Robbins, Time, Learning and Economic Sustainability Value

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Preliminary draft - Do not quote

November 2007

Abstract

We revisit, critically evaluate and extend Lionel Robbins' famous definition of economics as the science which studies human behaviour as a relationship, between scarce means which have alternative uses, in the context of post-Robbins developments in neoclassical economic theory, but also developments in evolutionary economics and management theory, in particular Schumpeterian, resource, knowledge and system-based perspectives. We suggest that Robbins' definition and approach is more general than the currently dominant one. However, it could be usefully expanded to account for economic sustainability.

I. Introduction

The aim of this paper is to revisit, critically evaluate and extend Lionel Robbins' famous definition of economics as the science which studies human behaviour as a relationship, between scarce means which have alternative uses, in the context of post-Robbins developments in economic theory, but also developments in evolutionary economics and management theory, in particular Schumpeterian, resource knowledge and system-based perspectives. We derive four main propositions, as follows:

- Post-Robbins economic theory focuses on the (Pareto) efficient allocation of scarce resources, effected through "optimal" nation-wide industry structures, like perfect competition, or perfect contestability, as a given point in time. In so doing this approach underplays the issue of intertemporal efficiency, through innovation. It also leaves itself exposed to the Schumpeterian criticism that perfect competition removes the incentive for innovation, namely the (transient) monopoly profits. This approach to economics also underplays the generality of Robbins' definition and has led to an impoverished view of virtuous human and organisational behaviour, notably, as regards the issue of economic sustainability.

- Recognising that time is an important constituent of Robbins' "means" can help re-establish the generality of Robbins' definition. At the same time it raises a conundrum concerning Robbins' definition. While time is by its very nature "intertemporal", Robbins' focuses on decisions at a particular point in time. In addition, while time is scarce for a particular individual at a given

point in time, it is not necessarily scarce, for individuals and/or nations more generally, in that it can be extended through increases in longevity and the size of populations. Similarly other means-resources notably knowledge may not be scarce, at all times. All these point to the need to also revisit Robbins' definition.

- The mainstream interpretation of Robbins' definition is currently challenged by recent developments in resource-system-based economics. These revisit the classical and Schumpeterian view that suggests the aim of economics to be productivity enhancement and value added.

- Whilst a potential improvement the evolutionary-systems view also fails to deal with the issue of economic sustainability. We suggest putting sustainability centre stage and go on to develop a framework on the nature and determinants of sustainable value added that aims to provide a metaclassical synthesis, of more conventional as well as Schumpeterian-evolutionary ideas. We revisit Robbins' definition in this context.

Structure-wise, Section II discusses the approach of neoclassical economic theory and some of its limitations. Section III revisits Robbins' definition and suggests this to be more general than usually interpreted, yet subject to limitations, especially as regards its treatment of time and knowledge. Section IV proposes an approach to economics which puts centre-stage the issue of sustainable value added, and explores some of its implications.

II. The Approach of Economic Theory

In the Wealth of Nations, Smith (1776) pointed to resource-creation through innovation-productivity enhancements afforded through specialisation, the division of labour and team work, in his famous "pin factory". Smith complemented this "visible hand" story by analyzing the role of the price mechanism, the invisible hand "of the market" in allocating resources, providing information, incentives and bringing about a degree of co-ordination of supplies, demands and the economy. The marvel of the "invisible hand" consisted in that these results were achieved without any overall planning but importantly through the simple pursuit of self-interest, by economic actors. In a classic statement, Smith suggested that

> "It is not from the benevolence of the butcher, the brewer or the baker, that we expect our dinner, but from their regard to their own interest." (Smith, 1776, pp.26-7)

