# A Fiscal-Monetary Policy Scheme Against Greek Indebtedness and Impoverishment

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## Abstract

Troika economics has brought Greece to a serious depression at a zero lower bound, with near unlimited supply of labor and near unlimited demand for money. In this paper, it is argued that these circumstances dictate to Greece the implementation individually of a long-term self-financing deficit-spending plan as a means of putting money into circulation in the country. Such a seigniorage-based self-financing deficit-spending, will boost demand and in response, output, tax base and tax revenue given the tax rate, with the increase in revenue being more than enough to be covering the deficit, and the excess revenue being channeled to paying out the accumulated debt. A k-percent monetary growth rule and constant inflation rate should be put forward, domestic credit expansion should be kept below OECD average, and potential output and tax Laffer curve assessments should be keeping track of the changing hysteresis effect. In view of the political instability plaguing modern Greece, the k-percent, balanced-budget, and no-open-market operations (unless under acts of God) rules should be constitutionalised (along with the tax system).

*Leve fit, quod bene fertur, onus*
The burden is made light when it is borne well; (Ovid)

## 1. INTRODUCTION

The failure of the Greek austerity experience is widely acknowledged, since as the International Monetary Fund (IMF), for example, admits, there ought to be: "*Better tailoring of Fund lending policies to the circumstances of monetary unions,… Avoiding undue delays in debt restructuring,… More attention to the political economy of adjustment,… More parsimony in fiscal structural reforms,… More effective risk-sharing arrangements within the euro area…*" (Gordon 2013, pp. 33-34). And Greece's recent return to the international bond market signals absolutely nothing about the toll its high debt and its current confrontation have been, are, and will be taking on the real economy and subsequently on the Greeks. As professor Mardas of the University of Thessaloniki (in Paphitis and Becatoros 2014) observed: "*the vicious circle of over-indebtedness will continue unabated.*"

The problem is the problematic confrontation of the debt problem: Eurozone is far from being a monetary union in the sense of an optimal currency area (see e.g. O'Rourke and Taylor 2013). And, one thing that has to be cleared up about ECB is that if no money can be printed, any indirect way(s) to overcome this shortcoming of the system as, for instance, Buiter and Rahbari (2012) elaborate upon in connection with ECB, a poor only substitute for seigniorage power can be by the same the definition of seigniorage. Consequently, there can be easy monetary policy neither at the national nor at the supranational level to address the developmental aspect of fiscal consolidation.

This is not a matter of policy articulation but a matter surrounding the conditions under which austerity is applied. According to standard economic theory and evidence (see e.g. Greenlaw et al. 2013), a public debt crisis can be confronted through fiscal consolidation based upon long-term fiscal austerity and accommodative monetary policy to take away the contractionary impact of the need for consecutive primary budget surpluses. Monetary policy should continue being accommodative even if consolidation fails, because the monetization of the debt is inevitable, and a monetarist initially call for a tight monetary policy would only postpone and aggravate the conditions of monetization.

It is plain to see from any source of statistics, (check, for example, the numbers in www.tradingeconomics.com/greece/), that the 2001 Eurozone accession euphoria that lowered interest rates and encouraged any sort of spending based on the subsequent capital inflows, ended abruptly with the rise of risk aversion in response to the Lehman crisis in 2008-09. The world record sovereign debt crisis that ensued, with the twin 2009 government budget and current account deficit put Greece in the hands of the Troika whose effects on this country are worse even than the 1929-1933 Great Crash in the US (Papadimitriou 2013): Severe depression at a near liquidity trap. This paper works out a fiscal-monetary policy-mix to get an economy like the current one in Greece out of its current impasse by fostering long-lasting and self-sustained growth, enabling thereby the satisfaction of its debt obligations comfortably, too.

The next section presents a diagrammatical discussion of the consequences of Troika economics in the context the standard neoclassical model (see e.g. Ott et al. 1975). The same section argues that the effects from Troika economics form the background for which the so-called "self-financing fiscal policy" (SFFP) is proposed; it has to be seigniorage- rather than debt-based given that the background is also one of sovereign debt crisis. Section 3 presents a diagrammatical discussion of the proposed seigniorage-based SFFP. The proposal is governed by the same mentality underlying the so-called "Chicago Pan" (see e.g. Benes and Kumhof 2012) that had been advanced by the Chicago School quantity theorists of money as a remedy against the Great Crash; it is one qualified in the light of the development of the SFFP. Section 4 concludes this paper with comments on Greece's ability to implement such a policy individually, corroborated perhaps by institutional changes in Eurozone and/or European Union: It is shown that Chicago-Plan rules are capable under SFFP of satisfying the debtor's obligations towards solvency by making the burden bearable through growth. It is a task that only individually may be performed, to march from survival to prosperity, regardless Europe's attitude towards it.

## 2. GREEK AUSTERITY AFTERMATH AND SFFP

The effects of Troika economics on Greece may be seen through Figure I. The subscripts "1" capture the situation the day before this economics starts being applied to Greece. The subscripts "2" describe the situation in the country today. In part I of Figure 1, the depression triggered by the fiscal and the overall austerity, has produced a dramatic downward shift of the labor demand curve $L^d$, matched by a similar shift of the supply curve $L^s$, with near unlimited supply of labor nowadays. Part II of the same figure illustrates the output decline through the production function, and part III depicts the deflation which has induced the downward shifts of the goods- and money-market equilibria loci, $H$ and $R$ in part IV, respectively, to a near zero bound position. The demand for money is almost an unlimited one at this bound, not from the viewpoint of hoarding, but because it reflects the aspirations for the restoration of the lost standard of living; the marginal utility of money is extremely high.

