

Taxation and economic growth: A historical and agnostic review

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ABSTRACT

This article provides an agnostic, historical review of taxation and economic growth. It critically evaluates how the relationship between the two has evolved throughout modern history. After an introduction that provides a general overview of the relationship between taxation and growth, the article first discusses the positive role of taxes in promoting economic development in the pre-war and post-war periods of the 1940s. It then critically comments on Solow's neoclassical growth theory and explains the experience of stagflation faced by many advanced countries in the 1970s and its implications for tax theory. New growth theories that attribute an important role in economic growth to government policy in general and tax policy in particular are then discussed. This is followed by a rounded five-point assessment of the impact of taxes on growth. The article ends with a general conclusion.

KEYWORDS

tax policy, fiscal policy, economic growth, economic development

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1. INTRODUCTION

Until the Great Depression of the 1930s and the years immediately after World War II, economic growth, as compared with economic efficiency at full employment, had not been a major focus for economists' attention. In Paul A. Samuelson's 1947 book *Foundations of Economic Analyses*, there was no reference to economic growth in the index. In 1965, John Hicks had written, in the introduction to his book *Capital and Growth*: "No attempt is made in this book to present a theory of economic growth that is superior to any other... I much doubt if there can be such a theory"... He continued: "The phenomena... are immensely complex ..." (Hicks 1965: III). This sentiment was shared by Elhanan Helpman in 2004, in a very good book specifically on growth entitled: *The Mystery of Economic Growth*. On this basis, one can readily claim that economic growth has largely remained until today – a mystery in spite of much writing on it.

In the distant past, the emphasis in the writings of economists had been on price theory, on utility, and on efficiency, and not on economic growth per se. Growth is a "dynamic" concept, while efficiency is a "static" one. Mainstream economists have traditionally focused on the allocation of resources and on their effects on utility, that would result in maximum output under the prevailing economic conditions and available factors of production, at a given point in time. This equilibrium level of output was assumed to provide the maximum welfare attainable, the welfare consistent with a Pareto optimum, in a society that placed little importance on inter-personal equity and on the distribution of income across households. In a sense, the Keynesian countercyclical policies would not be a departure from this tradition, because they were not about economic growth, but about stability.

In the years of the Industrial Revolution, especially in the second half of the 19th century, there was a vague but widespread belief – associated with the signs of industrial, autonomous progress –, that better ways of producing *earlier* goods and *new* goods and services could be always found. These discoveries might lead to more production and a higher standard of living in the future, at least for certain segments of the population in all countries. Such a belief were present in a primitive form in the writings of Adam Smith and other leading classical economists, such as David Ricardo, Thomas R. Malthus and John S. Mill.

Classical economics had generally assumed that competitive markets with flexible prices and no or minimal government intervention would lead to an equilibrium with full employment. This equilibrium was seen as being consistent with the maximum welfare that an economy could produce at a given point in time, given its resources (capital and labour) and its productivity. In this optimum (a Pareto optimum), no one could be made better off without making someone else worse off. Inter-personal comparisons of utility were not considered legitimate, nor were forced inter-personal transfers, whether through taxes or other means.

Keynesian-type unemployment (due to insufficient aggregate demand) could lead to (temporary) underuse of available resources and to recessions, and which created the possibility of achieving some short-term growth in output through countercyclical fiscal policy, had not been considered in the orthodox classical economics of the distant past. Unlike Keynes, who believed that fiscal policy could be an effective macroeconomic tool for raising aggregate demand, and thus, output and employment levels, many economists had been highly sceptical of government intervention, and some remained sceptical of the Keynesian demand management policies even after the emergence of the phenomenon of stagflation in the early 1970s.



Until the Great Depression and the publication of Keynes' *General Theory* in 1936, there had not been a branch of economics called "macroeconomics" or "income theory", a branch that focuses primarily on the behaviour of macro- or aggregate-variables, such as income, consumption, capital, and others. In those years, economic analysis had been mainly concerned with the (micro-) allocation of resources, guided by relative prices and aimed at extracting maximum welfare from the use of limited, available resources.

