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Soldatos, Gerasimos T.

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# On the Religion-Public Policy Correlation

Gerasimos T. Soldatos

American University of Athens, 15232 Athens, Greece, soldgera@yahoo.com

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## Abstract

The interplay between religious and political authorities has been commonplace and study subject of political science. The interplay between politics and economics has been commonplace too, and the focus of political economy. That is, politics emerges as the link between religious and economic matters. This paper tries to rationalize analytically this link between religion and resource allocation through the religion-public policy correlation. It is found out that such a correlation is welfare-enhancing unless fanaticism forces society to choose between Pareto efficiency under a fundamentalist minority dictatorial rule on the one hand, and the broader socioeconomic aspirations of the majority of people on the other. Yet, fundamentalism is expected to subside in the long-run to the extent fanaticism is the result of an emotional outburst.

JEL Classification: D7, H4, Z12

Keywords: Resource allocation, Public policy, Religion

## 1. Introduction

Chaney (2013), and Grigoriadis and Torgler (2013) are two recent of the few attempts towards the empirical documentation of the hypothesis that religious leaders exert political power through religion-public policy correlation reflected in the resource allocation regime. This paper presents some theoretical arguments towards this direction. It is in general one more addition to this hypothesis as advanced lately by Israel (2006) and North, Wallis, and Weingast (2009). Israel relates characteristically the vigorousness of oppressive regimes with actions on the part of religious leadership, Grigoriadis and Torgler (p.1): “*find strong support for the proposition that collectivist norms and an institutional religious identity enhance positive attitudes towards central government*”, and Chaney confirms econometrically this nexus between religion and politico-economics, which this paper tries to tackle from various theoretical points of view.

This is an extremely important issue if one also judges from the literature on the “doctrine of restraint” in a liberal democracy. This doctrine wants citizens to restrain themselves from approving or disapproving public policy solely upon religious reasons. The view of “full restrain”, i.e. no involvement of religion at all, as expressed e.g. by Rotry (1994) is overwhelmed by the view of “partial restrain” as is contemplated e.g. by Audi (2000) and according to which citizenry should support public policy when the secular and religion elements correlate, and might as well refrain from doing so in the absence of such correlation. And, there are also some, like e.g. Eberle (2002) and Perry (1994), who insist in the primacy of religion in shaping policy.

The point is that all, from Adam Smith (1904 [1776]) to Iannaccone (2012), agree in that the marriage of religion with politics can be optimal from the religious standpoint, establishing a mutually beneficial channel between the cosmic-minded quests of religious authorities and political ambition on the part of politicians.<sup>1</sup> And, all agree that religion is capable of shaping from national productivity and growth, (see e.g. Barro and McCleary, 2003; Gruber, 2005; Kuran, 2004; and Becker and Woessman, 2009), to international

economic and non-economic dynamics, (see e.g. Barro and McCleary, 2005; Gill, 2005; Iyigun, 2008; and McCleary and van der Kuijp, 2010). Indeed, worshipping attracts societal resources and affects incentives in the sphere of the economy depending on the resource allocation regime determined by the interaction of religious societies with the state.

Overtly or covertly, the state does need the support of the dominant religion; and, overtly or covertly, that religion does constitute a public good in the eyes either of the state or of the majority of the citizenry. The question is how far the state and the public are willing and able to accommodate the public character and hence, provision of this good. The resource allocation regime is shaped by this reality. Three such benchmark regimes are advanced in the next section in an effort to investigate the subsequent socio-economic dynamics. These regimes are: the Secularist, the State-sponsored, and the Fundamentalist, depending on whether the religious good is privately financed under a Walrasian equilibrium without the slightest connection with public policy, publicly provided under a Nash but Pareto-inefficient equilibrium in compliance with the mandate for the correlation between religion and public policy, or over-produced anyhow under a Lindahl and Pareto-efficient equilibrium in the sense of full public policy subjugation to religion, respectively.

## 2. The Analytical Framework

The approach to the demand for religious services is usually based on the way the religious good should be entering the utility function and hence, on the definition of this good; see, for example, Azzi and Ehrenberg (1975), Iannaccone (1990), Glaeser and Sacerdote (2008), and Barro et al. (2010). Here, we take religious belief for granted, and we discuss the nexus between type of resource allocation regime and cosmic quests of priesthood. The definition of the religious good is always simple: places to pray, people who will guide the believer, and stuff for rituals. This is the reason that as we shall see below, the resource allocation regime does not make much difference in the volume of the resources allocated to religion. It does, however, make much difference in so far as it reflects the extent of the involvement of religious authorities in public affairs.