These developments are in line with Cottarelli (2012), who warned that countries that commit to short-term deficit reduction towards long-term sustainability may find that: "*growth slows more than expected . . . [they are] inclined to preserve their short term plans through additional tightening, even if it hurts growth more . . . my bottom line: unless you have to, you shouldn't .. . interest rates could actually rise [even] as the deficit falls ... [if] growth falls enough as a result of a fiscal tightening.*" The reason is that the fiscal multiplier may be higher when interest rates are at the zero lower bound (Christiano et al. (2011), Eggertsson (2009), and Woodford (2010)) and economic slack is high (Auerbach and Gorodnichenko 2013) And, that precisely has been the case for Greece following the Lehman crisis in 2008-09.

The Troika does admit that this multiplier was underestimated (see e.g. Gordon 2013) but because of errors in the factors influencing it, which factors are … (see e.g. Bertia et al. 2013) That is, the Troika approaches the matter of the multiplier technically rather than from the theoretical point of view that: "*at the zero bound, where the central bank cannot or will not but in any event does not perform its full role in stabilization policy, fiscal policy has the stabilization policy mission that others have convincingly argued it lacks in normal times*" (DeLong and Summers, in DeLong et al. 2012, p. 233). Austerity in this case may be fatal as it has already been for Greece. It follows that also inappropriate for Greece would be to continue austerity but in the light of Alesina and Rugy's (2013) explanation of the failure of austerity in Britain as one expected under the mix of reduced spending-increased taxation followed there instead of adopting spending only cuts. Depression-cum-zero bound circumstances are by no means normal under any sense of normality.

In a few words, the necessity of monetary expansion under fiscal consolidation, which presumes normal interest rate circumstances, has to be "bridged" with the necessity of expansionary fiscal policy under depression, which presumably should be advanced from a previously sound fiscal position in a Keynesian fashion. It is standard Economics that monetary policy is impotent at the zero bound and a monetary expansion may very well lead to asset market bubbles; yet, the need for fiscal consolidation and escape at the same time from depression makes monetary expansion a must. It is also common sense that deficit spending at the zero bound is cheap and easy to finance via borrowing to help the exodus from recession, but would
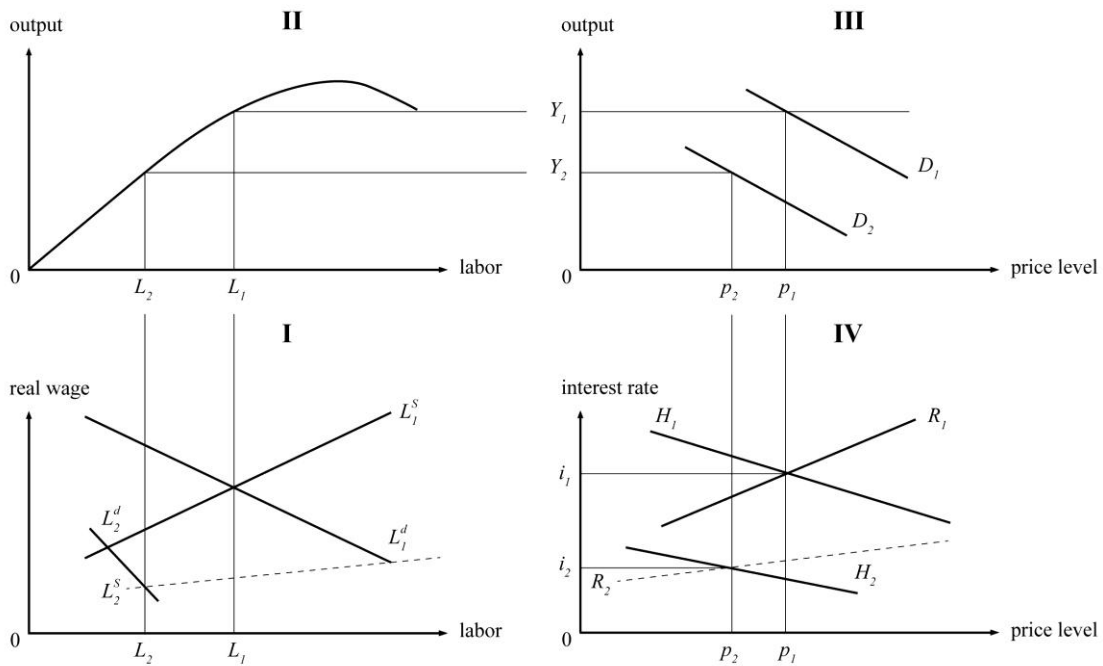
Figure 1: A Diagrammatical Illustration of the results of Troika Economics in Greece.

work against fiscal consolidation unless there can be self-financed fiscal policy (SFFP) as DeLong and Summers (in DeLong et al. 2012) put it, or "fiscal free-lunch" as Erceg and Linde (2010) call it.

