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In war as well as in peace: from the displacement effect to incrementalism in public expenditures

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Abstract

The paper will study the trend in public expenditure starting from the Peacock and Wiseman (1961)'s contribution known as displacement effect. In our view, the notion of displacement effect is important not for its capability to capture essentials in the mechanisms governing taxing and spending areas in public economy, but rather for what it does not explain: incrementalism in public expenditure. According to Peacock and Wiseman, wars allow governments to drastically increase expenditure without constraining government to go back to the pre-war levels once the war is over. Our main point is that the unbridled increase in public expenditure during the past half century has taken an unfortunate detour under the influence of the theory of incrementalism in public expenditures. The hallmark of this kind of policy is that, at the most, it allows governments to set limits to increases in public expenditures rather than to cut them. One could provocatively say that governments do not need scissors because they have nothing to cut. By bringing in an analysis of the US and some European governments, we demonstrate that there are two related reasons for considering the theory of incrementalism as a key player in the ever increasing public expenditure of a no-war period: an improper extension of the separation of powers to budgets on one hand allowing bureaucracies to actively increase public spending on the other. This incrementalism is responsible for post war systematic deficit financing and concomitant increases in the stocks of public debt.

Keywords

effect, incrementalism, war, well, peace, public, displacement, expenditures

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**IN WAR AS WELL AS IN PEACE: FROM THE DISPLACEMENT EFFECT TO
INCREMENTALISM IN PUBLIC EXPENDITURES**

by

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ABSTRACT

The paper will study the trend in public expenditure starting from the Peacock and Wiseman (1961)'s contribution known as displacement effect. In our view, the notion of displacement effect is important not for its capability to capture essentials in the mechanisms governing taxing and spending areas in public economy, but rather for what it does not explain: incrementalism in public expenditure.

According to Peacock and Wiseman, wars allow governments to drastically increase expenditure without constraining government to go back to the pre-war levels once the war is over. Our main point is that the unbridled increase in public expenditure during the past half century has taken an unfortunate detour under the influence of the theory of incrementalism in public expenditures. The hallmark of this kind of policy is that, at the most, it allows governments to set limits to increases in public expenditures rather than to cut them. One could provocatively say that governments do not need scissors because they have nothing to cut.

By bringing in an analysis of the US and some European governments, we demonstrate that there are two related reasons for considering the theory of incrementalism as a key player in the ever increasing public expenditure of a no-war period: an improper extension of the separation of powers to budgets on one hand allowing bureaucracies to actively increase public spending on the other. This incrementalism is responsible for post war systematic deficit financing and concomitant increases in the stocks of public debt.

1. Introduction.

The notion of displacement effect popularized by Peacock and Wiseman (1961) explains only one type of increase in public expenditure: the exceptional one resulting from a temporary disregard of the linkage between revenues and expenditures incident to extraordinary events such as wars.

Long-established scholars, such as Wagner (1883), Nitti (1903), Peacock and Wiseman (1961), Baumol (1966), Niskanen (1971), Borcharding (1977), and Olson (1992) made valuable contributions on the nature and trend of public expenditures. Yet illuminating as these contributions have been, we think that to Buchanan (1968)'s influential theory on the demand and supply of public goods goes the credit for analyzing public expenditures (public goods) in a market-like logic, indeed a somewhat particular market such as the political market.

Accordingly, Buchanan 1968's book¹ is not only crucial in this paper to carry out a comparison of public expenditures and goods with private expenditures and goods in terms of opportunity costs, but it is just as crucial for us to contrast the cost-benefit analysis. But there is more at stake. The demand and supply logic allows also the distinction, impossible otherwise, between the explanation of an increase in public expenditures incident to the demand side (responsive government) and the explanation of an increase in public expenditures incident to the supply side (excessive government). The former is explained in the following section to explain the incremental increases in government spending in providing public goods. The latter is the presupposition for explaining the impact of bureaucratic behavior on the increase in public expenditures¹ with which we will deal with in section 3.

The amount of public goods that are provided depends on the advantages that bureaucrats and politicians are expecting. It is, thus, the distorting power of both politicians and bureaucrats along with the financing mode of the expenditures. It is in such a scenario that incrementalism in public expenditures thrives.

Falling into the lineage of classical scholars best epitomized by Wagner (1893) and Nitti (1903), increases in public expenditures can be associated with economic reasons, but equally important, with political reasons as illustrated by the theoretical accounts of the median-voter and pressure groups.

This paper deals with an aspect of the trend in public expenditures that is not examined by Peacock and Wiseman (1961): the increase in public expenditures in peace time. Financing public

¹ J.M. Buchanan (1968).

expenditures resorting to debt in post-war periods has long been and still is the dominant pattern in modern democracies under the influence of the presuppositions of Harvey Road. The Keynesian fiscal policy has not been explicitly designed for war periods, yet it should be noted that the urgency of the war logic has given an instrument of enduring usefulness in applying it in peaceful periods. Through deficit and debt financing the displacement effect lost its exceptional binding force and came to be accepted as a permanent phenomenon in the justification of the increase in public expenditures. Our contention here is that the increase in public expenditures has much deeper and more general reasons than those envisioned in the general theory.