The apparently narrow conception of human motivation by Adam Smith has been questioned; see for example Sen (1987), who points to a more nuanced understanding of human motivation in Smith's work. Nevertheless, the "butcher" example has become a pillar of mainstream economics. Self-interest is approximated by "utility", which for the case of firms, for example, is mainly equated to the maximization of profits. Given the pursuit of self-interest, mainstream economics then proceeds as follows, see for example Varian (1992). First, there is an attempt to link some of the major building blocks of economics, notably the demand schedule to the behaviour of rational utility seeking individuals. Second, there is a focus on static allocative efficiency (taken to be the efficient allocation of (scarce) resources at a given point in time) and dynamic or intertemporal efficiency (taken to be the introduction and

diffusion of innovations). Third, is the means of achieving these objectives. This is through a focus on the market mechanism, in particular through alternative types of market (industry) structures. It is proposed that some types of industry structures, notably, “perfect competition” and/or “perfect contestability” are better than others (for example, monopoly) in achieving the objective of efficient allocation of scarce resources, suggesting the “optimality” of such types of “market structure”, in effecting static economic efficiency. The issue becomes less clear-cut, when dealing with interpersonal efficiency, notably innovations. Here the alleged optimality of “perfect competition” and or “perfect contestability” becomes suspect, see Baumol (1991).

A major achievement of economic theory has been its ability to prove that under conditions of perfect competition, a market economy, will allocate (scarce) resources in an efficient way. Economic efficiency is approximated by Pareto efficiency, defined as a situation where no improvement can be made to one person, without making someone else worse off. In addition, any Pareto efficient situation can be shown to correspond to a competitive equilibrium, given an appropriate distribution of endowments, see Dasgupta (1993) for a critical assessment.

These are powerful results, the derivation of which makes economists justifiable proud. It is also clear, however, that these are results achieved at a cost. This comes about by the narrowing down or the scope and method of economics, to efficient allocation of (scarce) resources, through self-interested individuals, and (potentially unrealistic) “optimal” types of market structures. This view of the scope, method and assumptions of economics has been criticised on various grounds. Fist it renders

economics free of any considerations or virtuous behaviour. Sen (1987), for example, questioned the usefulness of the self-interest assumption, its link to Adam Smith's views and even its very meaning. Others went further, by questioning the alleged optimality of the two industry structures, perfect competition and perfect contestability. Both these structures are characterized by the presence of free entry and costless exit by other firms. This helps establish their "zero waste" property. As Baumol (1991) puts it,

> "It is the costlessness of entry and exit under perfect competition or contestability that prohibits all inefficiency, because any firm that indulges in wasteful expenditure cannot long survive the incursion of efficient entrants" (p.12).

Baumol went on to show that for this very reason firms in perfectly competitive or contestable markets will have an incentive to degrade and misrepresent product quality and to also abuse the environment. This will be the case even in "repeated games" provided that some players are "transient". The record of such market structures will instead be better in the case of another aspect of virtuous behaviour that of racial, sex or other forms of discrimination. "Zero waste" suggests a tendency against discrimination, albeit here too the outcome is not always guaranteed.

In summary, "optimal" market structures and virtuous behaviour can be odd bedfellows. If firms "sink costs" through, for example, advertising and investments in "reputation", and if this raises barrier to new entrants thus affording such firms some degree of market power, this could help escape the problem. However, the cost would also be high, namely the "optimal" market structure and its associated Pareto efficient

allocation of scarce resource would also go. There seems to be no easy way out. Either markets are optimal but with potentially misbehaving participants or markets are not optimal.

The conundrum is not solved for the case of "intertemporal" efficiency. One of the stylized facts of the innovation literature is that it is neither the "midgets" nor the "giants", but rather the medium-sized firms that promote innovation the most, indeed the relationship between competition and innovation must be of the inverse U-shape-type, see Aghion et al. (2005) for a recent re-statement. Medium-sized firms are incompatible with perfect competition, albeit compatible with contestability. However, Baumol (1991) notes, the conditions of free entry and costless exit deprives from firms the very incentive for innovation, namely Schumpeter's (1942) "transient" monopoly profit. Assuming that innovations are good for intertemporal performance, ceteris paribus, "optimality" of market structures may be inimical to intertemporal efficiency.

It is not clear whether the less than optimal attributes of "optimal" industry structures, should be of concern to anyone, as it appears that few believe in their existence. For one, contestability's own proposer, Baumol (1991) observes.

> "No one has ever claimed seriously that <u>any</u> markets in reality are <u>perfectly</u> competitive or contestable. Both of these are, at best, useful theoretical constructs that are not to be found in reality." (p.20).