Blanchard and Summers (1986) were the first ones to argue that: "*Policies of austerity may well be counterproductive even by the yard stick of reducing the burden of financing the national debt in the future. Austerity in a depressed economy can erode the long-run fiscal balance. Stimulus can improve it*" (DeLong and Summers, in DeLong et al. 2012, p. 235). And, DeLong and Summers maintain that for appropriate values of the multiplier, which is high, the hysteresis parameter, which hysteresis is an indispensable consequence of a depression, and of the tax rate, deficit spending through borrowing will be self-financed by stimulating the economy and increasing thereby the tax base even more than needed to service the debt. One might argue, consequently, that this "more" may be directed to the treatment of a sovereign debt crisis. As Ramey in discussing DeLong and Summers (in DeLong et al. 2012, p. 281) points out: "*This conclusion is essentially the Keynesian version of so-called supply-side economics, which the Reagan administration used to argue that tax cuts could stimulate the economy enough so that tax revenue would actually rise. Another way to look at it is as the new version of Say's Law: 'In a depressed economy, government spending creates its own financing.'*"

SFFP, as presented by DeLong and Summers, i.e. based on government borrowing, would be a good idea, indeed, if it addressed the question on who is going to lend the government. Feldstein (in DeLong et al. 2012) answers in connection with the US economy that mostly foreigners would, having the US to increase subsequently its exports, which in turn will bring about a devaluation and reduction in real incomes. But, this is actually only part of the answer, because a debt crisis is synonymous to prohibitively high borrowing costs in the international markets. And,

the depression has soaked out any source for domestic borrowing. SFFP through borrowing, i.e. as a Keynesian recipe, is not practical. Nevertheless, it would be a splendid idea if it was put in terms of the Chicago version of the Quantity Theory of Money, emphasizing that deficit spending is needed to put money directly into circulation, to conduct monetary policy: SFFP through seigniorage creation in line with Davis (1968), who showed that the Chicagoans favored budget deficits only during depressions.

Feldstein's fears for a crowding out effect prompted by SFFP are minimized thus too, as follows. Traditional macroeconomics (see e.g. Ott et al. 1975) explains that both monetary and fiscal policies can be effective at a liquidity trap if investment is interest elastic; if not, only fiscal policy works as indeed was proposed by Keynes (1936) Under the pessimism and the idle productive capacity accompanying a depression, investment cannot be expected to be responsive to changes in the interest rate. But, at the same time, unemployment is very high, the utility from one more monetary unit is extremely high for a bread-winner, and businesses can always find labor at any wage rate to respond to a recovery signal. Consequently, a public-works, for instance, program to rekindle the economy need not be permanent, involving state expansion and crowding out. It will if wages are assumed rigid downwards as Keynes did, in which case, of course, only the state is left as an income source. But, it is simply implausible to assume wage rigidity under a depression. Tavlas' (1997) work on this issue is very instructive.

The Chicago SFFP is in essence seigniorage based SFFP instead of the debt based one. It certainly shares the New Keynesian praise to zero bound commitment on the part of monetary policy (see e.g. Krugman 1998, and Eggertsson and Woodford 2003, and more recently Werning 2012). It also suggests that the monetary-policy impotence result at the zero bound and the destabilizing role of Friedman's rule under Sidrauski's (1967) hypothesis that all effects of future consumption on current well-being are captured by the stock of future consumption, (see also Faria and McAdam 2013), does not hold in a depression in which people do not know what the next day will bring. The same is true about the view that the monetary authority is constrained at the zero bound (see e.g. Erceg and Linde 2010); recession frees both fiscal and monetary policies.

## 3. SOME SIMPLE ANALYTICS

Let us for a minute recapitulate the essence of the SFFP argument. Let $Y$, $G$, and $D$ be standing for output, government spending, and the debt-to-output ratio with regard to the borrowing needed to finance $G$ under deficit spending, respectively, all in real terms. Also, let $r$, $g$, $\mu$, $0 \leq \eta, \tau \leq 1$, and $t$ be standing for the rate of borrowing, the rate of output change, fiscal multiplier, hysteresis parameter, tax-and-transfer rate, and time, correspondingly. The following relationships may now be put forward:

1. Current fiscal stimulus: $\Delta Y_t = \mu \Delta G_t$

2. Current deficit induced borrowing increase: $\Delta D_t = (1 - \tau \mu) \Delta G_t$

3. Annual financing of the burden for a constant $D$: $(r-g) \Delta D_t = (r-g)(1-\tau \mu) \Delta G_t$

4. Effect of current fiscal stimulus in future output: $\Delta Y_{t+1} = \eta \mu \Delta G_t$

5. Future change in tax receipts: $\tau \Delta Y_{t+1} = \tau \eta \mu \Delta G_t$

From the 3rd and 5th relationships, one concludes that the deficit will be self-financing if: *(r-g)(1-τμ)<τημ =>*

6. *g+[τημ/(1- τμ)]≥r.*

With *r>0*, we have that *1-τμ≥0.* If borrowing is replaced by money expansion, with *ΔD_t* being replaced by the inverse of the velocity of circulation, *V*, *(M/Y=1/V=v)*, and *m* being the rate of monetary growth, one obtains that:

3′. *(m-g)ΔD_t=(m-g)(1-τμ)ΔG_t*

and hence, that seigniorage financed deficit spending will be self-financing if:

6′. *g+[τημ/(1- τμ)]≥m.*

To prompt a discussion of these relationships, let *i*, *π*, and *σ* are the nominal rate of interest, the inflation rate, and the interest rate spread, respectively, with *i=r+π-σ*. At the zero bound, *i=0*, which implies that *σ=r+π*, which in turn becomes *σ=π* under seigniorage deficit financing, i.e. under *r=0*. The spread rate σ has risk and default components, and declines as output increases, reflecting the optimism surrounding growth. It is the rate of borrowing-bond growth, reflecting illiquidity risks plus imperfect "moneyness" in a Hicksian (1979 [1946]) fashion, corrected for the inflation rate, which increases with growth, reflecting the pressure of the expanding demand on prices. And, illiquidity risks are nil and no "moneyness" issue is raised under seigniorage finance and zero bond growth. Only, the seigniorage inflation part remains as a spread factor.