Crucial for this trend of thought is that the malfunctioning of the market is a consequence of sudden or unexpected shocks in the short run. The most significant element is instead a changing in incentives, which *in primis* may be associated with the shifting of the decision-making power to lower classes as a consequence of the universal suffrage. But most of all it is the separation of powers that has put the decision-making power in the hands of budget-dependent voters. When extended to governments, the separation of powers shows all its ambiguity. So interpreted, the Keynesian theory can be considered as an undue extension of the liberal theory of the separation of powers to budgets. In this way, not only is the separation of expenditures and revenues legitimized as a general rule, but separation is compulsory. The consequence is that any urgency and emergency test as required by constitutional provisions on matters of additional expenditures is disregarded or meaningless².

Hence, extended to budgets, the theory of the separation of powers is transformed into its opposite. In fact, the separation of powers, which was the cornerstone of liberal democracies, has become a tool used by governments to spend without limits, which means a disfigurement of the liberal logic. The main result is that benefits are divorced from costs.

This equals to the enactment of a procedure that is alien to the demand and supply logic and *a fortiori* to the public sphere where costs and benefits are spurious in that they are the result of government's intermediation and not of a genuine demand and supply as in market relationships.

Divorcing benefits from costs, with the justification of separating powers, entails a separation between the buying and selling actions, while a sensible separation should be between the individual who buys and the individual who sells. While buying and selling is the equilibrium point of separate budgets in private economy, it is a single point of a single budget in public economy. Our contention is that if costs are separated from benefits, the budget simply disappears.

² On this point, see here below.

2. Incrementalism

The divorce of the two sides of the fiscal account involves two negative consequences, one, is the already mentioned separation of costs and benefits, which requires the abandonment of the concept of opportunity cost, the other, tightly linked to the first, is the lack of a useful tool explaining the trend of public expenditures.

Such treatment may be proper exceptionally, but it is hardly a fit mechanism for running a prudent financial conduct. Yet, in such circumstances politicians and bureaucrats flourish. When the logic of incrementalism becomes a widely accepted condition in practice, even if not in theory, “decrementalism” is looked on with aversion by politicians and bureaucrats. Not only, incrementalism coupled with bureaucratic inertia leads to a further amplification of public expenditures. What is the general implication coming from this? The consequence is that the trend in public expenditure is not a succession of peak and plateau sequence (displacement effect), but of a slow and gradual increase, which is less perceived under the camouflage of technicalities such increase in money terms or per capita. All of this is not without some underlying substance. The analysis switches from an explanation of an increase in public expenditure to the measuring mode of such an increase, or increase compared to what?

In this setting, a new expenditure proposal is by definition a proposal of an additional expenditure. The reason is clear. Because of its information advantage, bureaucracy is able to have the new proposal passed while keeping the old expenditure (bureaucratic zero costs). Conversely, to taxpayers such costs are positive. But the fiscal illusion coming from deficit financing does not turn such costs into political costs, that is, into taxes of which governments are accountable.

What may be called a zero-cost paradigm is not limited to specific expenditures, but could be extended also to institutional reforms. The practice of adding new offices, or even new institutions, still keeping the old ones, is a glaring example of incrementalism.

In a nutshell, incrementalism allows a duplication of services.

Almost all reforms introduced in Italy find their justification under the umbrella of incrementalism. For example, regional governments, prescribed in Articles 114 to 133 of the 1948 constitution, were implemented by the Parliament, only in 1970 under the push of creating a new regional bureaucracy, where competences were transferred from the central government, but new personnel was hired by the regional government. Of the same tenor is the solution found to solve the

problem of the huge number of teachers in elementary school who risked losing their jobs due to a decline in fertility rates. The solution was found by introducing two or even three teachers per class instead of the previous one. There is more. In recent Italian Financial Stability Acts still appear expenditures for useless entities that had been shut down some twenty years ago.

The general rule of incrementalism is that all expenditure proposals are welcomed by both government and bureaucracy provided that they be additional and that do not cancel previous accounting items. One could well say that incrementalism is the opposite of the Schumpeterian entrepreneur's logic: creating without destroying. This is descriptive of how one can be a dis-entrapreneur³

In a setting characterized by separation of costs from benefits, all new expenditures would pass the necessity and urgency test without setting any limit to the expenditure incrementalism in EU's countries. The Maastricht Treaty provisions set limits to increment of new expenditures within the 3% requirement, but it does not envision cuts to expenditures. This can be viewed as a partial limit to incrementalism and it does not entail either the reconciliation of the two sides of the fiscal account or the balanced budget requirement.