Long-term economic growth is mainly a "macroeconomic" and "dynamic process". It deals with the behaviour of *macro* variables over long periods of time. There could not have been a focus on economic growth at a time when macroeconomics, as a field, had not existed, and when official estimates of macro variables had not been available. These estimates only became available in the late 1930s with the development of national accounts statistics. The 1930s brought the Great Depression and, inevitably, brought more attention to the issue of equity than in the past, as many families found themselves without income during the Depression years. This period also saw the emergence of Keynesian economics, which looked at what happens to national income over business cycles. It also drew attention to the need for *reliable* national accounts statistics.

The end of World War II also brought much new official information about the differences in per capita income that existed between the groups of countries, especially between rich and poor countries. The question of why some countries had become rich while others had remained very poor inevitably became important. Economic growth, which could increase the per capita income of poor countries, if it sustained over a long period, began to arouse interest.

Was economic growth a phenomenon that could be promoted by certain measures? If so, how and who could promote it? Such questions were at odds with the *laissez-faire* economic thinking that had prevailed in the past, which had been highly sceptical of government intervention in the economy. In those years, it became clear to a growing number of economists that government policy had a role to play, a role if growth was to be encouraged. This view continued to be opposed by economists of certain schools, notably the Austrian School, the Chicago School, and the New School of Public Choice.

In the years following World War II, "*development economics*" emerged as an important and initially controversial new branch of economics. Economic development, the study of what were then called "*under-developed countries*", was developed by some eminent economists, especially in the 1950s (Arndt 1987). The fact that the under-developed countries lacked many of the physical infrastructures (roads/highways, railroads, dams, ports, airports, schools, communication networks, and such like) that advanced countries had, attracted attention. Perhaps differences in the endowment of these infrastructures could explain at least a part of the income differences that existed between advanced and under-developed countries. But how could these infrastructures be created?

The rest of the paper proceeds as follows. The next section explains the role of taxes in promoting development in developing countries. *Section 3* discusses Robert Solow's neoclassical growth theory, which has attracted much attention in large circles, ranging from academics to policymakers. *Section 4* looks at the experience of the stagflation of the 1970s and its implications for tax theory. *Section 5* introduces new growth theories that became prevalent, particularly throughout the 1980s and 1990s. *Section 6* evaluates the impact of tax policy on growth in the light of the experience of the advanced and developing countries. Finally, *Section 7* concludes.



2. AN EARLY POSITIVE ROLE OF TAXES IN PROMOTING ECONOMIC DEVELOPMENT

Governments could perhaps play a direct role in encouraging the building of the missing infrastructure in the under-developed countries. In those early post-war years, two influential economists, one from the United Kingdom ([Harrod 1939](#)) and the other from the United States ([Domar 1946](#)), proposed a way in which governments could play a role in building needed public infrastructure. This would be done by countries raising their low tax levels while keeping government current expenditure low. The resulting (current account) surplus could be used to build the missing infrastructure, presumably contributing to the countries' development. In those years, "*development*" was often distinguished from "*growth*".

This was part of the beginning of the attention paid to macro variables, in this case to tax levels and infrastructures. In the following years, the increase in taxes in under-developed countries attracted the attention of governments and economists. At times, these levels came to be seen as a sign of the quality of the countries' public policies. Governments were praised when they succeeded in raising their potential tax levels ([Burgess – Stern 1993](#)). Foreign tax advisors and foreign assistance played an important role in promoting this goal, and several international institutions (UN, World Bank, IMF, IDB, OAS, ADB, and others) pushed for raising tax levels. Measures to raise the level of taxation were mostly seen as useful tools to promote economic development.

At the time, there was little concern that taxes could have a negative effect on economic performance. However, in a [1955](#) book, Nicholas Kaldor suggested that taxes that encourage saving and discourage consumption might be preferred by developing countries over the taxes that penalize saving. The reason was that more saving would lead to more capital accumulation, and capital accumulation would promote development, in countries where capital was scarce. Kaldor pushed for the use of an "*expenditure tax*" in India, Sri Lanka, and other poor countries, with no success.