But, note that setting *r=0* in relationship 6, and comparing the resulting expression with 6′, one realizes that at the zero bound, self-financing deficit spending is harder to achieve under seigniorage issuance relative to borrowing, since *m>0*. The reason is that seigniorage is inflationary and if the increased demand for money is to be reflecting increased purchasing power beyond adjustment to inflation, the derivative of v, which is usually identified with the demand function for money, *v=v(π)* − as e.g. in Cagan (1956), *v(π)=exp(-βπ)*, with *β* being a constant − with respect to the inflation rate should exceed absolutely the unit, (given that the derivative is negative). The tax base, output, will have been increased enough for money-based self-financing if *dv(π)/dπ=|1|*; an even larger absolutely value would mean that the government will not only be taking back through taxes the money it issued to finance deficit spending, but taxes in excess of this amount to be servicing its debt with unchanged the tax rate. Indeed, the quantity theory equation in terms of growth rates is:

7. m-g=π+v(π)

which in conjunction with 6′ gives:

6′′. *[τημ/(1- τμ)]-π≥v(π).*

Differentiating both sides with respect to π, yields that *-1≥ dv(π)/dπ.*

The question of how much seigniorage should be issued has been a subject matter of research with no clear-cut results (see e.g. Reich 2011). One answer has always been pointing to the level maximizing government benefits out of it, but there

is no consensus in the determination of this level. Within the framework of this paper, the task becomes even more difficult, because the tax and debt Laffer curves are also involved as it may be seen through the following diagrammatical illustration of the seigniorage based SFFP: In Figure 2, the horizontal axis in quadrant I measures the primary budget and/or the accumulated debt. The vertical axis measures the new real money and/or bonds issued to finance budget imbalances and/or the debt. The lower 45-degrees line indicates different combinations of tax revenues and/or money-bonds consistent with a given budget value, with the horizontal intercept, point *A*, indicating balanced budget and the vertical intercept, point *B*, indicating deficit wholly financed through money and/or bond issuance. Adding the debt would shift this line outwards in a parallel fashion by the amount of the debt. The horizontal intercept indicates now a primary budget surplus enough to cover the debt; the taxes cover government expenditure plus debt. Point *A* corresponds to a balanced primary budget with the debt, *AA′*, being serviced through new money and/or bond supply by the amount *AA″= AA′*. The vertical intercept, *B′*, indicates government expenditure plus debt financed exclusively through more money and/or bonds.

Assuming no open market operations, no government borrowing whatsoever but only money issuance as is the case with seigniorage based SFFP, the vertical axis becomes one measuring changes exclusively in the real money stock. Letting the horizontal axis in quadrant II be measuring the change in the nominal interest rate, the positive sign of the second order derivative of money with respect to this rate in the demand function − in Zarembka's (1968) generalized money demand function, for example, $dM^\zeta/di=-(\lambda/i)hi^\lambda<0$ and $d^2M^\zeta/di^2=(\lambda/i)^2hi^\lambda>0$, where $\zeta$ denotes demand and $h$ is a constant − produces the curve which is convex towards the origin of the axes.
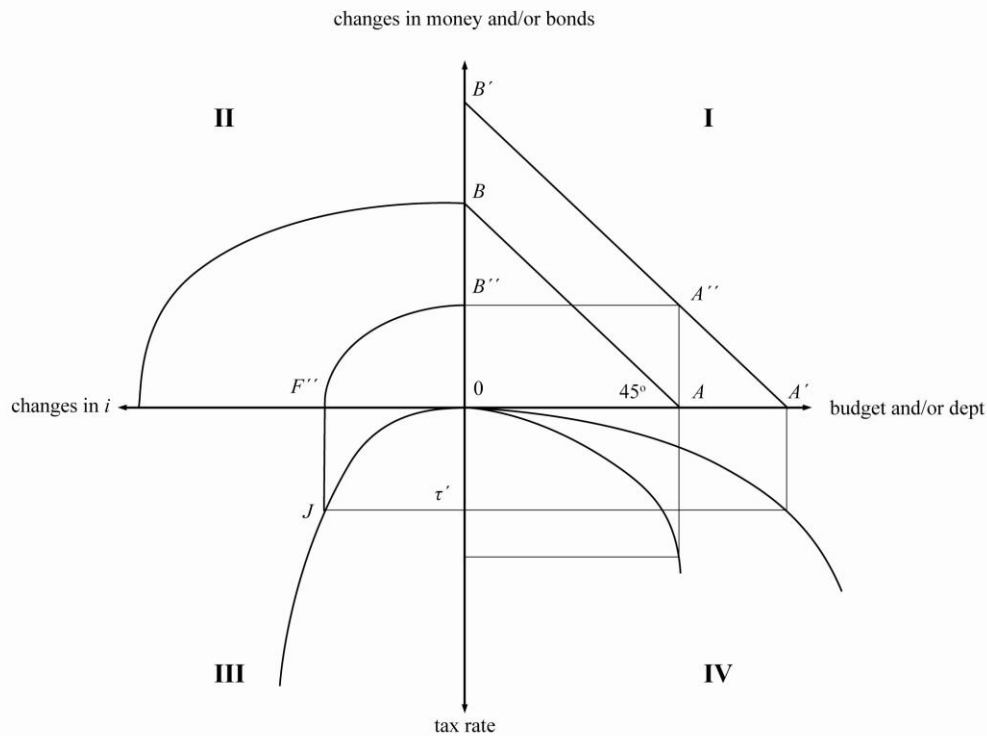