Within certain limits, the Maastricht Treaty lessens budget discretionary power of the EU governments and helps reducing governments' power to separate expenditures from revenues. This equals to say that the Maastricht Treaty makes incrementalism costly. However, as the ongoing crisis has evidenced, governments have found loopholes to avoid present costs by cutting investment expenditures or by creating *ad hoc* districts and public companies, such as local public transportation, which are formally independent from governments, but in reality they are quibbles to avoid budget constraints⁴. This is revealing of the fact that in perspective the incrementalism in public expenditures is apt to become politically costly. And if governments will make use of different technologies just to escape taxpayers' controls, they tread on dangerous ground that will lead to any good. As Brennan (2004) has emphasized, the regulatory path could open up much more promising scenarios to governments in a context where the fiscal euro is dear. The immediate consequence is that financing incremental public expenditures requires increasing costs, public debt service included. Resorting to regulation would turn governments into a sort of brokers acting on behalf of pressure groups rather than citizens-taxpayers.

In order to explain these incremental monotonic temporal increases in public expenditures using

³ On this see Eusepi & Wilson (2008).

⁴ On this, see V. De Ruyg (2013), P. Salin (2013) and J. Gokhale, E. Partin(2013).

Buchanan's (1968) supply and demand framework, we adapt Romer's (1987, 1990) endogenous growth model of technological change. This extension focuses on the expanding provision of public goods and services in order to promote capital formation in physical (infrastructure), human (health and education) and social capital. Importantly, as mentioned, the incremental provision of these new public goods and services needs to preclude Schumpeterian creative destruction in that they do not displace current public goods and services: this non-reversible creative process can be thought of as new publicly provided projects or separable extensions of existing public projects. Indeed the new public goods and services augment the diminishing marginal productivity of private capital, creating long run endogenous growth. That is, they effectively remove the need for technological progress or put another way, the public goods and services, and their externalities, can be viewed as technological innovations. These innovations act as incentives, creating demand by the private sector for these public goods and services (hereafter referred to as "public goods").

We demonstrate this with the private sector production function for an i^{th} competitive firm:

$$y_i = ak_i^{1-\alpha} \sum_{j=1}^{\lambda} g_{ij}^{\alpha}.$$

The firm's real output per worker y (dropping the subscripts where there is no ambiguity) is a function of real private per worker capital stock k and the λ publicly provided real public goods g_j . To focus on the role of public goods we assume the factor share of the public good $0 < \alpha < 1$ and the technological progress parameter a , apply equally across all firms. The firm's production function exhibits diminishing marginal productivity for each j^{th} public good $\partial y / \partial g_j = \alpha ak^{1-\alpha} g_j^{\alpha-1}$ ($j = 1, \dots, \lambda$). However since the public goods are by definition nonrival and nonexcludable in employment by the firm, we can assume that all the λ public goods are additively separable. This removal of the conventional assumption of substitutability means the marginal product of each will be independent of all others. So each new public good will not affect existing public goods, nor make them obsolete, as we require.

The endogenous growth comes about by the firm's production function demonstrating increasing returns to scale, easily seen by substituting the average $\bar{g}_j = \frac{1}{\lambda} \sum_{j=1}^{\lambda} g_j$ into the production function to give $y = ak^{1-\alpha} \lambda \bar{g}_j^{\alpha} = ak^{1-\alpha} (\lambda \bar{g}_j)^{\alpha} \lambda^{1-\alpha}$. The Hick's neutral production has constant returns

to scale in real private capital per worker k and the $\lambda \bar{g}_j$ public goods, with real per worker output y further increasing by the factor $\lambda^{1-\alpha}$, since $1-\alpha > 0$ for the firm. These additional benefits come about by the widespread availability of public goods, and their externalities, to all firms.

The private competitive firm's profit maximizing demand for the j^{th} public good is obtained by taking the real price for the public good p_j , measured in units of real output, and setting it to the marginal product. The competitive outcome would equalize the marginal products across all μ firms to the price, which would also be equal to the assumed constant marginal and average opportunity cost of production κ of the public good.⁵ But since the public good is by definition nonrival and nonexcludable in employment, the price each firm will pay will reflect its own demand curve. The sum of all the marginal product curves for the μ firms for the j^{th} public good $\sum_{i=1}^{\mu} \alpha a k_i^{1-\alpha} g_{ij}^{\alpha-1}$ will therefore be equal the total price paid. Assuming a social planner sets $p_j = \kappa$ then the average price a firm will pay is κ/μ , with some firms paying less (even nothing for free riders) whilst others will pay more, depending on the strategic behaviors of these firms. In any case, provided there are less than $\mu-1$ free riders, all firms will pay less than the price p_j , that rules in the absence of nonrival and nonexcludable employment.