We agree, but this settles fewer issues than it raises, discussed in the next Section. In the remainder of this section, we wish instead to point to some cases where the need

for more altruistic behaviour by economic actors becomes apparent, even within the confines of the arguably narrow problematic of economic theories. A useful way to do this, is we feel, by relaxing some of the most obviously unrealistic assumptions of "optimal" market structures, and by considering ways through this has implications on more virtuous human action.

The first such assumption is that of zero transactions costs. As Coase (1937) pointed out, the introduction of positive transactions costs has profound implications on the raison d'être of economic institutions notably the firm, as well as on firm strategy and "optimal" (or otherwise) industry structures. It is widely recognised that transaction costs whether in markets or in firms (organizational costs), are greatly reduced through behaviour based more on trust, norms and co-operation than on the blind pursuit of self-interest, see North (1990).

A second case where more virtuous behaviour is recognised in the mainstream literature, relates to "prisoner-dilemma"-type circumstances. While the optimal strategy for the players in such cases is not to confess, the dominant strategy, (in view of uncertainty and lack of trust) is to confess. This shows that in the presence of social interaction, individuals are more likely to achieve their objectives through co-operative behaviour, in the absence of which sub-optimal results may be obtained. Had the prisoners agreed beforehand not to confess under any circumstances, they could both end-up better off. The establishment of norm-based behaviour can in such cases help establish co-operative behaviour. Prisoner-dilemma type cases are very prevalent in real life, especially among rival firms. This suggests that co-operative rather than selfish behaviour can often be beneficial to the parties concerned.

In the words of Amartya Sen (1987),

"In the Prisoners' Dilemma each person has a "strictly dominant" individual strategy, in the sense that no matter what others do, each person's own goals are better served by following that dominant (and self-goal) strategy. At the same time, everyone's goals would have been respectively better served had they followed a different (and more cooperative) strategy. Given self-goal choice, it is clear that each person will indeed follow the non-cooperative strategy, and thereby everyone will end up in a situation inferior to following the cooperative strategy. There are real-life analogies of this kind of problem in many areas of real importance in economics, e.g. achieving high industrial productivity (pp.82-83).

The optimal market structure-based models usually focus on one type of co-operative behaviour only, that of collusion over prices. As George Richardson (1972) aptly observed, this approach fails to see the dense network of non-collusive inter-firm co-operation and affiliation through which firms are interrelated. Co-operation is seen by Richardson as a third mode of economic coordination, different to market and to hierarchy (integration), which is more efficient that the others when firms possess dis-similar, yet complementary capabilities. This perspective adds another, production-related reason for non collusive inter-firm co-operation, in addition to exchange-related transaction costs considerations.

As we noted, the above is a rather eclectic reference to cases where the approach of economics is seen to be impoverished of virtuous, even just co-operative, behaviour.

This may be unsatisfactory. In the next section we expound the main elements of an alternative perspective, which, we suggest, allows more scope for virtuous behaviour.

An alternative to the "optimal" market structure-oriented approach of economics is the emergent systems perspective, (see Fagerberg et al., 2005), which is currently favoured by policy makers in parts of Europe (Pitelis, 2007). This approach is also consistent with and can accommodate management concerns, such as the role of knowledge, dynamic capabilities, public-private complementarities, NGOs and social capital.

The system perspective replaces the focus of mainstream economists, of static nationwide economic value creation through resource allocation, affected through "optimal market structures", with nationwide inter-temporal economic value creation, effected through innovation- promoting market structures, organizations and systemic interactions. This may well be an improvement over the conventional approach. However, the systems perspective shares with economic theory a focus on the national level and fails to discuss the issue of the sustainability of economic value added, see below. In particular the systems perspective fails to account for the possibility that even innovation can help firms engender advantages, that may be used to restrain competition thereby undermining sustainability - and (thus) more scope for virtuous behaviour. We address this is the next Section.

III. Robbins and the neoclassicals – time, knowledge are learning

The approach of economic theory is meant to draw heavily on Lionel Robbins famous 1935 Essay where he defined economics as "The science which studies human

behaviour as a relationship between ends and scarce means which have alternative uses" (Hausman, 1999, p.85). For Robbins an individual's "disposition of his time and his resources, has a relationship to his system of wants – It has an economic aspect" (Hausman, pp.83-4).