Figure 2: A Diagrammatical Discussion of the Chicago SFFP.

The increase in money demand in response to the decrease in the nominal rate of interest takes place at a decreasing rate given the money stock. That is, the change-in-money-demand curve drawn in quadrant II is only one, that corresponding to (the change in) money stock (by) *OB*, out of many other such curves each for a different money stock, like for example the curve *B′′F′′* for money stock *OB′′=AA′′*. Given a change in the money stock, it records how the corresponding change in money demand alters the interest rate to restore equilibrium at the new level of the money stock. It is a one-to-one mapping from the change in this stock to the change in the interest rate brought about by the adjustment of money demand.

Next, the vertical axis in quadrant III measures the average tax-and-transfer rate. Recall that $i=r+\pi-\sigma=>r=i-\pi+\sigma$ and hence, the 6th relationship above may be rewritten as follows: $g+[\tau\eta\mu/(1-\tau\mu)]+\pi-\sigma \geq i$. Letting $i_t/i_{t-1}=1+\iota=>\Delta i_t=\iota i_{t-1}$, the last inequality becomes: $g+[\tau\eta\mu/(1-\tau\mu)]+\pi-\sigma \geq(1+\iota)i_{t-1}=i_{t-1}+\Delta i_t$. It follows that $d\Delta i_t/d\tau=\eta\mu/(1-\tau\mu)^2>0$ and $d^2\Delta i_t/d\tau^2=2\eta\mu^2/(1-\tau\mu)^3>0$. Therefore, the relationship between $\Delta i$ and $\tau$ is given by a curve such as that in quadrant III. Coming, finally, to quadrant IV, it depicts an austerity tax Laffer curve under balanced primary budget. Tax revenue is OA, with the curve peaking at a fairly high tax rate, for simplicity at $\tau=1$. According to the general-equilibrium Stone-Geary utility function approach of Malcomson (1986, 1988)-Denicolo (1988)-Gahvari (1989), the curve peaks just when people can no longer make ends meet even under government transfers. Now, given the near-unlimited supply of labor conditions in Greece nowadays, and in any depression more generally, people are just at that stage, and the curve is increasing all the way to $\tau=1$ or near there.

Theoretically, quadrants II and III depict how the change in the money market at a given tax rate affects output, shifting the curves in quadrants IV and I. Alternatively, the curve in quadrant III might be thought of as originating in the position of the tax Laffer curve. Given the tax rate, the change in output and hence, tax revenue, requires a change in the money market conditions surrounding the change in the goods market. For the example of Greece, an increase in money supply by the amount of debt under balanced primary budget, i.e. by *OB′′=AA′′*, will boost spending, trigger inflation at rate $\pi$, nullify $\sigma$ due to optimism, and since $r=0$, "the" $\Delta i=OF′′$ will all be reflecting $\pi$, a constant rate of inflation. This, because the boost in spending will raise output, which, given the tax rate, say at $\tau′$, consistent with point *J* in quadrant III, will increase in turn the tax base and thereby tax revenue, shifting the tax Laffer curve outwards as depicted in quadrant IV; (failure to control for tax base changes in empirical research on this curve, produces discontinuity results). At point *A′*, we have now a balanced primary budget, zero sovereign debt, output and price level consistent with this development in public finances, and a money market consistent with this development in the goods market.

Of course, all is simple and easy on a sheet of paper. For one thing, a debt under a sovereign debt crisis is too large to deal with it at once; only gradually over a long span of time, prolonged even further due to hysteresis effects. Clark and Summers (1982), found that past work experience exerts a critical influence on current employment, which persistence of labor supply decisions is at stake with the hypothesis of a "natural" or non-accelerating-inflation rate of unemployment (NAIRU), as a medium-run proposition. Davis and von Wachter (2011) found that becoming unemployed during a recession imposes extra costs on the unemployed relative to job loss when unemployment is low. Blanchard and Summers (1986)

maintain that recession-induced unemployment affects decisively the NAIRU around which an economy will oscillate. And, Ball (1997) attributes changes in the NAIRU to stabilization policies that allow cyclical unemployment to turn structural.

Consequently, our earlier phrase herein: "output and price level consistent with this development in public finances, and a money market consistent with this development in the goods market", has to be seen from the viewpoint of a long gradual convergence to a continuously revised upwards potential output. One thing that is for sure is that this process is not a disinflation one and hence, absolved from Ball's (1997) finding that long and slow rather than short and sharp disinflations turn all cyclical unemployment to permanent. On the contrary, such an outcome should be feared if instead of a Chicago-type SFFP, austerity continued. The proposed policy is one based on the balanced primary budget rule too, but in conjunction with Friedman's rule, which within the framework of the standard neoclassical growth model, means that the adjustment process may be long and painful but temporary and promising as the economy approaches its steady-state capital-to-output ratio at an increasing rate.