The solution for the average firm's demand curve for the j^{th} public good is therefore $\bar{g}_j = \bar{k} \left[\frac{\alpha a}{\kappa/\mu} \right]^{1-\alpha}$ where $\bar{g}_j = \frac{1}{\mu} \sum_{i=1}^{\mu} g_{ij}$ and $\bar{k} = \frac{1}{\mu} \sum_{i=1}^{\mu} k_i$. Demand, on average, is positively affected by the firm's real capital per worker k , the public good factor share, α , the technological progress parameter a and the lower average price κ/μ paid for the public good. More importantly, demand is greater than it would be in the absence of nonrivalry and nonexcludability by a factor of $\mu^{1/(1-\alpha)}$, which can be significant for large number of firms μ with a relatively large public goods factor share α .

Let us now include households and move from spatial allocations to consider temporal household allocations of per worker consumption C_t over time t . Assuming the number of workers

⁵ If a public enterprise acts as a monopolist, then maximizing profit $(p_j - \kappa)g_j$ gives the price solution $p_j^m = \kappa/\alpha$, which is greater than the social planner price $p_j^sp = \kappa$. The higher price reduces demand g_j^m for the public good, relative to the demand g_j^sp associated with social planner's set price, that is, $g_j^m = k \left(\alpha \alpha^2 / \kappa \right)^{1/(1-\alpha)} < k \left(\alpha \alpha / \kappa \right)^{1/(1-\alpha)} = g_j^sp$ for $0 < \alpha < 1$.

increase by the rate γ_n then the budget constraint for a household is $\dot{c} + \dot{k} = (1 + \omega - \tau)y - \gamma_n k$ where disposable income $(1 + \omega - \tau)y$ comprises wage and asset income supplemented by government transfers, represented here as a fixed proportion of income ω , less tax payments according to the marginal tax rate τ . The Hamiltonian maximization of household utility $v = \int_s^\infty u(c_t) e^{-\rho(t-s)} dt$ with time preference ρ , subject to the budget constraint, gives the well-known solution $\gamma_c = \dot{c}/c = \phi(r - \rho) + (1 - \alpha)\gamma_\lambda$ where $\dot{\lambda}/\lambda = \gamma_\lambda$. The other growth relationships can be derived from the production function and the household budget constraint. Taking logs and differentiating the production function with respect to time gives $\gamma_y = (1 - \alpha)\gamma_k + \alpha\gamma_\lambda$ where $\gamma_k = \dot{k}/k$. Differentiating the budget constraint shows that $\gamma_c \propto (1 + \omega - \tau)\gamma_y$ with the proportion affected by the growth in capital formation γ_k .⁶

These relationships show the endogenous growth of the economy is driven by the incremental increases in the provision of nonrival and nonexcludable public goods in response to the demand for these goods by private sector competitive firms. Whilst this does not support Wagners law for $\alpha < 1$, it does explain the observed incremental increase in fiscal spending, in contrast to the Peacock and Wiseman displacement effect.

Having said this, the monotonic incrementalism will be bounded by the fiscal budget which will be limited according to the intertemporal fiscal budget constraint:

$$\int_t^\infty (p\lambda\bar{g} + \tau y_t) e^{-\int_t^\infty r ds} dt \geq b_0 + \int_t^\infty (\kappa\lambda\bar{g} + \omega y_t) e^{-\int_t^\infty r ds} dt$$
 where b_0 is the inherited public debt and p is the average price for the $\lambda\bar{g}$ public goods. For the case of a social planner we have been considering, the public goods are revenue-cost neutral since the revenue from the sales of the public goods λp equals the costs of provision $\lambda\kappa$. However, as demonstrated, the growth promoting demand for public goods by the private sector provide strong incentives for the government to increase their provision.

There are also pressures to reduce prices of public goods to further implement their take-up by the private sector for these same reasons, and unfortunately, governments are not known for acting as Pareto principled social planners. Indeed, the social and political difficulties associated with collecting

⁶ The economy does have a steady state growth path and this can be shown by using the property $\dot{\lambda}/\lambda = \gamma_\lambda$ so $\lambda_t = e^{\gamma_\lambda t}$ to give: $\hat{y} = y\lambda^{-(1-\alpha)} = ye^{-(1-\alpha)\gamma_\lambda t} = ak^{1-\alpha}(\lambda\bar{g}_j)^\alpha$.

revenues from public goods are also well understood, particularly if free riding is occurring. Added to this is the Ricardian equivalence justification for governments to substitute debt for tax revenues. These motivating factors to increase net public spending add to existing budget deficit pressures culminating from any long term structural imbalances between fiscal budget tax revenues and transfer payments, for a government that may also be inheriting high levels of debt.