Robbins' definition of economics is arguably more general than the current approach to economics. A main reason is that Robbins does not link his definition with a particular ideal market structure that can help effect efficient allocation of scarce resources. In addition, and perhaps more importantly, Robbins' definition does not necessarily refer to static allocative efficiency. In contrast, the solution to the problem of scarcity may well involve the identification of a more efficient way, to do things, thus innovation and productivity improvements. Indeed, in a fundamental sense, the very pursuit of efficiency in Robbins' sense, must involve learning and innovation. Differently put, unless one learns and innovates, one can only effect efficiency if one has perfect knowledge. This is not assumed by Robbins, but it is assumed by the neoclassical view. Moreover, learning and innovation, involve by definition an intertemporal dimension. Accordingly Robbins' definition can have a static but also and inter-temporal dimension.

It follows that on at least four major counts, namely the notion of efficiency, the temporal dimension, the role of knowledge and learning and the role of industry structure, Robbins' definition is much more general than is the approach of neoclassical economics. Accordingly, one could maintain the general thrust of Robbins' definition, while simultaneously favouring a different approach to economics than the neoclassical one. For example, Schumpeterian, resource-

knowledge-based and "systems-based" evolutionary approaches, that focus on intertemporal value added through knowledge-creation, innovation and systemic interactions, in the context of evolutionary, path dependent, adaptive and pro-active search, are well within the remit of Robbins' definition – as they aim to promote performance intertemporarily through both allocative efficiency and innovation.

Despite the above, it is arguable that Robbins' definition, could lead to some confusion and could be criticized on some counts.

First, Robbins seems ambivalent as to the role of "time". He refers to one's time and resources, raising the question if time is (not) a resource. It could be argued that time is the ultimate resource; as in its absence an individual cannot do very much – it does not exist! In addition while from the point of view of the individual, time is the ultimate scarce resource – there is little one can do to extend it at any given point in time, over time, it is possible to extend time, both at the individual level (for example through increases in life expectancy), and at the aggregate level (through increases in productivity and the size of the population). This challenges the notion of scarcity. Moreover, and importantly the inter-temporal dimension involved in the very nature of time, but also the fact that Robbins' definition is amenable to knowledge, innovation and learning-based interpretations, raises the critical issue of the relationship between knowledge, innovation and scarcity.

It is arguable that knowledge can not be claimed to be source of all times. There is also an extensive literature on knowledge that points to its "public good" characteristics, as well as its tacit, cumulative-increasing returns aspects, see Buckley

and Casson (1975), Polanyi (1966), and the "endogenous growth" literature, for example Romer (1986). If knowledge is a resource (as argued for example by Marshall, 1920), and if it is not scarce, at least not in all cases, it is arguable that Robbins definition may need revisiting and possibly extending.

To summarize this Section, Robbins' definition is more general than the current approach to economics. This approach relies on subsidiary assumptions and tools, which were neither present nor of essence for Robbins' definition. Having said this, Robbins' definition is found demanding and in need of extension on issues pertaining to time, knowledge, learning and innovation. In addition, Robbins' approach shares with the currently dominant approach a failure to consider the issue of virtuous economic behaviour in the sense of behaviour that aims to effect sustainable value added. In the next section, we take a first step towards addressing this issue.

IV. Economics and Global Economic Sustainability

Instead of focusing on rational utility maximizing individuals, whose behaviour can lead to (Pareto) efficient allocation of scarce resources, if certain conditions of optimal market structures are satisfied, in this section we propose to focus on sustainable resource allocation and creation and examine the institutions-organisations (to include their objectives and behaviour) that promote the desired objective, better than alternatives. This relative efficiency in resource allocation and creation is reflected in improved productivity and value added – this would be the case for the firm, the industry, or a nation as a whole. Putting productivity and value added centre-stage helps focus on a realizable outcome, thus provides a realistic benchmark against

which departures can be compared. In this context the scope of economics is to analyse the determinants of productivity and value added and the institutions and organisations that can best promote it at a given point in time and inter-temporally.