TABLE 1− A 10 Percent-Rule SFFP

|       | Δ(Money Supply) | Deficit | Output | Taxes | Debt | Δ(Debt) |
|-------|-----------------|---------|--------|-------|------|---------|
| t=0   |                 |         | 1000   |       | 2700 | 2700=100 |
| t=1   | 100             | 100     | 1100   | 165   | 2635 | 97.59259 |
| t=2   | 110             | 110     | 1210   | 181.5 | 2563.5 | 94.94444 |
| t=3   | 121             | 121     | 1331   | 199.65 | 2484.85 | 92.03148 |
| t=4   | 133.1           | 133.1   | 1464.1 | 219.615 | 2398.335 | 88.82722 |
| t=5   | 146.41          | 146.41  | 1610.51 | 241.5765 | 2303.1685 | 85.30254 |
| t=6   | 161.051         | 161.051 | 1771.561 | 265.73415 | 2198.48535 | 81.42538 |

where:

| |
|---|
| 2635.00000=2700-65 |
| 2563.50000=2700-65-71.5 |
| 2484.85000=2700-65-71.5-78.65 |
| 2398.33500=2700-65-71.5-78.65-86.515 |
| 2303.16850=2700-65-71.5-78.65-86.515-95.1665 |
| 2198.48535=2700-65-71.5-78.65-86.515-95.1665-104.68315 |

From the viewpoint of the practical implementation of the proposed policy, a k-percent rule should be followed as is illustrated through Table 1, in which k=10%, the multiplier is such that output growth is 10% too, and $\tau$=15%. The debt is 170% of the GDP as was the case with Greece, and goes down by 18.5% in 6 years. Of course, a k=10% is too high, and the assumed multiplier is too low, reflecting, as the moderate-sized average tax-and-transfer rate does too, the serious social welfare intervention on the part of the government required under depression circumstances. The example does suggest the success of the proposed policy despite the considerable lengthiness of the adjustment period.

But, Greece is also a small open economy. Abstracting from international capital movements, the international reserve position of a country depends on the discrepancy between output-income and expenditure rather than on the composition

of the expenditure in terms of tradable and non-tradable goods (see e.g. Frenkel and Johnson 1976). It is well known that if the rate of output expansion exceeds that of expenditure growth by letting domestic credit expansion be lacking a little behind that in trading partners, continuous surplus will be experienced (see e.g. Johnson 1973). And, as far as Greece is concerned, continuous output expansion is proposed to which now the domestic-credit-expansion requirement should be added, being slowly relaxed towards the international rate as international capital starts coming into the country towards productive investments. Since $\Delta i = \pi$, the discount rate should also be $\pi$, which implies domestic credit expansion control through the reserve ratio.

Should a floating instead of a fixed exchange rate be followed, too? It does not matter, because: "*The adoption of rules calling for a constant rate of domestic monetary expansion equal to the trend growth rate of real output supposedly would make the flexible rate virtually as stable as a rigidly fixed rate*" (Humphrey 1976, p.21). Although, there is a "supposedly" involved in this idea, rendering it of experimental nature, it does worth adopting the proposed policy on the part of Greece under the fixed exchange regime of Eurozone, since if not anything else, this country is already in Eurozone.

## 4. CONCLUDING REMARKS

To comprehend better the appropriateness of the proposed policy for Greece, let us see it also in connection with the widespread unofficial economy in this country: "*The unofficial economy… mitigates government-induced distortions and, as a result, leads to enhanced economic activities in the official sector. In this sense, the presence of the unofficial sector acts as a complement to the official economy instead of as a substitute*" (Choi and Thum 2005, p.817). After all, the evidence: "*supports the dual economy ("Wal-Mart") theory of development, in which growth comes about from the creation of highly productive formal firms. Informal firms keep millions of people alive but disappear as the economy develops* " (La Porta and Shleifer 2008, p.275). That is, the informal sector will not be discouraging, but aiding the proposed policy, declining gradually as the fruits of policy become increasingly felt.

Table 2 − A 10 Percent-Rule SFFP with Unofficial Economy

|  | ΔM = Def | Official Output =TaxBase | Unoff Output | Tax Revenue | Debt | Δ(Debt) |
|---|---|---|---|---|---|---|
| t=0 |  | 1000.000 | 300.000 |  | 2700.000 | 2700=100 |
| t=1 | 100.000 | 1071.000+30.000 | 329.000 | 165.150 | 2634.850 | 97.58704 |
| t=2 | 110.100 | 1180.272+36.190 | 359.828 | 182.469 | 2562.481 | 94.90669 |
| t=3 | 121.646 | 1338.108+43.179 | 392.672 | 207.193 | 2476.934 | 91.73829 |
| t=4 | 138.129 | 1483.503+51.047 | 428.586 | 230.183 | 2384.880 | 88.32889 |
| t=5 | 153.455 | 1649.642+60.002 | 466.950 | 256.447 | 2281.888 | 84.51439 |
| t=6 | 170.964 | 1839.576+70.042 | 507.981 | 286.443 | 2166.410 | 80.23741 |

where: ΔM = Δ(Money Supply), UnoffOutout denotes unofficial output, Δ(UnoffOutput)=(30-t)%ΔM, and Δ(Official Output)=(70+t)% ΔM+[10+(t-1)]%(UnoffOutput); rounding to 3 decimal digits.