The widely publicized empirical research by Reinhart and Rogoff (2010) shows that for a sample of 20 developed economies, a government debt to GDP ratio of 90 per cent or more is a threshold benchmark in that higher levels of debt are associated with the switching of real economic growth rates from positive to negative.⁷ This simple and intuitive stylized fact was widely reported and influenced austerity policy proposals involving the chair of US House Budget Committee and senior economists of the European Commission. However, errors were found by University of Massachusetts PhD student Herndon, and when corrected, as reported in Herndon, Ash and Pollin (2013), the average growth rate for the countries, whilst much less, was a small positive value for countries having debt ratio of 90 per cent or more.⁸ Reinhart and Rogoff have responded and the important debate continues.⁹

The consequences of accumulating public debt for economic growth can be seen by the derivative of the intertemporal budget constraint $\dot{b} = (\kappa - \rho)\lambda\bar{g} + (\omega - \tau)y + rb = d$ where d represents the total budget fiscal deficit. Dividing through by real output, noting that $\dot{b}/y = (\dot{b}/y)(y/y) = (\dot{b}/y)\gamma_y$ and integrating gives Wickens (2011) fiscal sustainability approximation:

$$\frac{\hat{b}}{y} \geq \frac{1}{\gamma_y - r} \frac{d}{y}$$

This shows the requirements for the right hand side to not be greater than the left hand side maximum (capped) allowable \hat{b}/y debt to output ratio. Economic growth γ_y must therefore be sufficient to cover the real cost of public debt r .

As an example of the usefulness of this relationship, the US Congressional Budget Office (CBO) estimates that the budget deficit was around 5 per cent of GDP in 2013 and real GDP is to grow

⁷ This research is mostly for the pre-global financial crisis period, 1946 to 2009.

⁸ The errors were found by University of Massachusetts PhD student Herndon, when he could not replicate the Reinhart and Rogoff (2010) results, when asked by his supervisors as a research exercise. The highly respected economists were philosophical until it became personal when attacked by Krugman in 2013 for promoting austerity measures and creating unemployment misery in the US and southern Europe.

⁹ The other important methodological issue here is the assumed direction of causation from high levels of debt to slower economic growth. As all acknowledge, slower economic growth could lead to higher levels of public debt as governments attempt to stimulate growth.

on average at 3.5 per cent to 2017. A negative real rate of interest of say around 1.5 per cent means the denominator $0.035 - (-0.015) = 0.05$ gives the ratio $0.05/0.05 = 1.0$ meaning the debt to GDP ratio will be around the 100 per cent range. A 10 per cent reduction in the deficit to GDP to 4.5% will only reduce the ratio to 90 per cent. Whilst the deficit to GDP ratio peaked at 9 per cent in 2009, the CBO predicts it will fall to 2.5 per cent by 2017. If this occurs then the debt to GDP ratio will fall towards the 50 per cent benchmark.

The problem with all of this is the political and social difficulties of achieving such a reduction in the deficit to GDP ratio. Auerbach and Gale (2009), using data prior to the Great Recession, estimate the US primary fiscal deficit needs to be reduced by 9 per cent of GDP for the intertemporal fiscal budget constraint to hold. The outlook is no better with significant predicted increases in the US dependency ratio causing tax revenues to fall relative to increasing social welfare payments for longer living retirees (who will increasingly need very expensive publicly funded medical treatments). Romer (2012) puts all this into perspective by comparing the 9 per cent reduction requirement with US current federal total revenues, which are around 17 per cent of GDP. Any projected offsets like expected delayed retirement and future productivity gains, will not be sufficient to bring the US fiscal budget back into balance.

The relationship also implies the possibility for a government to inflate debt away, with higher inflation reducing the debt ratio. Substituting gives:

$$\frac{\hat{b}}{y} \geq \frac{1}{\gamma_y + \pi - i} \frac{d^p}{y}$$

so that increases in the inflation rate greater than offsetting increases in the nominal interest rate i , will decrease the debt to GDP ratio. Sims (2013) argues that the potential for higher inflation and debt comes not from the unprecedented recent expansion of central banks' balance sheets in response to the global financial crisis and the Eurozone debt problem, but from the fiscal theory of the price level (FTPL). That is, central banks now pay interest on their reserve deposits and hold long term government debt. In response to higher inflation a central bank following a Taylor rule will increase the nominal cash rate sufficiently to ensure an increase in the official real rate and real rates on substitutes, including government debt. Governments of high public debt economies are likely to issue more debt to cover the increasing servicing costs and this may actually increase inflation if the private sector willingly takes up this additional debt. This reduces the effectiveness of monetary policy to the extent

this inflationary effect offsets the deflationary reduction in bank lending and real economic activity. In so doing, governments will have more scope to at least partially inflate their debt away.

The demographic, debt and possible inflationary pressures also apply in varying degrees to Europe and Japan. The southern European countries are experiencing the debt hangover of an unprecedented fiscal spending binge that will take at least a generation to correct. The slower economic growth and possibly higher long term real interest rate predictions will continue to put upward pressure on the debt to GDP ratios for these countries. Added to these trends is the asymmetrical effects of the business cycle whereby increasing fiscal deficits during below-trend downturns are not reversed with fiscal surpluses in periods of above trend growth. These short run incentives add to the monotonic increases in government spending and public debt, and are distinct from the Peacock and Wiseman explanation.

