

# Europe: Is Austerity Compatible with Endogenous Growth?

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**Abstract** This paper revisits neoclassical and endogenous growth theory enlightening their link with austerity policies adopted nowadays in Europe. The main finding is that austerity is certainly harmful in the short run, if used as a policy instrument in a recession. Paradoxically, the only argument in favor of austerity is that it would give more power to future anti-cyclical policies (fiscal space argument). There is no evidence that it would improve development, moreover there is a weak support to the idea that it might contribute positively to resume endogenous growth. The main policy suggestion is that European economic policy has to be revised by adopting an endogenous growth perspective.

## 1 Introduction: What Happens in Europe?

The most recent data show that the Eurozone is lagging behind the rest of the world, where recovery and growth appear to be prevailing, even though still without a sufficient intensity. According to NBER, the USA recession ended in June 2009. In Europe, instead, the deceleration of recovery in mid 2010 has been significant and linked to the crisis of sovereign debt. Starting from the end of 2011, a real divergence has occurred between the evolution of the economy in the Eurozone and in the US (Fig. 1).

The greater weight of the aging population on pensions and health expenditure is a major handicap of the European public budgets (Fig. 2) and the fiscal

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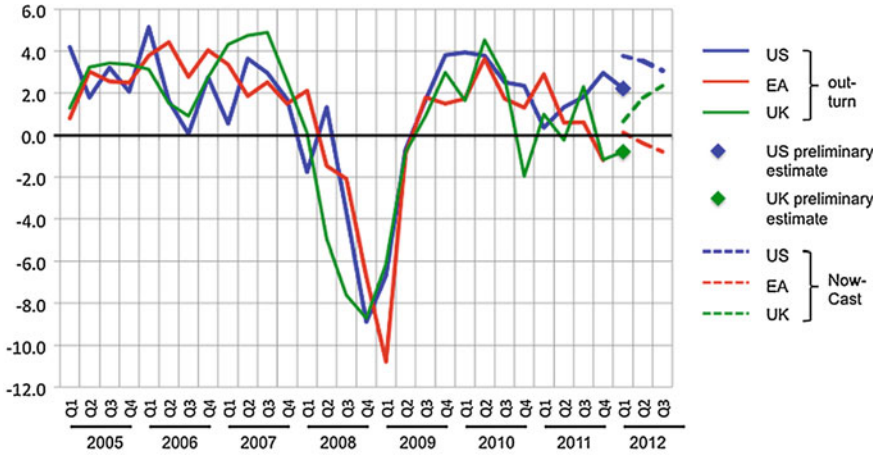
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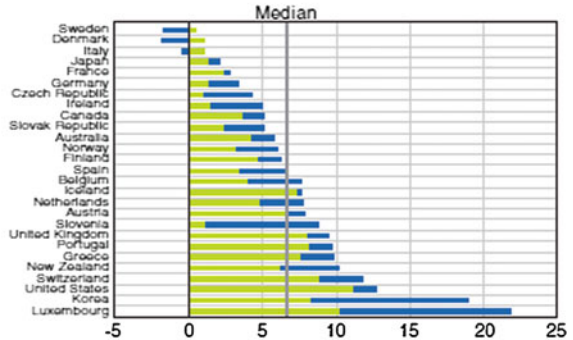


Source: OECD, Now-Casting.com

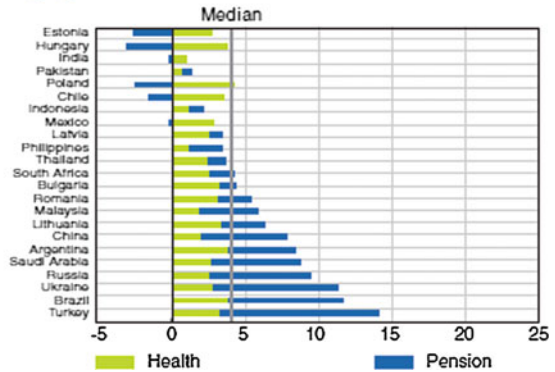
Fig. 1 Rate of growth of real GDP (OECD)

Fig. 2 Increase of budget expenditure forecasts for 2010–2050 as percentage of GDP (Cottarelli 2012)

Advanced economies



Emerging economies

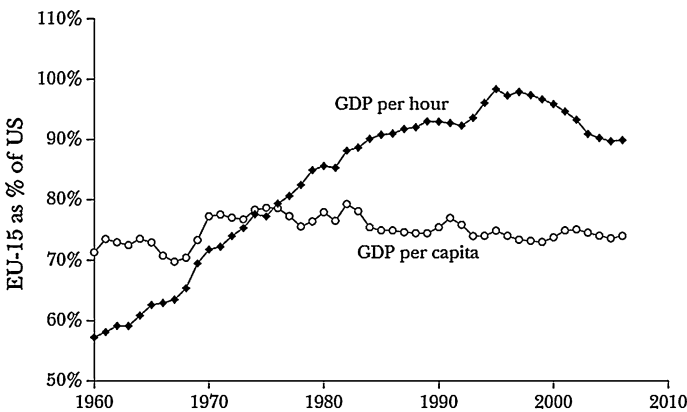


adjustments necessary to stabilize debt and rebalance the accounts appear particularly demanding.