These considerations are illustrated through Table 2 and its comparison with Table 1. Starting from an unofficial output of 30% of the official output or 23.077%

of the total (1000+300) output, and assuming same multiplier values, (30-t)% of the change in the money stock is directed to production in the unofficial economy, which increases by the same amount, with part of it being disposed in the official economy to such an extent as to be contributing to next period's tax base by [10+(t-1)]%(UnoffOutput). The unofficial economy declines with development, contributing at the same time to retiring the debt. It is a trend based not on coercion, but on incentives, consistent with a free-market democracy. The emergence of unofficial economy consists a market failure, which coupled with the fact that coercion would reduce total output and employment, renders coercion a Pareto inferior policy choice; one which could lead to a Lipsey and Lancaster (1956) second-best at most, bound to remain just that by comparison with the slow but steady path towards the firs-best forged by incentives-based behavior…*Laissez faire…*

The only ingredient of the modern Greek political economy that has to be taken away for the proposed policy to work is political instability (see e.g. Soldatos 1991, 1993), by constitutionalising the rules comprising the policy, namely, the k-percent, balanced-budget, and no-open-market-operations (unless under acts of God) rules. To this general Chicago-Plan SFFP, equally constitutionalised should be especially for Greece the tax rates of direct and indirect taxation and social-security formulas. The alternatives are continuation of the shut-your-private-and-public-sector-down-to-pay-your-debts prescription of the Troika until society can no longer put up with it, and/or back to the sick statism that nurtured the current mess. In either case, default is inescapable.

There is one last detail left to tackle regarding the applicability of the proposed policy, namely its financing, the source of money. We know from the start of this paper that money from Eurozone, is impossible to obtain unless sweeping and hence, highly unlikely changes take place in Eurozone. So, Greece must see how by itself will determine its fortune. Much more so when its exit under the proposed policy only a nominal one would be to address the fact that: "*The sustainability of public debt* (should be) *interpreted as the result of the interaction of fiscal policy with the economic environment, and not as a statistical concept as in most of the recent literature. If debt is not to explode over time, policymakers have to respond to the changing conditions in the macroeconomic environment*" (Collignon 2012, p. 539):

Or: *Leve fit, quod bene fertur, onus* - The burden is made light when it is borne well. (Ovid; http://www.yuni.com/library/latin_7.html)

## REFERENCES

Alesina, A. and V. de Rugy (2013), "Austerity: The Relative Effects of Tax Increases versus Spending Cuts", Mercatus Center at George Mason University. Arlington, VA

Auerbach, A.J. and Y. Gorodnichenko (2013), "Output Spillovers from Fiscal Policy Output Spillovers from Fiscal Policy", *American Economic Review, Papers and Proceedings*, 103(3), 141-146.

Ball, L. (1997), *Disinflation and the NAIRU*, in: C. Romer and D. Romer (Eds), "Reducing Inflation: Motivation and Strategy", University of Chicago Press: Chicago.

Benes, J. and M. Kumhof (2012), "The Chicago Plan Revisited", IMF Working Paper No. 12/2012.

Berti, K., F. de Castro and M. Salto (2013), "Effects of Fiscal Consolidation Envisaged in the 2013 Stability and Convergence Programmes on Public Debt Dynamics in EU Member States", European Economy Economic Papers 504, European Commission.

Blanchard, O. and L. Summers (1986), "Hysteresis and the European Unemployment Problem", *NBER Macroeconomics Annual*, 1, 15-90.

Buiter, W.H. and E. Rahbari (2012), "The ECB as Lender of Last Resort for Sovereigns in the Euro Area", CEPR Discussion Paper No. 8974.

Cagan, P.D. (1956), *The Monetary Dynamics of Hyperinflation*, in: M. Friedman (Ed.), "Studies in the Quantity Theory of Money", University of Chicago Press: Chicago.

Choi, J.P. and M. Thum (2005), "Corruption and the Shadow Economy", *International Economic Review*, 46(3), 817-836.

Christiano, L., M. Eichenbaum and S. Rebelo (2011), "When Is the Government Spending Multiplier Large?", *Journal of Political Economy*, 119 (1): 78–121.

Clark, K. and L. Summers (1982), "Labor Force Participation: Timing and Persistence", *Review of Economic Studies*, 49, 825-844.

Collignon, S. (2012), "Fiscal Policy Rules and the Sustainability of Public Debt in Europe", *International Economic Review*, 53(2), 539-567.

Cottarelli, C. (2012), "Fiscal Adjustment: Too Much of a Good Thing?" *Vox,* February 8, <www.voxeu.org/index.php?q=node/7604>.

Davis, R.J. (1968), "Chicago Economists, Deficit Budgets, and the Early 1930's", *American Economic Review*, 58, 476-82.

Davis, S. and T. von Wachter (2011), "Recessions and the Cost of Job Loss", *Brookings Papers on Economic Activity*, No. 2, 1-72.

DeLong, B.J. and L.H. Summers (2012), "Fiscal Policy in a Depressed Economy [with Comments and Discussion]", *Brookings Papers on Economic Activity*, (Spring), 233-297.