The view that taxes on income could inhibit growth gained currency especially in the literature of advanced countries in the 1960s ([Brown 1964](#); [Tanzi 1969](#)). It was addressed in several papers presented at an important conference held at Brookings in 1964 and attended by leading public finance economists. At this conference, Arnold Harberger's paper dealt with the effect of direct taxes versus indirect taxes on economic growth. Based on economic theory, he concluded that there was no priori theoretical case for direct taxation in terms of preferences between work and leisure. However, income taxation tended to reduce the savings rate (see [Harberger 1964](#); [Chase 1964](#)). Great importance was attached to the savings rate and to its contribution to capital accumulation in those and later years.

In the late 1970s and 1980s, concerns about the negative impact of taxes became more pronounced. These concerns reflected the more conservative political environment in some major countries (notably the United States, the United Kingdom, and other Anglo-Saxon countries). This was the time of Ronald Reagan, Margaret Thatcher, and other conservative political leaders in some important countries. In the previous two decades, 1950–1970, several advanced countries had experienced substantial tax increases that had funded newly created social programs and "*welfare states*". During those years, the economies of these countries had been performing well ([Barro – Sala-i-Martin 1995](#), Chapter 10).



In developing countries, it had soon become clear that the “quality” of the investments made was also an important variable. Economic variables reflecting the quality of investment, such as the “capital-output ratio” or the “incremental capital-output ratio”, became relevant. Some economists, such as Hicks, pointed out that not everything that was called investment was productive and contributed to growth. Some were pure waste. Classifications and designations could be misleading at times. Not all countries classified as investments what were in fact investments (Brown 1980). The advantageous label assigned to “investment” encouraged “fake entries” and misclassification. The quality of investment and the measurement of capital had not attracted the attention that they should have attracted, as John Hicks would point out in 1969, when he wrote: “The measurement of capital is one of the nastiest jobs that economists have set to statisticians” (Hicks 1981: 204).

These classification problems were often ignored by economists, who continued to use these variables in their writings without qualification. There appeared reports of “roads to nowhere” and of “cathedrals in the desert” that consumed tax funds but produced no real benefits, or growth. Corruption and misuse of public funds were facilitated by the existence of poor institutions and inadequate controls (Tanzi 2000). At times, investment categories included significant expenses that had been, in effect, the payment of “bribes”.

The quality of a country’s institutions attracted the attention of some economists and economic researchers. Institutional economics gained prominence and Douglas C. North was awarded the Nobel Prize in Economics for his contributions to the field (North 1981). Institutions were to continue to attract the attention of several economists in subsequent years, including various works by Acemoglu and others (see, inter alia, Acemoglu et al. 2003; Acemoglu et al. 2005; Acemoglu – Robinson 2012). The extent to which the institutions of the colonial powers’ have harmed the growth of some, now free, poor countries was one such area (Jha – Talathi 2021). The relationship between institutions and corruption also became an important area of academic research (Tanzi 2000; Abed – Gupta 2002).

Kuznets (1966) and others theorized that poor countries need not only “physical capital”, including infrastructure, but also “human capital” for growth. Useful knowledge is embedded in people, and individuals who have more human capital tend to be more productive. Human capital can be created through public schools, which are funded by taxes. Higher tax levels can fund the creation of more human capital. In later years, the average years of schooling of the population became important variables in some papers that tried to relate human capital to growth.¹ As with the measurement of investment, however, the question of how well “years of schooling” is a good measure of productive human capital remained open.

Funds allocated to research and development and research institutions could also create useful knowledge, especially, by using foreign direct investment or by sending students to study in good schools abroad, as did first South Korea and then China, the latter on a large scale (Tanzi 2020). Moreover, opening up a country’s economy was likely to contribute to growth. Tax incentives were used by many developing countries to attract foreign investment that would bring new technologies to the country. These incentives would play an increasingly important role in many countries.