### 2.1 Conventional Treatment

For convenience, we assume that there are only two goods; the religious one,  $R$ , which is produced under a constant average and marginal cost,  $r$ , and the cosmic good,  $K$ , taken as the *numeraire*, of which individual  $i$  has endowment  $B_i$ . Let both of them be private goods. Hence, each religious individual is called for to maximize utility:

$$U_i(B_i - rR_i, R_i), \quad i=1,2,\dots,N$$

with first-order condition:

$$\frac{\partial U_i / \partial R_i}{\partial U_i / \partial K_i} = r, \quad \forall i \in N,$$

implying that expenses for the religious good are as high as needed to equate the individual marginal rate of substitution (*MRS*) with the marginal rate of transformation. The solution is illustrated diagrammatically through point S in Figure 1 where AZ represents the constraint  $K_i = B_i - rR_i$ . S is the point of tangency of the highest possible indifference curve with the individual budget constraint, AZ, leading to  $OV = R_i^s$ .

Point S reflects the case of the Secularist provision of the religious good, defined to be the case of wholly privately financed religious commodity akin either to a closed sect, or to a private, inherited, non-proselytical religious environment within the context of a cultural mosaic, tolerant pluralism, rather than cultural melting pot, (Kelley and Trebilcock, 2010; Mearman, 2011), and without any involvement in public policy making. These two extremes

are identical economics-wise, because they both exhibit market-like behavior given in addition that free-riding against fellow believers is incompatible with believing. Regardless the would-be fanatical background of a sect, its members feel within its realm as free as the people of inherited religion. This is something that appears also to be confirmed by works such as those of Glaeser (2005), Iannaccone and Berman (2006), Benmelech and Berrebi (2007), and Iannaccone (2012), each from its own perspective.<sup>2</sup>

To examine the case of public support in its provision, it is convenient to assume Cournot-like behavior in the sense that each individual takes for granted what the others would contribute towards the production of  $R$  regardless what s/he will chose to do. S/he is called for to maximize:

$$U_i(B_i - rR_i, R_i + \sum_{j=i} R), \quad i \neq j, \quad i, j = 1, 2, \dots, N,$$

with the same first-order condition as above, and with  $\sum MRS = Nr$  provided that all religious individuals are treated as identical. Point P in Figure 1 captures this Cournot-Nash equilibrium, with  $DL = R_i^p$  given  $\sum R_i$ , and with each point on SP associated with a sum over a different each time,  $v, v=1, 2, \dots, N$ , summands. Point P describes the case of the State-sponsored regime, which is the state-sponsored religious-authority religious good provision coming out of partial public policy-religion correlation as a means of (a) softening the private burden for the production of the religious good, (b) stimulating at the same time the consumption and production of the private cosmic good, because  $R_i^p < R_i^s$ , and (c) strengthening potentially work incentives and growth as follows: One reason the reduction in religious expenditure may be individually and socially desirable, is just because the public production of the religious good can be cost-reducing through economies of scale. And, the other reason is that under a large  $N$ , the reduction would be very small:  $\sum R^p = (N/N+1) \sum R^s$  under linear demand functions. Now, combining the production cost reduction with the slight only expenditure reduction, a negligible only reduction in the provision of the religious good is expected. But, what is more important is that some partial religion-public policy correlation would be conducive to growth not so much from the viewpoint of increased resources allocated to religion, as because such a correlation might boost work incentives to work for “country and faith”.

FIGURE 1: About here

The economics for the negligible reduction in the provision of the religious good under such circumstances, comes about by abandoning for a moment the standard public finance framework followed so far; (see e.g. Atkinson and Stiglitz, 1980), and entering standard microeconomics, (see e.g. Henderson and Quandt, 1980). Contrary to the case of private goods where production and consumption decision-making is made by two distinct types of agents, producers and consumers, respectively, such a decision-making is made in the case of public goods by a single type of agents, namely the voters. The consumers of a public good decide individually how much of it needs to be produced (a) given that it will be provided monopolistically (by the state-sponsored religious authority in our case here) under average cost pricing, (zero religious authority profits), and (b) given what the other consumers-voters would contribute towards the production of the good. Consequently, the decision-making problem of the voter becomes in its role as a producer identical to that of the Cournot oligopolist, and assuming next for simplicity constant average and marginal cost of production, the result in so far as our topic here is concerned,  $\sum R^p = (N/N+1) \sum R^s$ , obtains.