The disease of which is most difficult to cure Europe is the low rate of productivity growth. From this disease Europe is afflicted since the middle of the 1990s, when the process ended that had brought her to overcome the US in terms of growth of GDP per hour worked (Fig. 3). While the evolution of productivity is different in different areas, the tendency is of dynamism decisively below the other areas of the world.

The budget adjustments on one side and the persistence of low growth and stagnant productivity on the other have caused several economists to doubt that incisive fiscal discipline may be sustainably enforced for Europe in the present economic crisis, without further undermining its prospects for recovery and growth. The IMF itself, for long time criticized because of its tough stance on the necessity of fiscal austerity, has recently assumed a more problematic position, also because, with its lagging growth and financial difficulties, the European area risks to contribute negatively to the recovery of the rest of the world economic system.

In this paper, we propose to reconsider growth theory to try to respond to the troubling question on the appropriateness of fiscal austerity and its possible effects on growth. In particular, we start from the premise that this question is different from the simple consideration of the trade offs between demand and supply side policies, including the size of the multipliers and the possible climbing of a Laffer curve. Because of the seemingly long term disease of the European area, we are asking the different and more complex question of whether efforts exclusively directed to balance the accounts may not do more long term damage to an economy already in structural trouble.



**Fig. 3** *GDP per hour* of work and *GDP per capita* in EU-15 1960-2006 (relative to USA). (Source The Conference Board and Groningen Growth and Development Center, Total Economy Database, 2007)

## 2 Endogenous Growth and the Business Cycle

The purpose of the theory of the endogenous growth was first to overcome the imperfections of the models of Solow–Ramsey, incapable to explain sustained growth. Secondly, to provide to a much tighter model in which all the crucial variables involved in the growth mechanism: savings, investment, and technological knowledge, are the rational results of individual decisions. For these reasons, the theory of endogenous growth adopted Ramsey’s theoretical structure, where the saving is the result of the maximization of a representative agent and the balanced path of growth is seen as a trajectory of consumption and savings derived from the resolution of a problem of inter-temporal optimization of a rational agent. The literature on endogenous growth indicates as a necessary condition for perpetual growth, that the present rate of interest is a lower limit for ever. This has the consequence of ensuring that total factor productivity does not decrease towards zero, but keeps increasing in response to the accumulation of knowledge and human capital (see for example Jones and Manuelli 1997), so that savings are not carried to a level insufficient to feed sustained growth. In this perspective, the main object of the theory of endogenous growth was to develop economically significant ways to ensure increasing returns to scale to the factors accumulated. This happened both by dismissing the scarcity of natural resources, and by introducing endogenous technological progress. For what concerns the scarcity problem, for example, labor was transformed in a completely reproducible resource: human capital. For technical progress, on the other hand, the main characteristic of the theory is its capacity to endogenize technological progress as a benevolent externality, endogenous to the economic system, but exogenous to investment decision making (Romer 1994; Grossman and Helpman 1993; Aghion and Howitt 1998).

While the concept of an endogenous, but involuntary technological progress may seem paradoxical, it captures one key problem of economic growth: the fact that it cannot be the object either of individual or of collective decision makers. Individual decisors cannot supposedly increase growth, since its endogeneity depends on non internalized spillovers of their investment allocation. Policy makers, on their part, are equally impotent since they cannot act on the externalities created by capital accumulation and research and development as if they were voluntary goods. Because of the economies of scale associated with these externalities, in fact, any way to interfere with the private allocation would undermine the efficiency of the competitive solution, which is the main reason to describe technological progress as an external, rather than as an internal effect of investment allocation in a market economy. The government can intervene by improving the economic and the competing environment where endogenous growth takes place. This intervention may be accomplished through different channels, such as maintaining law and order, protecting intellectual property rights, regulating trade and financial markets, providing services and infrastructure. All these actions, however, can only pursue the objective of removing

obstacles and reducing friction, thereby creating a space where dynamism can turn freely into growth and growth can unfold optimally.

