. Cappellari, G. Turati, *Volunteer Labour Supply: The Role of Workers' Motivations*, luglio 2001.
41. G.P. Barbetta, G. Turati, *Efficiency of junior high schools and the role of proprietary structure*, ottobre 2001.
42. A. Boitani, C. Cambini, *Regolazione incentivante per i servizi di trasporto locale*, novembre 2001.
43. P. Giarda, *Fiscal federalism in the Italian Constitution: the aftermath of the October 7th referendum*, novembre 2001.
44. M. Bordignon, F. Cerniglia, F. Revelli, *In Search for Yardstick Competition: Property Tax Rates and Electoral Behavior in Italian Cities*, marzo 2002.
45. F. Etro, *International Policy Coordination with Economic Unions*, marzo 2002.
46. Z. Rotondi, G. Vaciago, *A Puzzle Solved: the Euro is the D.Mark*, settembre 2002.
47. A. Baglioni, *Bank Capital Regulation and Monetary Policy Transmission: an heterogeneous agents approach*, ottobre 2002.
48. A. Baglioni, *The New Basle Accord: Which Implications for Monetary Policy Transmission?*, ottobre 2002.
49. F. Etro, P. Giarda, *Redistribution, Decentralization and Constitutional Rules*, ottobre 2002.
50. L. Colombo, G. Turati, *La Dimensione Territoriale nei Processi di Concentrazione dell'Industria Bancaria Italiana*, novembre 2002.

51. Z. Rotondi, G. Vaciago, *The Reputation of a newborn Central Bank*, marzo 2003.
52. M. Bordignon, L. Colombo, U. Galmarini, *Fiscal Federalism and Endogenous Lobbies' Formation*, ottobre 2003.
53. Z. Rotondi, G. Vaciago, *The Reaction of central banks to Stock Markets*, novembre 2003.
54. A. Boitani, C. Cambini, *Le gare per i servizi di trasporto locale in Europa e in Italia: molto rumore per nulla?*, febbraio 2004.
55. V. Oppedisano, *I buoni scuola: un'analisi teorica e un esperimento empirico sulla realtà lombarda*, aprile 2004.
56. M. F. Ambrosanio, *Il ruolo degli enti locali per lo sviluppo sostenibile: prime valutazioni*, luglio 2004.
57. M. F. Ambrosanio, M. S. Caroppo, *The Response of Tax Havens to Initiatives Against Harmful Tax Competition: Formal Statements and Concrete Policies,* ottobre 2004.
58. A. Monticini, G. Vaciago, *Are Europe's Interest Rates led by FED Announcements?*, dicembre 2004.
59. A. Prandini, P. Ranci, *The Privatisation Process*, dicembre 2004.
60. G. Mastromatteo, L. Ventura, *Fundamentals, beliefs, and the origin of money: a search theoretic perspective,* dicembre 2004.
61. A. Baglioni, L. Colombo, *Managers' Compensation and Misreporting*, dicembre 2004.
62. P. Giarda, *Decentralization and intergovernmental fiscal relations in Italy: a review of past and recent trends,* gennaio 2005.
63. A. Baglioni, A. Monticini, *The Intraday price of money: evidence from the e-MID market*, luglio 2005.
64. A. Terzi, *International Financial Instability in a World of Currencies Hierarchy*, ottobre 2005.
65. M. F. Ambrosanio, A. Fontana, *Ricognizione delle Fonti Informative sulla Finanza Pubblica Italiana*, gennaio 2006.
66. L. Colombo, M. Grillo, *Collusion when the Number of Firms is Large*, marzo 2006.
67. A. Terzi, G. Verga, *Stock-bond correlation and the bond quality ratio: Removing the discount factor to generate a "deflated" stock index,* luglio 2006.
68. M. Grillo, *The Theory and Practice of Antitrust. A perspective in the history of economic ideas*, settembre 2006.
69. A. Baglioni, *Entry into a network industry: consumers' expectations and firms' pricing policies*, novembre 2006.
70. Z. Rotondi, G. Vaciago, *Lessons from the ECB experience: Frankfurt still matters!*, marzo 2007.
71. G. Vaciago, *Gli immobili pubblici…..ovvero, purché restino immobili*, marzo 2007.
72. F. Mattesini, L. Rossi, *Productivity shocks and Optimal Monetary Policy in a Unionized Labor Market Economy*, marzo 2007.
73. L. Colombo, G. Femminis, *The Social Value of Public Information with Costly Information Acquisition*, marzo 2007.
74. L. Colombo, H. Dawid, K. Kabus, *When do Thick Venture Capital Markets Foster Innovation? An Evolutionary Analysis*, marzo 2007.
75. A. Baglioni, *Corporate Governance as a Commitment and Signalling Device*, novembre 2007.
76. L. Colombo, G. Turati, *The Role of the Local Business Environment in Banking Consolidation*, febbraio 2008.