What prompts this inequality of the  $R$ 's, is the Cournot response of individuals to the call for religion-public policy correlation; or the same, it is the economic side of a call for religious revival that would presumably enhance the cosmic status of clergy. For us here, it is only for this reason that  $R$  may be offered as a public good contrary to the usual modeling of  $R$  as a collective good provided by organized religion, and subject moreover to property rights enforcement, etc; (see e.g. Iannaccone, 1991; Chaves and Cann, 1992; Montgomery, 2003; and Froese and Pfaff, 2005). There can be no economics of religion if religion is not organized as such, because then only the part of rituals, private rituals, would remain from the definition of  $R$ , unworthy of special economic investigation. After all, as Durkheim (1965 [1915], p.59) has put it: “[i]n all history we do not find a single religion without a Church”. And, moreover, it would be self-contradictory to maintain that a believer supports organized religion to cheat on it as perhaps s/he might do in the case of the non-religious public goods. Otherwise, such a believer would be irrational, and irrationality has no place in economics.

To return back to our results, making a religion state-sponsored so to speak, ends in a reduced  $R$ , compensated presumably by the consolidation of a religious revival in the place of a simple inherited religious identity. Consequently, only a fanatic would raise the issue that there is a  $(1/N+1) \sum R^s$  missing from maximizing social welfare, because note that the institutionalization of a state religion does not preclude pluralism. It just turns it into a “selfish” one to confront perhaps a stronger, not necessarily religious, opponent united. It does, however, lend itself to extremism, and adoption by the state of the extreme demand for  $(1/N+1) \sum R^s$  more  $R$ , would lead to the equilibrium given by point F, where AT is the line  $K=B-(rR)/N$ , and  $DQ=OV=R_i^s$ . F is a Lindahl equilibrium given our assumption about constant average and marginal cost in the supply of  $R$ . Average cost pricing is consistent with zero Church profits, balanced government budget, and Pareto-efficient resource allocation, matching in effect the Lindahl tax. But, F does not belong to the Cournot-Nash reaction curve, destabilizing the society and hence, undesirable by the majority of its members. This is the reason F can only be the outcome of subjugation to fanaticism and the case of the Fundamentalist regime, of perfect religion-public policy coordination.

It is an environment of passionateness that might as well lead to over-production of  $R$  beyond that dictated by point F. But, even if not, the subsequent socioeconomic disorder will be having the tendency to restore equilibrium P if let by the fanatics *ceteris paribus*. The Pareto-inefficient P is the result of Nash democratic interaction whereas the Lindahl equilibrium F, which does reproduce the Pareto-efficiency of Walrasian S, is the outcome of minority veto; typical paradigm of Arrow’s Impossibility Theorem. Nevertheless, the dynamics of socio-economic unrest may even lead to action against the authoritarianism of official religion and towards the decentralized Walras equilibrium under S *per se* in a quest for an economic efficiency and religious respect accompanied by democracy, too. Much more so when as Curini et al. (2014) document empirically, radicals feel “happier” than moderates, but less happy the closer they are to a government of theirs: Fanaticism is an unstable equilibrium.

## 2.2 Treatment of Fanaticism

Fanaticism is identified here with pressing quests for social welfare slightly only greater than that associated with the Cournot-Nash equilibrium, P, i.e. with quests for any status quo to the right of P up to F along AT, since any of these points lies on an indifference curve which is higher than that which is tangent at P. The “keywords” behind the characterization “fanaticism” are “pressing” (quests) for “slightly greater” (benefits). Yet, such a behavior is not captured explicitly by our modeling, which is also true for the behavior aiming at just making a religion a state-sponsored one. The reason is the assumption of

identical individuals. And, although a quest to proclaim a religion a state-sponsored one may be unanimous on the part of its believers in line with this assumption, fanaticism cannot be unanimous at least in the context of this analytical framework. If it were, point F would not be unstable. Consequently, a differentiation of the utility functions is required to account for the effect of different religious militancy on resource allocation.