We also need to keep in perspective the role of demand for public goods. Carving out a prominent role for the demand brings into sharp focus competition in the political market and the connected recognition of government as a responsive agent that is accountable to the median voter. The burden of our argument is that this situation is contra-factual and presupposes a “mythical” decision-maker. The median voter hypothesis, however, would run counter any form of incrementalism in public expenditures since incrementalism is a result of bureaucratic behavior. We may say, then, that it is exactly the bureaucracy’s primary role at the core of the failure to attain spending cuts¹⁰. The fact is that spending cuts would produce a reduction in the provision of public goods and not in bureaucratic rents. Against this background, we suggest, the most appropriate way to view governments is as extremely big.

But the theory of pure Samuelsonian public goods bears mention here. What is most distinctive about this theory is the relatively less important role of individual demand, since it is assumed that anyone would evaluate public goods positively, none excluded. However, limiting our analysis to the supply side only, it might not limit its explanatory power unless we face a context of mixed public goods. As Arthur Seldon has shown for 1980s’ UK around 8 per cent of public goods are Samuelsonian.

The real interest rate is also important and we have glossed over its role, particularly in relation to the rate of time preference ρ and the real return to public goods. The transversality condition of the household utility maximization requires the real rate of return r to be larger than ρ in order to induce

¹⁰ See V. De Ruyg (2013).

the Ricardian households to bring forward some future consumption. This is required to spread the continuing endogenous growth benefits of the productivity increasing provision of public goods. The real return to public goods also needs to be considered more closely in terms of dropping the strong assumptions of constant and average marginal cost \mathcal{K} , along with the passive government supply of these public goods. Up to now, there has been no real modeling of supply, only their provision to meet the private sector demand. This will be considered in the next section in terms of disconnecting the two sides of the fiscal account. The breaking of the link between costs and benefits will allow the supply side behavior of government bureaucracies to incrementally increase government spending and systematically increase debt over time.

3. A Model of the Separation of Powers and Public Budgets.

The threefold separation of powers developing along a horizontal dimension is now over three centuries old, its origins dating back to Montesquieu. Yet, this familiar setting has increasingly become a powerful tool around which centralized governments exert their authority through a dictator à la Wickseil. To explore whether this dictator may have a benevolent or malevolent drive is irrelevant here, the fact remains that the horizontally divided power, ultimately, guarantees only against invasions of powers or competences. Simply put, this separation is a landmark provision guaranteeing that the legislator is not at once government and judge and that the two institutions move along separate tracks. The direct consequence is that as long as governments do not cross their boundaries and operate within the limits set by the law, the problem, from the viewpoint of limits, is solved, or better, it is inexistent. Yet, the whole matter is not so smooth. In fact, if we move beyond this simplistic view we will be able to highlight that this approach misses much of what is critical about a real separation of powers: the separation of fiscal power among different tiers of government. This point provides the entry into our analysis that sees the separation of powers tightly associated with balanced budgets.

What the standard terminology labels as horizontal separation of powers is in our interpretation vertical in nature. Why is it that scholars have come to rely on the horizontal separation of powers? The answer can be found in the monolithic view of the state. Indeed, treating government as a political monopoly not only does not ensure that the budget is kept in balance, but gives lesser visibility of all intergovernmental relations.

The existing institutional framework in Italy and in general in Europe, however, proves remarkably resistant to change. The preservation of a monolithic centralized government creates a complex interaction with the networks of governments or, better, many levels of government on budgetary matters, especially those regarding budget responsibility that falls entirely on central government. Up to now, this situation has encouraged central government to infringe the balanced budget rule unless constrained by constitutional provisions. And even in this case, the efficacy of this provision is anything but guaranteed either in Italy or in other countries, including the US¹¹.

The point becomes more pervasive if we look at it more closely. The Keynesian idea that all levels of government, with the exception of the central government, have freedom to spend, but are not required to tax, introduced the twisted and distorted practice of keeping the two sides of the fiscal account divorced.

In what sense, does the separation of the two sides of the fiscal account differ from the classical threefold horizontal separation of powers? Why are there separations that seem to take even opposite meanings? The answer is very simple: the separation of the two sides of the fiscal account of the budget does not involve the separation of responsibilities. Hence, it is not a separation of powers as commonly termed, but a centralization of powers through which governments are allowed an absolute power to spend. Spending at no cost leads, of course, to a widening of powers and to a fraying effect upon responsibility. Disconnecting the two sides of the fiscal account, of course, implies the recognition, or even the right, of insolvency although its practicability, or justification, requires a moral foundation that runs counter to that of the individuals and to the nexus between demand and supply in the market¹².