A starting observation is that the institution driving productivity improvement of an historically unprecedented pace over the past four hundred years is the capitalist firm. Building on the works of the classics in economics and management, we can claim that the major determinants of productivity at the firm level are unit cost economies (e.g. Smith, 1776; Chandler, 1990), resources, particularly human ones (e.g. Penrose, 1959 on managers; Smith, 1776; Marx, 1959 on labour; Schumpeter, 1942 on the entrepreneur), innovation (Schumpeter, 1942) and the firm infra-structure and strategy, to include organisation, management, structure and systems (e.g. Marshall, 1920; Porter, 1990). The same factors are operative at the level of a region or a nation as a whole, with infra-structure and strategy now referring to more conventional regional and national aspects, such as transport, innovations etc. These four factors interact to effect productivity enhancements in a mutually reinforcing way. The macroeconomic and the institutional (to include the legal) context, can also influence the determinants of productivity and value added. The determinants of productivity can be seen in the context of a “productivity-value added wheel” (figure 1). The wheel metaphor aims at conveying the idea of both static and intertemporal resource creation and allocation.

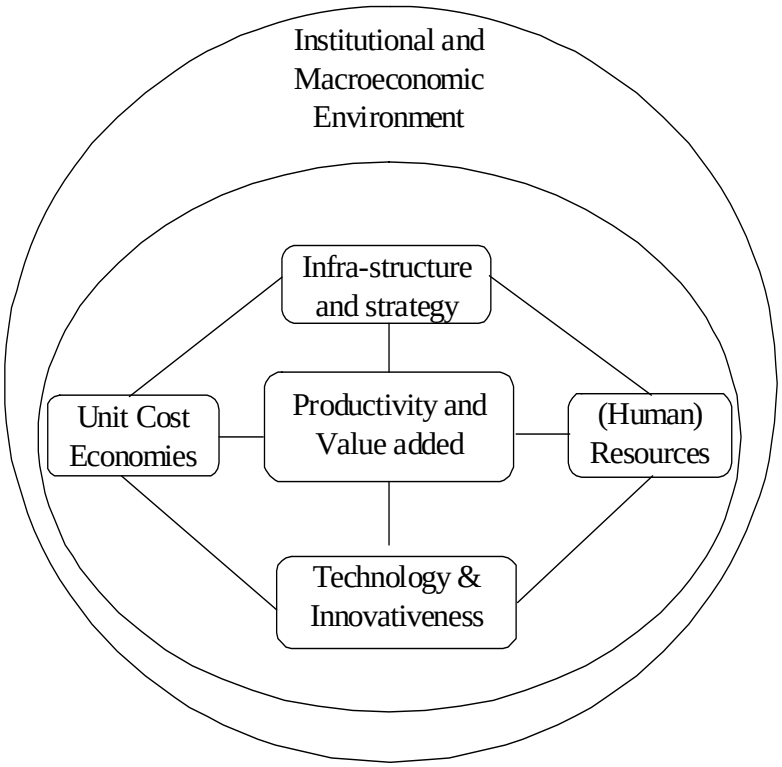

Figure 1: The Productivity and Value Added Framework

The capitalist firm takes centre stage in this perspective. Firms create knowledge, innovations and improve productivity through specialisation, the division of labour, team work, learning by doing and indeed perennial learning, in a way that no other institution or organisation has ever achieved during the existence of our planet. No less than Smith (1776), Marx (1959), Schumpeter (1972), Chandler (1990) and Penrose (1959) attest to that. In addition, in the work of all these scholars that there is no single optimal type of industry structure for firms to operate. Instead of looking for "optimal" industry structures, the critical issue is to identify those aspects of firm and

industry structure, conduct and strategy that influence positively the determinants of productivity and value added.

Other institutions and organisations, however, such as the market, the state, the family, the church, rules, norms and customs can play a role in effecting productivity and value added. For example, the state can have an instrumental role in the legal and institutional context, in regional and national infrastructure, in effecting a "national system of innovation", in industrial relations. Markets provide the glue that links together individual actors, thus helping realize the hitherto potential value added, provide information and incentives, align the latter and effect co-ordination inter-firm and the economy at large. The issue in this context is not how "other" institutions differ from allegedly optimal markets, or whether "other" institutions result from market failures. Instead the focus is on the specialization and division of labour of alternative institutions and organisations, based on their relative advantages in production, exchange, legitimacy, ideology and culture and the identification of institutional and organisational configurations and conducts that promote efficiency in the form of enhanced productivity and value added.