¹Among many others: Romer 1990; Barro – Sala-i-Martin 1995; Hanushek – Kimko 2000; Barro 2001, 2013; de la Fuente – Doménech 2006; Hanushek – Woessmann 2012, 2020; Delgado et al. 2014; Barro – Lee 2015.



All the above indicates how difficult would be the attempts to solve the “*mystery of economic growth*” by focusing on single variables or simple relationships, including the impact of taxes.

3. SOLOW'S NEOCLASSICAL GROWTH THEORY

In the decades of the 1950s and 1960s, economics became, to an increasing extent, more mathematical and more model-based. Models of economic relationships were developed by clever economists who had strong mathematical backgrounds. The tools of mathematics were increasingly used to study possible relationships between economic variables and their implications for economic development and growth. Econometrics was also widely used in those years, to test “*quantitative*” relationships between economic variables. This stressed the importance of correctly measuring the variables used. Often, econometric results distracted from the fact that the variables used in the regressions might not have been properly measured.

At the age of 32, Solow published two successive articles (Solow 1956, 1957) which had an incredible impact on the theory of economic growth. In part because of these articles, he was awarded the Nobel Memorial Prize in Economic Sciences in 1987. In these articles, Solow conceptualized how capital accumulation, promoted by a country's savings rate, could contribute to economic growth. However, he had no measure of capital and assumed that what was not spent by families became “*capital*”. To this capital, he assigned a mathematical symbol, “*K*”. The use of mathematical symbols in economic models often had the result of dispensing the author from the need to define precisely what a given variable (such as capital) is consisted of, and what it is measuring. It also created the impression that the variable reflected well-defined, objective and quantitative entities. This helped create the impression that it was unnecessary to provide a detailed description of the variable. This aspect was not, and would not be, limited to Solow's work.

Solow's studies, mentioned above, became very influential in wide circles. They created a model that was later called “*neoclassical growth theory*”. It was a model that made growth dependent on the size of macro variables (capital and labour), variables that are spontaneously or largely created by the market economy. It introduced the use of aggregate production functions. In the Solow model, government policies did not seem to play any particular role in the process of economic growth. Both capital and labour could make the economy grow. Solow was aware that theories are based on assumptions and that these assumptions may not always be realistic. However, he hoped that “the final results [would not] be very sensitive [to the assumptions]” (Solow 1956: 65). In his model, as mentioned earlier, taxes do not seem to play a role, except, perhaps, by affecting the savings rate, which determines the capital stock.

The “*practical*” results of a theory depend not only on the assumptions it uses but also on how faithfully the mathematical symbols it employs describe the real-life economic variables they represent. These variables may be real capital, human capital, labour, technological change, and so on. In the real world, these variables are often difficult to measure and even to describe. For these reasons, it is sometimes difficult to determine whether the work of economists in theoretical models reflects true economic relationships; or whether they are mathematical speculations that have little to do with economic reality.



Clear examples of this potential problem can be found in several of the 15 essays published in *Theory of Optimal Economic Growth*, a book edited in 1967 by Karl Shell, a colleague of Solow at the Massachusetts Institute of Technology (MIT). Several of the essays in this book were largely mathematical extensions of an unusual and highly theoretical article by Frank P. Ramsey, published in 1928. His article is considered, by some, to be the first genuine work on the theory of economic growth. This article was decades ahead of its time.

Solow's two seminal articles attempted to assess the impact of capital accumulation on growth. As noted above, they popularized the use of aggregate production functions. The articles concluded that the larger is a country's capital stock, the larger will be its contribution to output. Since high-income individuals save a larger portion of their income, the Solow model would, in some sense, lead to a bias for more uneven income distributions. However, he recognized that additional capital would meet diminishing returns. This addition would not increase the (long-run) growth rate if the population continued to grow at a constant pace.

To maintain a constant per capita income, capital must grow in line with labour, so that capital per unit of effective labour does not change. The long-run growth rate can then only increase because of spontaneous technological progress. John Hicks would point out that technological progress could come from capital embodied in depreciation allowances, even if the total capital stock did not change (Hicks 1965: 304). It could also come from the addition of human capital. Both depreciation allowances and human capital are variables that can, in principle, be influenced by tax policy.