77. F. Mattesini, L. Rossi, *Optimal Monetary Policy in Economies with Dual Labor Markets*, febbraio 2008.
78. M. Abbritti, A. Boitani, M. Damiani, *Labour market imperfections, "divine coincidence" and the volatility of employment and inflation*, marzo 2008.
79. S. Colombo, *Discriminatory prices, endogenous locations and the Prisoner Dilemma problem*, aprile 2008.
80. L. Colombo, H. Dawid, *Complementary Assets, Start-Ups and Incentives to Innovate*, aprile 2008.
81. A. Baglioni, *Shareholders' Agreements and Voting Power, Evidence from Italian Listed Firms*, maggio 2008.
82. G. Ascari, L. Rossi, *Long-run Phillips Curve and Disinflation Dynamics: Calvo vs. Rotemberg Price Setting*, settembre 2008.
83. A. Baglioni, A. Monticini, *The intraday interest rate under a liquidity crisis: the case of August 2007*, ottobre 2008.
84. M. F. Ambrosanio, M. Bordignon, F. Cerniglia, *Constitutional reforms, fiscal decentralization and regional fiscal flows in Italy*, dicembre 2008.
85. S. Colombo, *Product differentiation, price discrimination and collusion*, marzo 2009.
86. L. Colombo, G. Weinrich, *Persistent disequilibrium dynamics and economic policy*, marzo 2009.
87. M. Bordignon, G. Tabellini, *Moderating Political Extremism: Single Round vs Runoff Elections under Plurality Rule*, aprile 2009.
88. S. Colombo, L. Grilli, C. Rossi Lamastra, *On the determinants of the degree of openness of Open Source firms: An entry model*, maggio 2009.
89. A. Baglioni, M. Grillo, *Calamità naturali e assicurazione: elementi di analisi per una riforma,* settembre 2009.
90. S. Colombo, *Pricing Policy and Partial Collusion,* ottobre 2009.
91. A. Baglioni, *Liquidity crunch in the interbank market: is it credit or liquidity risk, or both?,* novembre 2009.
92. S. Colombo, *Taxation and Predatory Prices in a Spatial Model*, marzo 2010.
93. A.Baglioni, A.Boitani, M.Liberatore, A.Monticini, *Is the leverage of European Commercial Banks Pro-Cyclical?,* maggio 2010.
94. M. Bordignon, S. Piazza, *Who do you blame in local finance? An analysis of municipal financing in Italy,* maggio 2010.
95. S. Colombo, *Bertrand and Cournot in the unidirectional Hotelling model,* maggio 2010.
96. A. Baglioni, L. Colombo, *The efficiency view of corporate boards: theory and evidence,* luglio 2010.
97. S. Brusco, L. Colombo, U. Galmarini, *Local Governments Tax Autonomy, Lobbying, and Welfare,* luglio 2010.
98. S. Colombo, L. Grilli, *Another unconsidered sinister effect of industry-specific crises? On the possible emergence of adverse selection phenomena on the survival of entrepreneurial ventures,* luglio 2010.
99. M. Bordignon, A. Monticini, *The importance of electoral rule: Evidence from Italy*, febbraio 2011.
100. L. Colombo, G. Femminis, *The Welfare Implications of Costly Information Provision*, febbraio 2011.
101. M.G. Brambilla, A. Michelangeli, E. Peluso*, Equity in the City: On Measuring Urban (Ine)Quality of Life,* maggio 2011.
102. G. Mastromatteo, *H.P. Minsky and Policies to Countervail Crises*, giugno 2011.
103. A. Baglioni, U. Cherubini, *Marking-to-Market Government Guarantees to Financial Systems. Theory and Evidence for Europe*, luglio 2011.

104. P. Giarda, *Dinamica, struttura e governo della spesa pubblica: un rapporto preliminare*, settembre 2011.

105. G. Mastromatteo, *The Debate on the Crisis: Recent Reappraisals of the Concept of Functional Finance*, novembre 2011.