Denicolo, V. (1988), "Some Analytics of the Laffer Curve: A Comment", *Journal of Public Economics*, 35, 129-130.

Eggertsson, G.B. (2009), "What Fiscal Policy Is Effective at Zero Interest Rates?", Federal Reserve Bank of New York Staff Report 402.

Eggertsson, G.B. and M. Woodford (2003), "The Zero Bound on Interest Rates and Optimal Monetary Policy", *Brookings Papers on Economic Activity* (1), 139-211.

Erceg, C.J. and J. Linde (2010), "Asymmetric Shocks in a Currency Union with Monetary and Fiscal Handcuffs", *NBER International Seminar on Macroeconomics*, 7(1), 95-136.

Faria, J.R. and P. McAdam (2013)," Anticipation of Future Consumption: A Monetary Perspective", *Journal of Money, Credit, and Banking*, 45(2/3), 423-447.

Frenkel, J.A. and H.G. Johnson (1976), The Monetary Approach to the Balance of Payment*s*, Allen & Unwin: Boston.

Gahvari, F. (1989), "The Nature of Government Expenditures and the Shape of the Laffer Curve", *Journal of Public Economics*, 40, 251-260.

Gordon, J., I. Karpowicz, S. Lanau, J. Manning, W. McGrew, M. Nozaki and M. Shamloo (2013), "Greece: Ex Post Evaluation of Exceptional Access under the 2010 Stand-By Arrangement", IMF Country Report No. 13/156.

Greenlaw, D., J.D. Hamilton, P. Hooper and F.S. Mishkin (2013), "Crunch Time: Fiscal Crises and the Role of Monetary Policy", U.S. Monetary Policy Forum, New York City.

Hicks, J.R. (1979 [1946]), *Value and Capital*, 2nd edition, Clarendon Press: Oxford.

Humphrey, T.M. (1976), "A Monetarist Model of World Inflation and the Balance of Payments", *Federal Reserve Bank of Richmond Economic Review*, Nov/Dec., 1-22

Johnson, H.G. (1973), Further Essays in Monetary Economics, Allen & Unwin: London.

Keynes, J.M. (1936), The General Theory of Employment, Interest and Money, Harcourt Brace: New York.

Krugman, P.R. (1998), "It's Back: Japan's Slump and the Return of the Liquidity Trap", *Brookings Papers on Economic Activity* (2): 137–87.

La Porta, R. and A. Shleifer (2008), "The Unofficial Economy and Economic Development", *Brookings Papers on Economic Activity*, (Fall), 275-352.

Lipsey, R.G. and K. Lancaster (1956), "The General Theory of Second Best", *Review of Economic Studies*, 24(1), 11-32.

Malcomson, J.M. (1986), "Some Analytics of the Laffer Curve", *Journal of Public Economics*, 29, 263-279.

Malcomson, J.M. (1988), "Some Analytics of the Laffer Curve: Reply", *Journal of Public Economics*, 35, 131-132.

O'Rourke, K.H. and A.M. Taylor (2013), "Cross of Euros", *Journal of Economic Perspectives*, 27(3), 167-192.

Ott, D.J., A.F. Ott and J.H. Yoo (1975), Macroeconomic Theory, McGraw-Hill: New York.

Papadimitriou, D.B., M. Nikiforos and G. Zezza (2013), "The Greek Economic Crisis and the Experience of Austerity: A Strategic Analysis",

<http://businessthinker.com/the-greek-economic-crisis-and-the-experience-of-austeritya-strategic-analysis/>.

Paphitis, N. and E. Becatoros (2014), "Greece Returns to Bond Markets with 5-year Bond, While Unions Hold General Strike", Associated Press, <http://finance.yahoo.com/news/greece-returns-bond-markets-5-133218404.html;_ylt=A0LEVztB30hTUAYADllXNyoA;_ylu=X3oDMTB0NTcya3 NtBHNlYwNzYwRjb2xvA2JmMQR2dGlkA1ZJUDIyMF8x>.

Reich, J. (2011), "Seigniorage – Where Does It Come From and Who Gets It? An Institutional Perspective on Currency Creation", 15th FMM Conference, Berlin, <http://www.boeckler.de/pdf/v_2011_10_27_reich.pdf>.

Sidrauski, M. (1967), "Rational Choice and Patterns of Growth in a Monetary Economy", *American Economic Review, Papers and Proceedings*, 57, 534–44.

Soldatos, G.T. (1991), "The Post-War Greek Economy: Politics and Economics", *Sudost-Europa: Zeitschrift fur Gegenwartsforschung*, 40, 224-238.

Soldatos, G.T. (1993), "The Interwar Greek Economy: Income Inequality and Speculation", *European History Quarterly*, 23, 359-379.

Tavlas, G.S. (1997), "Chicago, Harvard, and the Doctrinal Foundations of Monetary Economics", *Journal of Political Economy*, 105(1), 153-177.

Werning, I. (2012), "Managing a Liquidity Trap: Monetary and Fiscal Policy", <http://dl.dropbox.com/u/125966/zero_bound_2011.pdf>.

Woodford, M. (2010), "Simple Analytics of the Government Expenditure Multiplier", <http://www.columbia.edu/~mw2230/G_ASSA.pdf>.

Zarembka, P. (1968), "Functional Form in the Demand for Money", *Journal of the American Statistical Association*, 63(322), 502-511.