Solow's neoclassical growth theory gave little scope to an explicit role for government in the context of long-run growth (as distinct from the countercyclical policy or the short-run aspect). Government policies can change the level of output one way or the other for a while, but they cannot change the (permanent) growth rate of an economy. Only technological progress together with population growth can do that. In the long run, the growth rate would converge toward the rate of technological change, which was assumed to be constant. In the real world, however, *it is not easy to distinguish what is a permanent change and what are temporary effects of policy*. Many factors, including climate and cultural changes, could affect the long-term growth rate, leading to further complications.

Solow had made an earlier contribution to growth accounting. He had argued that growth is potentially dependent on changes in some macroeconomic variables, notably capital and labour, in addition to productivity. In his estimation, much of the long-run growth in the United States was due to total factor productivity. However, his model left unanswered the question of why this was not also the case in many poor countries, and why it had not been the case before the 19th century. What drives differences in total factor productivity across countries? Romer (1986) and Lucas (1988) would later attempt to answer this question.

In the 1960s, there was great attention on the choice between “direct” and “indirect” taxes in the United States, largely because European countries relied heavily on indirect taxes after the discovery of the value-added tax in France, while the U.S. federal tax system continued to rely heavily on income taxes. Some economists, such as Harberger, focused on “... the comparative welfare costs, or excess burdens, of direct and indirect taxes... [and on the] choice between work and welfare and between saving and consumption” (Chase 1964: 295). From then on, economists paid increasing attention to the level of taxes and tax structures. The choice between equality and efficiency had also become more important (Okun 1975; Arndt 1987, Chapter 4).



4. THE STAGFLATION EXPERIENCE AND ITS IMPLICATIONS FOR TAX THEORY

In the 1980s and 1990s, several economists (Romer, Lucas, Barro, and others) developed new theories that addressed how certain policies (including tax policies) might affect the incentives that are thought to drive individuals and firms in their actions. They theorized about how these policies might affect the productivity of labour and capital and “*total factor productivity*”. By that time, the tax levels in many advanced countries had become significantly higher than they had been before the war. Income tax rates had also been driven up by legislation and, in the 1970s and early 1980s, by the effects of the fiscal drag, created by high inflation and the taxation of “*nominal*” income, or non-inflation-adjusted income. High marginal tax rates were frequently in the news and increasingly under attack from various quarters especially in the United States (Tanzi 1980).

The view that the high taxes and the welfare programs created since World War II could impair personal incentives and harm economic growth was held by some economists and economic reporters. This view was also held by influential political figures, including President Reagan, at a time when political views had become increasingly conservative and highly suspicious of government action. In some ways, it was an intellectual environment similar to that which had prevailed in the distant past, when *laissez-faire* had been the guiding economic philosophy of the day.

The stagflation of the 1970s and early 1980s, combined with high tax rates on nominal income, drew the attention of economists to the potentially harmful role that taxes could have on incentives and on economic performance. This negative impact of taxes had been popularized by Arthur Laffer, a conservative economist, in the form of a simple curve (originally drawn on a napkin in a restaurant for some influential political figures in 1974). This “*napkin image*” later came to be known as the Laffer curve. It soon became a highly influential political and economic tool. The Laffer curve claimed to describe the relationship that existed between tax rates and economic responses to them. Compared with the analysis that had prevailed until then (see especially Musgrave 1959, Chapter 11), it was a far less sophisticated analysis. However, because of its simplicity, it was easily understood by politicians and by the public, and was much more attractive, partly because of the message it conveyed. The Laffer curve was based on a simple intuition and several strong assumptions (Tanzi 2014). It establishes an inverted U-shaped relationship between tax rates and government tax revenue.