The endogenous growth theory did, therefore, put its finger on the crucial question: is it possible to “force” growth with appropriate policies? Its answer is no and equally negative are the answers of scores of other, less formal theories of growth, such as, for example, those of the institutional school and, in particular those theories that have tried to explain the divergence among the growth paths of different countries through their past and recent history. The last bastion of the institutional school, in particular, is well presented in the latest book of Acemoglu and Robinson (2011), where the authors argue that growth is the endogenous fruit of political institutions and that such a relationship is basically dichotomous: countries grow if their institutions are “inclusive” and decay if institutions are “extractive”. While it seems very different at first sight, further analysis of this distinction suggests that this type of endogeneity merely transposes to institutions what endogenous growth assumes for firms. In other words, institutions are seen as centers of appropriation and allocation of public goods and their decisions spill over onto the private sector of a market economy, fostering growth or causing decay, according to whether these spillovers (and not necessarily the decisions themselves) promote participation and the right economic incentives or not. Furthermore Acemoglu and Robinson (2012a, b) suggest that international economic linkages, and institutional choices of different societies are also entangled. Both in neoclassical and institutional endogenous growth, therefore, an idea emerges of the possibility that a virtuous circle (and, in the negative case of a vicious one) may result from a positive feedback between partial and uninformed decision making and its unplanned spillovers.

While it seems obviously related to the current economic performance of a country and its management, growth theory has typically been treated as a story about the long term. In Samuelson’s original presentation, in fact, the so called neoclassical synthesis explicitly assigned the long run to the domain of neoclassical growth, with full employment as a given characteristic and investment allocation to pursue sustained growth as its main policy problem. The domain of the short run, instead, was reserved to the Keynesian paradigm, with the capital stock as given and the pursuit of full employment through monetary and fiscal instruments as the principle policy objective. According to the Tinbergen tradition, if the two instruments: investment allocation and monetary/fiscal policies were independent, the neoclassical synthesis would admit a non contradictory solution, even though the intractability of endogenous growth from a policy intervention point of view would remain an unsolved problem. It appears, however, that in the past decades a slow and tortuous way of thinking has been developed around the idea that long term investment allocation may be negatively affected by any attempt at stabilizing incomes around a long term target through fiscal and monetary policies. An idea has also emerged, which tends to challenge the neoclassical synthesis from an opposite point of view: that long term unemployment may be compatible with growth, or, in other words, that multiple long run equilibria are

possible and that in some of them successful investment allocation may run counter to the achievement of full employment.

Neoclassical growth theory, on the other hand, both in its Solow–Ramsey and endogenous versions, is essentially a theory of *potential growth*, in the sense that it pays no attention to the economic cycle and to unemployment. The correspondent Keynesian theories of growth, instead, including the original Harrod Domar model and its advanced Kaldor-Pasinetti variants, are interested in explaining the pattern of *actual growth* and the possible ways to reconcile the economic cycle and the periodic unemployment of resources with a long term equilibrating mechanism. Such a mechanism can only be government intervention in the Harrod-Domar’s version, while it is an endogenous mechanism of redistribution between salaries and profits in the case of Kaldor and Pasinetti. In both cases, the Schumpeterian idea of “dynamism” as a necessary ingredient to foster accumulation and growth is essential, since investment depends on the level of the capital stock desired and this, in turn, is a function of the ambitions, the optimism about the future, the attitude to take risks, the greed and all that is implied by the Keynesian concept of “animal spirits” of the entrepreneurs.

### **3 The Relation Between Unemployment and Growth in the Short Run**

Many accounts of the relationship between short and long run policies emphasize the fact that in the long run there is no positive effect of inflation on growth (see, for example, Draghi 2012), so that any apparent success of unemployment reduction through monetary policies is destined to ultimately vanish. While this is posited to be the consequence both of rational expectations and empirical evidence, a possibly negative effect of inflation on growth is also envisaged through its negative effect on savings. Stabilization through fiscal policy, on the other hand, may also be detrimental for long run growth, for two different reasons. On one hand, rationality implies that economic agents will discount the future negative effects of any expansionary fiscal policy as ultimately non sustainable. On the other hand, such a policy will bring about increasing government debts, which also tend to have negative effects on long term growth and are ultimately unsustainable. Finally, it is argued that expansionary fiscal policy has gone hand in hand with the attempt at constructing a non sustainable welfare state (Draghi 2012) and that the pursuit of equity can only be successful if it is implemented by redistributing the fruits of long term growth.