Toward this end, a given amount of resources should be seen analytically as a heterogeneous, divisible good, consisting of one cosmic part and one religious part so that if one prefers  $K$  twice as much as  $R$  and another person has the opposite preference, a Pareto-efficient, envy-free, and equitable allocation of the  $[(1/2)K, (1/2)R]$  resource would be to give  $(2/3)K+(1/3)R$  to the former person and the remaining  $(2/3)R+(1/3)K$  to the other person. Such an allocation would be (a) Pareto-efficient since there is no other allocation giving these two persons portions that they value at least as much as the ones allocated, (b) envy-free, because each person values its allocation at least as much as that of the other person, and (c) equitable given that each person values its allocation exactly the same as the other person values its own allocation. Yet, Brams, Jones, and Klamler (2006, 2012) have established that equitability and envy-freeness can be incompatible for three or more players with differing value functions regarding a heterogeneous resource. And, it is equally well known that distributive justice problems plague even Walrasian equilibrium *per se*; (Varian, 1974, 1975). This is exactly the analytical environment within which fanaticism may be captured explicitly.

Consider the following example prompting a trade-off between envy-freeness and equitability even in a two player context, and giving rise to fanaticism under envy-freeness because of this precisely trade-off. Let the resource  $\mathfrak{R} = \sum B_i$  be defined by the  $[0,1]$ -interval,  $(z, 1-z)$  be an allocation of it between  $R$  and  $K$ , and  $(x_i, 1-x_i)$  be an allocation of  $B_i$  such that  $\sum x_i = z$  and  $1 - \sum x_i = 1-z$ . And, let moreover,  $i=2$ , with  $U_1(x_1, 1-x_1) = a_1 + R_1^2$  and  $U_2(x_2, 1-x_2) = a_2 + R_2^{3/2}$ . Presumably,  $a_1$  and  $a_2$  give the maximum utility derived when only  $K$  is consumed,  $(x_i=0)$ , and  $R$  comes to enhance this utility in a concave fashion but which differs between the two individuals. Equating the two utilities to find the envy-free allocation, and letting  $R_2 = bR_1$ ,  $0 < b \leq 1$ , and  $a_1 - a_2 = a$ , yields for solution equation,

$R_1^2 - R_2^{3/2} = a_1 - a_2 = a \Rightarrow R_1^2 - b^{3/2} R_1^{3/2} = a \Rightarrow R_1^{3/2} (R_1^{1/2} - \tilde{b}) - a = 0$ , where  $\tilde{b} = b^{3/2}$ . If instead of  $R_1^{1/2}$  we had  $y$ , this equation would be the cubic one,  $y^2 (y - \tilde{b}) - a = 0$  or  $y^3 - \tilde{b} y^2 - a = 0$ . The solution to this equation derives from the discussion of its discriminant, which is made in the Appendix and which leads to the considerations illustrated through Figure 2.

FIGURE 2: About here

The utility curve of individual 2 is flatter than that of individual 1, reflecting the fact that  $a_2 > a_1$  implies that a given  $K$  confers to the former more utility than to the latter individual, and hence, that 2 is less religious-prone than 1.  $U_1$  increases all the way up to  $\bar{R}^s$  and may peak even further after  $\bar{R}^s$  whereas the  $U_2$  curve peaks at  $\bar{R}^p < \bar{R}^s$ ; (presumably,  $\bar{R}^s$  and  $\bar{R}^p$  correspond to  $R_i^s$  and  $R_i^p$ , respectively). At  $\bar{R}^s$ , there is envy-freeness and Pareto efficiency but equitability is given by

$$\int_0^w (a_1 + R^2) dR = \int_w^1 (a_2 + R^{3/2}) dR \Rightarrow w^3 - (6/5)w^{5/2} + 3aw + 3(a_2 + 2) = 0,$$

whose solution differs from that of the above cubic equation, because presumably the two equations are not identical. One of the two individuals or both of them do not see the solution  $b = [(27/4)a]^{3/9}$  as being an equitable one. Under a Walrasian equilibrium, only one of them will be complaining, namely individual 1, because  $U_2$  peaks after  $\bar{R}^s$ . S/he will continue complaining under a Lindahl equilibrium for the same precisely reason, but now the other individual will start complaining too, for having to consume involuntarily  $\bar{R}^s$  as opposed to  $\bar{R}^p$  which is what s/he wants if  $R$  is not provided through the market. The only explanation why individual 2 would conform voluntarily with  $\bar{R}^s$  in the latter case is a “keep up with the Jones” attitude, with the “Jones” being the religious-prone individual 1, her or his “holiness” which has not been given the chance yet to turn into fanaticism.