The political economy model of the separation of powers we develop here has three interdependent components. The first extends Buchanan's supply and demand analysis "upstream" in terms of competing demands by numerous government bureaus for the relatively limited supply of fiscal receipts, to fund their proposed new public goods projects. Central to this view of the constrained supply of public goods is the competition between the public sector bureaus. The neoclassical approach to competition may also apply here in terms of Friedman's (1954) most efficient firms surviving and driving out the Schumpeterian (1961) less innovative. Ferguson (2008) extends this to Darwinian natural selection of financial institutions competing for scarce resources and in doing so leading to the more efficient financial intermediaries surviving and the unsuccessful failing.

¹¹ There is plenty of evidence that deficits have strong survival value in democratic regimes, even despite constitutional rules to the contrary. Among the 50 American states, for instance, only Vermont lacks a balanced budget requirement. Yet only five or six of those states presently operate with balanced budgets. See R.E. Wagner (2012).

¹² See in general J. M. Buchanan (1968). For the specific impact between morals and market see J. M. Buchanan (2009).

Is this a reasonable description of the observed behavior of bureaus' and their employees in the public sector? Whilst some bureaus and public servants may act competitively, some do not. The modeling of the conflict of self-interest versus collective good has been considered by Johnson *et al.* (2013) and others. They argue that a distinction needs to be made between *group selection* and *individual selection*. Group selection maintains that individuals making up the group, may give up personal freedoms by cooperating to promote the group's survival. So whilst the bureau is made up of individuals, they may compete as a group, rather than as individuals. The theory of multi-level selection can manifest itself in terms of individuals complying with the governance and "corporate" strategy of the bureau, that is the prevailing "culture", and this may increase to respond to fierce competition. It allows for some competition between individuals within the group in order to make the bureau more competitive and for individuals to self select other bureaus that better reflect their welfare functions.

The *principal-agent* and *moral hazard* type problems can result from intense competition between bureaus for scarce resources increasing the incentive for welfare reducing behavior including discriminatory and fraudulent actions, take-overs, intellectual theft and even sabotage. The culture of the bureau will evolve over time and respond to changes in competitive conditions. In this sense, less competitive bureaus do not necessarily need to close down, rather they need to culturally adapt. This process of introducing (emulating) better practices and ideas at the expense of outdated procedures is the dynamic process of *cultural natural selection*.

This multi-layer approach allows for complicated models of individual and collective competition and cooperation that is richer than Adam Smith's *invisible hand*. It also allows for a spectrum of diverse public sector behaviors to finance the increasing government spending on new public goods projects.

The second debt component of our model is based on Fisher's (1933) four identifiable phases in the psychological motives for going into debt: (a) to generate substantial gains in future income, (b) to sell at a profit and realize capital gains, (c) to recklessly promote "...taking advantage of the habituation of the public to great expectations" and (d) to develop "...downright fraud, imposing on the public which has grown credulous and gullible." Fisher's first income generation motive applies to the public sector in the form of bureaus' attempting to increase (or maintain) their budget in the zero-sum competitive bidding process for allocating funding and resource, given the limited tax receipts. Fisher's second capital gain motive attempts to circumvent the budget constraint by offsetting increasing debt due to ongoing budget deficits with sales of public assets. Whilst this is increasingly becoming an

option for desperate governments, it will not be considered here. However we cannot unfortunately rule out the possibility of the third and fourth phases.

Given these increasing competitive pressures faced by bureaus, we must therefore recognize the opportunity for the overestimation of expected benefits and under estimation of expected costs of new projects. That is, in the inflated real return expressed as the ratio of benefits to the costs of providing the new public goods. The present value of government provision of the λ public goods in our model is given by $v = \kappa(\mu - 1)\lambda\bar{g}\int_t^\infty e^{-\bar{r}t} dt$ where $\bar{r} = \frac{1}{s-t}\int_t^s r_i di$ is the average real rate of return over a large finite time period t to s . Setting this equal to the average cost of production $v = \kappa$ and substituting

$\lambda\bar{g} = \lambda\bar{k}\left[\frac{a\alpha}{\kappa/\mu}\right]^{1-\alpha}$ gives the average real return as the benefit-cost ratio:

$$\bar{r} = (1 - \mu)\lambda\bar{k}\left[\frac{\alpha a\mu}{\kappa}\right]^{1-\alpha}.$$

Clearly the average real return is higher the larger is the externality effect λ , the average stock of induced private capital \bar{k} , the factor share of public goods α , technology a , and the lower is the average cost of public goods production κ . Since all of these are estimates (in present value terms), then any can be incorrect. There is also the well known strategy of adjusting realized incorrect forecasts still providing a positive real return when the costs to date are treated as sunk costs.