The available literature on the Laffer curve contains diverse and conflicting evidence.² This may be understandable in part due to the structural and economic characteristics of different country or countries under study, in addition to model-related factors such as the model specification, the variables included in the model, and the time frame studied. However, as Tanzi (2014) and some others have argued, the basic hypothesis of the Laffer curve has fundamental shortcomings. The curve does not take into account: (i) the size of tax loopholes; (ii) the size of the informal economy and the degree of ease of switching from the formal economy to the informal economy; (iii) tax avoidance and evasion; and (iv) the nature of tax cuts, i.e., whether

²Henderson 1981; Fullerton 1982; Dalamagas 1998; Trabandt – Uhlig 2011, 2012; Nutahara 2015; Şen et al. 2019; Ferreira-Lopes et al. 2020; Şen – Bulut-Çevik 2021 for just some of it.



they are temporary or permanent (Şen – Bulut-Çevik 2021). Moreover, the model assumes that most taxpayers are driven by financial motives and by little else. Reputation, altruism, sense of community, need for the income earned, and so forth did not matter. It is assumed that individual workers are free to adjust their working hours to respond to changes in the incentives created by tax rates on their marginal earned income. This is a very questionable assumption for today's economies, which are often guided by fixed working schedules and by other rigidities. Moreover, the curve assumes that tax rates are the sole determinant of the revenue generated by the government. This is highly questionable because there can be a variety of variables that explain tax revenues collected, ranging from the sectoral structure of the economy, the GDP per capita, inflation, the degree of openness to international trade, and the quality of tax administration.

The proponents of the Laffer curve claimed that high marginal tax rates lead to significant reductions in labour force participation and work effort. They implicitly assumed that government welfare programs provide alternative sources of income to live on, for workers who stop working and remain idle. Under these conditions, untaxed leisure becomes more attractive to many workers than taxed work. Because of higher tax rates, labour force participation was assumed to decline, and so would the number of hours worked. The Laffer curve assumed that most workers, including dependent employees in large corporations, were free to choose how many hours they worked. Historical evidence shows that the workweek did decline significantly over time. However, much of the decline occurred before marginal tax rates became high. The United States did not even have an income tax until 1913, and by then the workweek had already declined significantly.

For the best-paid people, who could in principle have such freedom (sports and highly successful movie stars, corporate CEOs, leading professionals, and others in similarly advantageous situations), it was assumed that reputation and professional standing played no role in their work efforts, only money did. Faced with high tax rates on their marginal (highest) incomes, these highly paid “stars” would simply reduce their work efforts, to reduce their tax payments, thereby putting their privileged position and reputations at risk (Tanzi 2018: 374–375).

The “substitution effect” of taxes, to which, in the past, had been given less weight than the “income effect”, was assumed to predominate in the reactions of individuals and to overwhelm the income effect, which is the loss of income to a taxpayer who quits work, works less hours, or chooses a lower-paying job, because of high taxes. The Laffer curve claimed that high tax rates lead to less effort, less labour force participation and less production. In short, they were income and growth killers. Welfare programs were thought to contribute to these results.

These strong conclusions were highly questionable from the outset, based on little concrete empirical evidence and on much a priori biases and limited, small counter-example. It was reported that when Samuelson was first told about the Laffer curve, his reaction was that “the Laffer curve was good for a good laugh”. But many came to believe in it. In recent years, Scandinavian countries, which have some of the highest taxes in the world and very generous welfare programs, have also had the highest labour force participation rates. As noted above, the period of high taxes (1950–1965) had also been a period of high growth and good wage increases in many advanced countries.

The political environment that prevailed in the 1980s and 1990s, especially in Anglo-Saxon countries, could not fail to influence the views of many academic economists, who, like most



other people, are not immune to these influences. This was especially true for economists who initially had held conservative views. The distinction between long-run and short-run growth largely disappeared in many economic discussions in those years. The growth effects that some empirical studies reported were mostly for short periods. The truth was that no one knew what a country's natural long-run, future growth rate was, in order to assess the impact of particular policies on that rate. Moreover, one should not assume that a country's long-term growth rate is constant in order to take it as a reference and compare it with the economic performance of shorter periods.