It seems that we have now a clearer picture about fanaticism. A fanatic’s  $U$  curve is one which peaks after the Walrasian equilibrium, and the quest for the movement to the Lindahl equilibrium after a religion has become state-sponsored, is used only as a first step toward eventually the consumption of  $R > \bar{R}^s$  in line with the fanatic’s aspirations. This appears to be the reason why a fanatic would make so much noise about such a negligible lack in the consumption of  $R$  by his/her coreligionist as that implied by the  $b = [(27/4)a]^{3/9}$ . Managing to impose this marginal increase of  $R$  on society opens the road to theocracy which is actually the ultimate target of the fanatic. To see these considerations from still another perspective,  $\bar{R}^p$  might be seen as the outcome of majority voting under median voter theory whereas the Lindahl  $\bar{R}^s$  is an intermediate step toward the despotic enforcement of the peak of the utility curve of the fanatic, acting as an interest group of increasing militancy, (Black, 1948; Downs, 1957).

It is important to emphasize the coercive character of the Lindahl equilibrium once it is recognized that the authority that has been formed to produce a public good has been formed not only for this reason *per se*, but also for the reason(s) that induced the public to demand the provision of the particular public good in the first place. These are reasons which are as a rule politicized. From this point of view, there will always be some part of the public stressing the political rather than the economic role of the state, and trying to subdue the economic to the political element by turning Walrasian to Lindahl if not to Lange-Lerner and even distortive Kantorovich equilibria.

### 3. Concluding Remarks

The analytical framework advanced herein might certainly become more elaborate and the subsequent game-theoretic interaction explicit. But, it would be superfluous to proceed to such a detailed discussion given Occam’s razor in trying to explain phenomena: A specification of the utility functions would be needed at considerable loss of generality, with a marginal only benefit in terms of formality.

Judging the conclusions reached earlier from still another viewpoint, namely that of economic-cum-emotional (EE) rationality as advanced by Parada-Daza (2004) and Parada-Daza and Parada-Contzen (2013) through emotional well-being utility functions, the fact remains that: Agents, who are not willing to compromise some level of economic satisfaction, coexist with other agents, who are not willing to compromise non-economic utility indices, and the societal outcome is susceptible to the correlation between the non-economic element and public policy. Yet, to the extent fanaticism is the outcome of emotional outburst, it and thereby fundamentalism may very well be suboptimal from the viewpoint of EE rationality in

the long-run. As such fanaticism may be seen as a temporary more or less deviation away from Cournot optimality.

In so far as religion is concerned, it is natural then but cosmically rather than spiritually motivated that if a religious authority wants to be having a say on societal matters on behalf of its followers, it will have to be doing so by advancing cosmic claims. And, history is there to see that if this is not done as efficiently as it should according to some believers, doctrinal innovation or heresy, motivated primarily by cosmic claims, and dressed with some theology, canon law, and rituals, will be in order.<sup>3</sup> It is this, broadly recognized, as was explained in the introductory section, issue that this paper tried to rationalize theoretically.

Actually, this paper might as well be titled “The Simple Analytics of Dogmatic Imperialism”, be it religious or not, and including *inter alia* in the list of historical incidents, Fascism-Nazism and Marxism-Leninism, too. But, we think that humanity is nowadays at a stage of development under which although religion or ideology has not been taken away from man’s life, development has made it a personal only affair as a *modus vivendi*, without raising any institutionalization issues regarding the religious or party organization with which the personal belief is connected: According to the 2012 WIN-Gallup International Global Index of Religiosity and Atheism, a global average of 59% declares to be a religious person, ranging from 96% in Ghana to 14% in China, and from 97% for Buddhists to 38% for Jewish. The question posed to respondents was: Irrespective of whether you attend a place of worship or not, would you say you are a religious person, not a religious person or a convinced atheist?...

## Appendix

The discriminant  $\Delta$  of the cubic equation  $y^3 - \tilde{b}y^2 - a = 0$  is  $\Delta = -(4\tilde{b}^3a + 27a^2)$  and appears at first sight to be negative even if  $a < 0 \Rightarrow a_1 < a_2$ , since absolutely  $27a^2 > 4\tilde{b}^3a \Rightarrow (27/4)a > \tilde{b}^3$ , which is true given that  $b$  is a decimal number raised totally to the power of 9/2. Hence, our equation appears to have only one real root:

$$y_1 = \frac{\tilde{b}}{3} - \frac{1}{3} \left\{ \frac{1}{2} [-2\tilde{b}^3 - 27a + \sqrt{27(4\tilde{b}^3a + 27a^2)}] \right\}^{1/3} - \frac{1}{3} \left\{ \frac{1}{2} [-2\tilde{b}^3 - 27a - \sqrt{27(4\tilde{b}^3a + 27a^2)}] \right\}^{1/3}.$$