This view of economics has a less impoverished view of virtuous human and organisational behaviour. Looking at the determinants of productivity and value added, unit cost economies can be achieved through firm size and growth, notably economics of scale, scope and growth (Chandler, 1990; Penrose, 1959) but also through firm co-operation in networks, clusters and industrial districts, notably economics of learning, transaction costs and external economies. Innovation is mostly effected by intermediate-sized firms, operating in competitive environments and by

firm clusters. Human resources, which are content, happy and in good terms with themselves, their colleagues and their employers, who are knowledgeable, educated, motivated and enabled, are likely to be more productive than when such conditions are not present, see Pfeffer (1993). There is no single optimal type of individual or firm behaviour, and industry structure in this scheme. Competition and co-operation, self-interest and altruism, big businesses and smaller co-operating firms in clusters, can all help, and in cases hinder, the goal of enhanced productivity and value added. Considering that each institution, organisation and individual has their distinct capabilities, comparative and competitive advantages, the crucial issue is to identify and deploy these for the greater benefit of humankind – approximated in the first instance through productivity and value added. In the absence of a "Dr Pangloss", an approximate way for achieving this objective, is through the interplay, pluralism and diversity of institutions, organisations, individuals, ideas, cultures, religions, norms, customs and civilizations.

The identification of relative capabilities, thus afforded, can serve as a guide to the institutional, organisational and individual configurations and conducts most amenable to productivity and value added. Considering, for example, the firm, the market and the state, analysis and history suggest that while all three can play a role in the overall co-ordination of economic activity (to include production, exchange, and ideology), firms are relatively better in production, markets in exchange and states in ideology, particularly on the forms of legitimacy. Small firms can have advantages in flexibility, large ones in unit cost economics. Firm clusters can enjoy "external" economics and induce innovativeness. Big (but not "giant") business competition, when combined with temporary monopoly gains from innovation, can be a good

milieu for Schumpeterian innovativeness. Rules, customs and conducts that promulgate virtuous behaviour, promoted by the church, the family but also firms and states, can help mitigate the problems of free-riding and uncooperative behaviour, leading to overall value added.

This analysis does not question the usefulness and insight afforded by the mainstream analysis, for its specific purposes. Indeed one could impose relevant assumptions on the framework provided here, and come-up with the conventional analysis, as a special case. It has, however, the advantage, we believe, of seeing co-operation, trust, diversity, pluralism and more generally virtuous behaviour, not as pathological aspects of economy, but instead as part and parcel of a healthy productive economic system.

An implication from our analysis is that the best firms can do to be good citizens, is to do what they are best at; ie keep seeking to produce and capture wealth. Too good to be true? Unfortunately, yes. There is a catch here and it arises from the fact that for productivity enhancements to be possible intertemporally, and therefore sustainably, firms must refrain from using productivity improvement in the short run, in a way that hinders improvements in the longer run. It is not self-evident or even plausible to expect that this will tend to happen. Advantages afforded to firms through productivity improvements, can be used to acquire and maintain monopoly, thus restraining competition; they can lead to explosive inequalities in the distribution of income, wealth and opportunity; they can lead to “excess” human resources, thus mass unemployment; they can destroy the environment and threaten democracy. The routes through which the virtue of efficiency and productivity can lead to such vice

are well known and discussed, so need no further elaboration here. Clear, too, are the ways through which unemployment, excessive inequities, the destruction of the environment and monopoly can hinder productivity, thus endanger sustainability. In the absence of restraint, efficiency and productivity can be the biggest foes of (sustainable) efficiency and productivity! Restraint can come from enlightened business themselves. However, the free-rider problem imperfections in knowledge (to include "enlightenment") and uncertainty suggest against putting exclusive focus on business to address the problems their very successes can engender.

A better alternative as, for example, Baumol (1991) suggests is to the state to change the rules of the game, not by taking over the price mechanism, but by using the price mechanism to render actions that lead to non-sustainability too expensive, or outright illegal. This for example can be done by competition and regulation policies that prevent the acquisition, maintenance and/or abuse of market power, as well as by environmental policies that render actions inimical to the environment, just too expensive. Similarly, (re) distribution, re-employment and overall enabling policies, such as training and (re) education, should be used to remove constraints to sustainable productivity enhancements.