Another important issue is deciding on a social discount rate. Fisher (1930) argued the need to re-examine benefit-cost assumptions if the stream of net benefits is initially negative during start-up, moving to positive during the life of the project, and then becoming negative towards the end. In practice, the internal rate of return solution yields two roots, which form the limits to the range the project has positive net present value. Provided the real roots are unequal, a discount rate above the upper valued root provides relatively more weight to the early negative net present values, sufficient to make the project uneconomical, whereas a rate below the lower bound root weights the later negative values. This possibly wide range of possible discount rates gives discretionary scope to the bureau. It would not be surprising for the selected rate to mirror the optimism of the bureau's bid, consistent with the private sector firm's demand for the public good.

The third and final component of our political economy model of the supply of public goods questions the widespread assumption that the social rate of discount is exponential. Although this was

central to Ramsey's (1928) seminal intertemporal maximizing model, he is known to not support or believe in exponential discounting. Indeed its inclusion was originally axiomatic in basis and has endured purely because it provides steady state (endogenous) growth solutions. Unfortunately this quest for mathematic purity conflicts with the large body of evidence that is now available on human and (invertebrate) animal behavior (*vide* Ainslie (2005) and Gowdy *et al.* (2013) for extensive reviews). Studies based in the disciplines of biology, neurology, zoology, psychology, behavioral science and economics show clear individual preferences for the present, impatience and temptation, resulting in observed impulsive behavior.

The future is discounted in complicated and time varying ways which breaks the time consistency constraint so that individuals cannot be characterized as optimizing, representative Ricardian agents. Indeed Thaler (1981) shows that people tend to discount a one period delay more heavily in the immediate future than in the distant future. This behavior requires the discount rate to be variable and the human and non-human animal evidence supports forms of hyperbolic discounting. Strotz (1956) models this type of discounting providing dynamic inconsistency as individuals revise their optimal decisions for each subsequent time period. This can be represented in our model by setting the household setting the time path of consumption to optimize the instantaneous felicity function according to:

$$v^s = \int_s^{\infty} u(c_t) e^{-[\rho(t-s) + \varphi(t-s)]} dt$$

where s is the current time and $\varphi(t-s)$ is a function of time preference, in addition to the standard rate of time preference $\rho(t-s)$. The solution for the path of consumption becomes $\gamma_c = \dot{c}/c = \phi[r - \rho - \varphi'(t-s)] + (1-\alpha)\gamma_\lambda$ which depends on the preference function φ and importantly on the ever-changing time s .

These additional motivating factors further complicate the involved process of selecting an appropriate social rate of discount, $r - \varphi'(t-s)$ for the supply of new public projects. Moreover they reflect the impatience of bureaus to provide public good by discounting the future by more. Given the demand from the private firms for these public goods, the bureaus' behavior is really mirroring the private sector impatience. These factors affect the present value estimates of the costs and benefits of possible fiscal spending projects.

4. Conclusion.

A well-known neoclassical model was adapted in section 2 to explain that endogenous growth is driven by the incremental increases in the provision of nonrival and nonexcludable public goods in response to the demand for these goods by competitive firms in the private sector. In doing so it details the observed incremental increase in fiscal spending, in contrast to the Peacock and Wiseman displacement effect. The intertemporal fiscal budget constraint is not binding due to the growth promoting demand for public goods by the private sector providing strong incentives for the government to increase their provision. This is compounded by the difficulties in collecting revenues, particularly in the presence of free riding, and the justification of the Ricardian equivalence theory for governments to substitute debt for tax revenues. The ensuring accumulating public debt from the temporal structural budget deficits in many developed countries will require significant reductions in public deficits coupled with ongoing strong economic growth. There are real risks of desperate governments inflating public debt way in the future.

Section 3 presents a political economy model of the separation of powers which comprises three interdependent behaviors affecting government spending in the form of the supply of public goods. The first extends Buchanan's analysis to competing demands by numerous government bureaus for limited funds for their proposed new public goods projects. The complex multidimensional organization of governments involves group and individual Darwinian survival selection processes allowing a range of competitive and cooperative behavior between individuals and groups within and across bureaus. Intense competition between bureaus for scarce resources increase incentives for unethical behavior and the cultural selection of the bureau will evolve over time according to the need to culturally adapt in order to survive. This allows diverse public sector behaviors of individual and collective competition and cooperation to finance the increasing government spending. The second component of the model is based on Fisher's (1933) motives for going into debt, which include opportunistic and even exploitative behaviors. There is the possibility of inflating the real return of proposed new government spending by overestimating expected benefits and under estimating expected costs of new public goods projects. The lack of consensus on appropriate social rates of discount from a wide range of possible discount rates gives further discretionary scope to the bureaus. The third and final component acknowledges the extensive evidence from the medical, behavioral and social sciences that individuals preferences can vary over time, allowing for impatience and impulsive behaviors. The future is discounted in

complicated and time varying ways, that breaks the time consistency constraint of the ubiquitous use of the exponential social discount rate. This explains how Bureaus will have incentives to discount the immediate future by more in calculating the net benefits of the supply of new public projects.

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