But, note from the second cubic root that unless not only  $-(2\tilde{b}^3 + 27a) > 0 \Rightarrow$

$-(4\tilde{b}^3a + 27a^2) > 0$ , but also  $(2\tilde{b}^3 + 27a) > \sqrt{27(4\tilde{b}^3a + 27a^2)} \Rightarrow (2\tilde{b}^3 + 27a)^2 > 27(4\tilde{b}^3a + 27a^2) \Rightarrow (2\tilde{b}^3 + 27a)^2 > 27(4\tilde{b}^3a + 27a^2)$  or  $(4\tilde{b}^3a + 27a^2)^2 > 27(4\tilde{b}^3a + 27a^2) \Rightarrow (4\tilde{b}^3a + 27a^2) > 27$ , the solution  $y_1$  will not be a real number and hence,  $\Delta$  cannot be negative. At the other end, we cannot assume that  $\Delta > 0$ , not only because it would imply that  $(27/4)a < \tilde{b}^3$ , which is counterintuitive. The only option left is that  $\Delta = 0$ , with our cubic equation having a multiple real root. But,  $\Delta = 0 \Rightarrow -(4\tilde{b}^3a + 27a^2) = 0 \Rightarrow 4\tilde{b}^3 + 27a = 0$ , which is sensible only if we can write  $4\tilde{b}^3 = 27a$ , thus implying that  $a_1 - a_2 < 0 \Rightarrow a_1 < a_2$  and  $\tilde{b}^3 = (27/4)a$ .

## Notes

1. “But whatever may have been the good or bad effects of the independent provision of the clergy, it has, perhaps, been very seldom bestowed upon them from any view to those effects.

Times of violent religious controversy have generally been times of equally violent political faction. Upon such occasions, each political party has either found it, or imagined it, for its interest to league itself with some one or other of the contending religious sects. But this could be done only by adopting, or at least by favouring, the tenets of that particular sect. The sect which had the good fortune to be leagued with the conquering party necessarily shared in the victory of its ally, by whose favour and protection it was soon enabled in some degree to silence and subdue all its adversaries. Those adversaries had generally leagued themselves with the enemies of the conquering party, and were therefore the enemies of that party. The clergy of this particular sect having thus become complete masters of the field, and their influence and authority with the great body of the people being in its highest vigour, they were powerful enough to over-awe the chiefs and leaders of their own party, and to oblige the civil magistrate to respect their opinions and inclinations. Their first demand was generally that he should silence and subdue their adversaries: and their second, that he should bestow an independent provision on themselves. As they had generally contributed a good deal to the victory, it seemed not unreasonable that they should have some share in the spoil.” *Wealth of Nations*, 1776, V.I.196.

2. This is what more or less Adam Smith may mean when he states that: “It may naturally be thought, at first sight, that the ecclesiastics belong to the first class, and that their encouragement, as well as that of lawyers and physicians, may safely be entrusted to the liberality of individuals, who are attached to their doctrines, and who find benefit or consolation from their spiritual ministry and assistance. Their industry and vigilance will, no doubt, be whetted by such an additional motive; and their skill in the profession, as well as their address in governing the minds of the people, must receive daily increase from their increasing practice, study, and attention.” *Wealth of Nations*, 1776, V.I.194.

3. See note 1.

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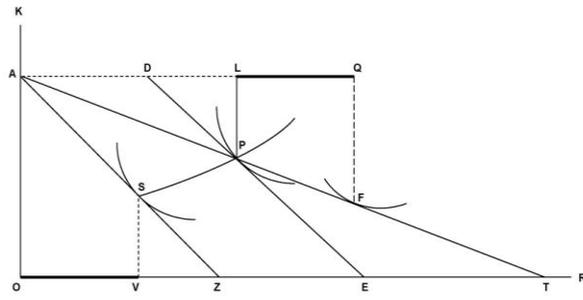


Figure 1

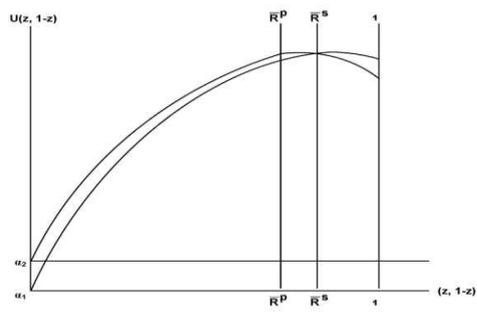


Figure 2