Some of the above policies are already in operation in various countries, albeit often derived from alternative conceptual frameworks or experience, pragmatism and even just expediency. A problem is that such policies often require transfer of resources to the government, which business can be loathed to accept. This is especially the case, since states can often be inefficient and politicians inept and corrupt, or corruptible. The greatest threat of virtuous behaviour, arises from the possibility of big business

and governments developing too cosy a relationship, choosing to share the gains of short-term productivity enhancement and (thus) endangering sustainability and the welfare of future generations, Olson (1971), North (1995). This is the challenge to which all should rise to, including, of course, enlightened business people and politicians.

An additional dimension of our analysis arises from the fact that so far we have assumed away the existences of many countries, with different endowments and degrees of economic development. In a global multiple states context, the aim is sustainable global intertemporal value creation. This has additional implications on, among others, the issues of trade and the mobility of resources, such as labour. Indicatively, governments of developed economies should refrain from policies that restrain trade, yet recognise the need of developing countries to "protect" infant firms and industries, for the expected competition, innovation and productivity effects of the nurturing of such firms and industries. Policies by developing countries to make mass exoduses of valuable and expensive to develop human resources by appropriate use of the price mechanism could be considered and tolerated. These can take the form, for example, of graduates being required to work for a period of time in their country, if work is available and their education has been subsidized by the government. Selective immigration policies should be rendered too expensive for recipient countries. For example, if the EU or the US wish to attract computer literate human resources from Eastern Europe or Russia, they should pay the receiving country, for example, the net present value of the expected wealth contribution of the particular human resource to his/her country. Requests by multinational firms to receive protection from the entry of competitors, as a condition for inward investment

should be monitored closely, and such deals only allowed when they are not found to be inimical to sustainable productivity enhancements. Corruption of politicians of developing and developed countries is a great threat to sustainability and should be eradicated.

The list above is not exhaustive, yet it is indicative of the issues involved. Some policies suggested are widely felt to be reasonable and are already in place. Some others are more unconventional. In certain cases, existing institutions are not empowered to implement and enforce such policies. In some other cases new (international) institutions and organizations may be required. The main point however is this; sustainable productivity enhancement and value added can help provide a new perspective to economics, which has a far wider scope for virtuous behaviour than conventional economics. Additionally the focus on sustainable productivity and value added provides endogenous implications on government, and international competition, regulation, environmental, distributional and other policies to include trade and immigration, that can challenge conventional wisdom. The major challenge arises from the fact that the adoption and implementation of such polices requires cooperative action by business, governments and people at large, to institute the rules of the game, institutions and norms that facilitate the overall objective. This is neither straightforward, nor is the outcome easy to predict. Nevertheless, global sustainable productivity enhancement and value added is, we feel, a vision and a challenge worth arguing for.

V. Concluding Remarks

The current approach of economics has important limitations. This approach is believed to draw on Lionel Robbins' famous definition of economics. Such an attribution is arguably misguided; Robbins' definition is more general and does not rely on the many restrictive subsidiary assumptions, employed by neoclassical economics. It is, however, subject to criticism and extensions, not least on issues pertaining to time, knowledge, learning and virtuous behaviour, notably the sustainability of the value added creation process.

An alternative to the neoclassical focus on rational utility maximizing individuals and other actors, aiming at (Pareto) efficient allocation of (scarce) resources through "optimal" market structures, such as perfect contestability, is a focus on sustainable intertemporal productivity and value added, by a diversity of institutions, organisations and individuals, each contributing where they possess a comparative or competitive advantage and differential capabilities. Such a view of economics, offers greater scope for virtuous behaviour, such as co-operation, trust and networking. Importantly, however it also points to limits to voluntarist business behaviour. It derives endogenous implications for areas such as competition and regulation, distribution of income, the environment, education and health and employment, but also trade and immigration policies. Corruption is seen as a major threat to sustainable global productivity - value added. It is claimed that while the outcome is hard to predict, the vision of unleashing global resources in a way that sustainably enhances productivity and value added, is one worth arguing for.

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