While monetary policy remains an instrument that most economists consider effective to deal with temporary liquidity crises, albeit in different measure (see, for example Bernanke 2010 and Taylor 2011), not only the efficacy of expansive fiscal policy is reneged both in the short and in the long run, but an opposite approach to fiscal consolidation is advocated in the name of the theory of fiscal

space. According to this theory, which has been especially advocated by the IMF, fiscal austerity is necessary precisely because it is necessary to regain the efficacy of fiscal policy as an anti-recession instrument. This efficacy, in fact, has been compromised by past government spending, the expansion of the welfare state and the maturing of unsustainable conditions for the entitlements of the health and the pension systems. Austerity thus is paradoxically needed to reconstitute conditions where autonomous government spending is again possible without increasing an unsustainable debt or without crowding out private investment.

In the case of fiscal policy, therefore, the argument linking its lack of efficacy to growth is both more tenuous and more tortuous. On one hand, it is argued, fiscal policy is ineffective because people anticipate that its intended positive effects (for example the increases in private expenditure from a tax cut) are going to be counterbalanced by later, possibly larger, negative effects in the form of a tax increase, a greater debt or both. On the other hand, in countries where government expansion and the long term conditions of the welfare system require a positive fiscal adjustment, tax increases and expenditure cuts are the only way to proceed that would not compromise further long term growth, by undermining the operator's confidence in the viability of the country economic system.

More generally, one can say that Keynesian policies to correct the cycle are considered unreliable or ineffective for a variety of reasons: their inflationary underpinnings, the neo-Ricardian arguments on the inter-temporal equivalence of taxes and expenditures, the importance of expectations not only of individuals, but also of the financial markets, and, above all, a general disrepute that has befallen on the alleged association between big government and Keynesianism. These reasons are well analyzed by Krugman (2011), who also demonstrates how they are often based on misunderstandings, biases and tendentious interpretation of the empirical evidence. In any case, they appear to be overridden by the preoccupation that expanding government expenditure could only be done by increasing public debt and this, because of the reaction of the financial markets, would cause a financial catastrophe. Furthermore, a more subtle line of thought (Cline 2012; Rogoff 2010) appears to argue that growth, rather than full employment should be the target of government policies and this goal is demonstrably associated with low inflation and low public debt (Draghi 2012).

## 4 Austerity and Growth?

The revolutionary Keynesian insight on the possibility that the economic system could fall into recession because of insufficient (effective) demand was captured in a small series of models of the Cambridge school. These models, all of the Harrod-Domar family, essentially rested on the idea that markets insured that growth was compatible with equilibrium between supply and demand of goods, but a similar equilibrium on the labor market could be achieved only by a non market mechanism: government intervention, income distribution, or both. Solow showed that

this dichotomy depended on the assumption of a fixed coefficient production function. If factor substitution was possible, in fact, full employment could be reached by merely letting factor proportion adjust in response to the (market) change of wage rental ratios. A flexible production function thus reconstitutes the capacity of the markets to produce growth and full employment, even though growth is not sustained and will eventually end if it is not rescued by some form of exogenous technical progress.

One can dispute the possibility that with a given stock of capital, even in presence of a flexible production function, equilibrium may be achieved in the goods and the factor markets if institutional obstacles, such as sticky nominal wages prevent it from doing so. As Krugman (2011) has persuasively argued, however, Keynes' insight is much broader than it appears from the Harrod-Domar types of models. His insight, in fact, can be interpreted as made of two parts: (1) first, demand may fall short of supply, because of expectations or other autonomous factors; (2) second, because of the autonomous nature of some of the determinants of effective demand, the differences between demand and supply cannot be simply removed by the workings of the price system. These two points can be the object of different interpretation, when they are related to growth. For example, in a recent article, Farmer (2012) reformulates these two important ideas, by arguing that search and matching costs in the labor market lead to the existence of a continuum of equilibria and resolving the resulting indeterminacy by assuming that the beliefs of stock market participants are self-fulfilling. The article thus does not invoke the assumption of frictions that prevent wages and prices from reaching their equilibrium levels, but reaches the same conclusion: an economy can be trapped in a steady state characterized by persistent unemployment, if government does not intervene in a way that changes agents' expectations.

A second argument linking the Keynesian prescriptions to growth is implicitly provided by the endogenous growth theory. In this theory, sustained growth is possible only if externalities are generated by private R&D activities and human or non human capital accumulation and these externalities influence positively technical progress. But what if negative externalities are also generated, that reduce the dynamism in the economy and cause technical progress to recede or delay? This hypothesis introduces the idea that a recession may be only partly the result of the business cycle. Its duration and depth may be instead the symptoms of a negative structural change: the deterioration of the balance between the positive and the negative external effects of the market economy, which voids the economy's endogenous capacity to sustain growth and accelerates its decay toward the Solowian state of zero growth. In particular, one can view the "animal spirits" as an externality, in the sense that beliefs, however rational, tend to impact on the economy independently of the intentions of the economic agents who hold them and, once aggregated across all agents, may self fulfilling or self defeating depending on the circumstances. Negative beliefs may thus undermine sustained growth by reducing the dynamism of the economy, deflating expectations about the future, and chronically reducing effective demand. As a consequence,



endogenous growth may turn into endogenous stagnation with long term negative consequences on the wealth and the well being of a country.

But what would be the reason of a similar situation? Can we really conjecture that a certain type of industrial development, together with some measure of positive spillovers from knowledge and human capital build up could carry also a collective loss of positive animal spirits and dynamism? An externality spills over from the action of the individual agent, who typically does not care and is not directly affected by it, but its cumulative effect on the economy may be powerful. For example, R&D activities may act as a factor of competitive advantage for a firm, but the knowledge created is diffused in the economy through the mechanism of imitation and induced innovation and may result in an increase in aggregate productivity above and beyond the original increase for the firm who produced it. A negative externality could act in the same fashion, in the sense that a negative spillover from an individual firm or a sector may have profound consequences on the loss of dynamism of the whole economy. The individual firm behavior that could give rise to such an externality could take many forms, but we can conjecture that it would essentially consist in ways to pursue private profit that destroy social capital. These ways include illegal and corrupt behavior, as well as a variety of actions aiming to secure monopolistic rents for the individual involved. If the individual is successful in obtaining monopolistic rents, this causes direct damage for the economy, but the most important damage may be the indirect, external effect that derives from the fact that such a behavior induces other firms to put resources in rent seeking, with a ballooning impact on the economy.

In their book on “Animal Spirits” (2010), Akerlov and Shiller introduce the concept of a “confidence multiplier”, i.e. a Keynes-Hicks multiplier augmented or reduced by the degree of confidence of the economic agents in the economy. If we consider growth, rather than the immediate effect of government expenditure or taxation, however, confidence may be properly considered part of the external effects generated by the working of a market economy. During the expansionary phase of the business cycle, confidence tends to raise, thus boosting consumption and investment. The economy thrives and growth proceeds at higher speed under the joint effect of a booming demand and an expanding supply. Vice versa, in the contractionary phase, confidence is low, demand lagging behind supply and growth decelerating. A temporary decrease in confidence should not undermine the dynamism and maintain the conditions of sustained, endogenous growth-indeed, several economists claim that recessions are good for productivity increases, because they force producers to innovate or perish however, it seems fair to conjecture that a permanent increase in the uncertainty of expectations may have a very negative effect on the prospects of increasing productivity through dynamism and innovation. Tax increases and expenditure reduction, furthermore, may undermine investment in R&D and human capital, further reducing the scope for technical progress and endogenous growth.

## 5 Conclusion

The words “austerity” and “fiscal discipline” evoke an image of frugality and order and a general sense of virtues lost that need to be recovered. Yet we should be aware of the fact that the underlying moral tale of thrift and restraint was shattered by the Keynesian critique and by conceptual constructs, such as those of effective demand and liquidity schedule, which have never been successfully challenged. According to these constructs, thrift and the various typologies of fiscal discipline may be misleading models of behavior for macroeconomic policies, because they do not take into account the tendency of economies to fall below their potential, and even collapse, because of lack of confidence, or, put in more extreme words, because of self fulfilling depressionary expectations. While fiscal corrections may become necessary if the economy is moving on an unsustainable path, one should carefully consider the costs and the benefits of transition, and, in particular, the danger that the correction may be even less sustainable than the path itself.

Is there a trade off between fiscal discipline and growth? To the extent that we believe in the story narrated by endogenous growth theorists, there may very well be for two distinct reasons. First, dynamism in an economy may be undermined by negative externalities arising from economic activities that run counter the positive externalities that are supposed to support endogenously sustained growth. Negative externalities may arise from rent seeking, corruption, and a number of other private and public vices. If fiscal discipline is exercised at the expense of R&D and human capital formation, as it has been happening for example in Italy in recent years, these dysfunctional characteristics of the economy are aggravated and the hopes for endogenous growth may be dashed permanently. Second, both tax increases and expenditure cuts are self defeating to the extent that they permanently reduce the confidence of the economic agents in the future of the economy, and directly dampen their dynamism and willingness to face entrepreneurial and investment risks. If this happens, the Keynesian multipliers are the smaller part of the story: the larger part, specially for our country, may be the loss, for a long time, of any possibility of endogenous growth.

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