5. NEW GROWTH THEORIES

In response to the new thinking that took hold, especially during the years of stagnation, in the 1970s and early 1980s, new theories of growth were developed, and new tax policies were adopted in the later part of the 1980s, including the “*Fundamental Tax Reform*” introduced by the Reagan administration in the United States in 1986. This reform drastically reduced tax rates on personal and corporate income and prompted other countries to do the same for competitive reasons. In 2017, this reform was followed by another major reform introduced by the Trump administration that sharply reduced taxes on corporate profits.

The substantial tax cuts introduced by these two major reforms were not as beneficial to economic growth as their proponents had expected. However, their impact on income distribution was significant. Both led to an increase in the Gini coefficient, and thus, to a significant worsening of the income distribution. Hopes of higher growth from these reforms had been traded against lower economic equity, even though equity was becoming increasingly important for many in today's world.

Recent growth theories emphasized the role of knowledge and competitive markets, markets that are free from government intervention. In the 1980s, the view that “*the market will sort it out*” had taken hold. This was the period characterized by “*market fundamentalism*”, an economic philosophy that assumed market supremacy and promoted globalization and free markets. Some of the social policies that had been introduced in the decades soon after World War II had come to be seen as interfering with the market and having a negative impact on the economy and on economic growth. One of these policies had been “the Treaty of Detroit” between the United Auto Workers and General Motors (followed by Ford and Chrysler) that the average annual rate of wage increase would be the percentage increase in productivity plus the percentage increase in consumer prices.³

In the 1980s and 1990s, taxes, especially high marginal tax rates, were cut and some previously instituted social programs and regulations were scaled back and weakened. Trade unions lost much of their power, the financial market became global, and tax competition between countries intensified, leading to more tax evasion. However, public spending was cut far less than taxes, partly because of pressures that continued to come from the aging populations that required more spending for pensions and health. These developments led to a rising public debt

³See Solow's (2017) own self-critical account pertaining to the policy-relevant origins of the Solow-model in which wages correspond to the marginal product of labour.



in many countries, which in some raised the prospect of future tax increases, to deal with rising debt burdens. The current pandemic added to these pressures.

Not surprisingly, the Gini coefficient, the statistic that measures the distribution of income and wealth within countries, rose over the years. In some countries, notably the United States, it rose sharply. As a result, the ethics and the fairness of the capitalist system would be increasingly questioned, making future economic policy increasingly difficult.

In the decades after the 1970s, much of the economic growth that took place would be appropriated by a small portion of the population, often the top one or five per cent. On the other hand, the wages of average, dependent workers hardly grew, while the compensation of managers and CEOs skyrocketed. The “*favourable tide*” of economic growth that had been expected to “*lift all boats*” had left many boats grounded. In the policies of many countries, the quest for equity had taken a back seat to the quest for efficiency. Unfortunately, this quest did not produce the expected or hoped-for results.

Among academic economists, the pursuit of growth received special attention during the years of market fundamentalism, especially the influence of total factor productivity, the variable that Solow had assumed to be constant in his earlier work. Economists stressed that some government policies might impede the use of, or access to, available technical knowledge. The “*endogenous growth theories*” advocated by Romer (1986) and by Lucas (1988) emerged. These endogenous growth theories attached great importance to the diffusion of new ideas and to the factors that might impede this diffusion. Fiscal factors received special attention, while the impact of changes in the size of traditional macro variables (K, L) on growth lost some of its importance in the new theories.

Romer was the first to note that many advanced countries had continued to grow even without an increase in their capital stock. The evidence from advanced countries also showed that output per hour worked had increased substantially over the long run. This evidence was at odds with Solow’s prediction that technological change was largely constant in the long run. Romer called attention to the fact that in the advanced parts of the world there had been a large accumulation of potentially useful knowledge in the long run. Much of this knowledge could be considered a classic “*public good*”, a good available at zero cost to anyone who could use it. Advanced countries had been able to access and use this knowledge, poor countries not so much, with some exceptions, such as China.

Romer held that a country’s economic performance depends not only on its stock of capital and labour, but also more importantly, on the stock of accumulated knowledge that is publicly available to the country, given the country’s ability to access and use that knowledge. The stock of free and economically useful knowledge grows over time, and it has grown especially since the beginning of the Industrial Revolution. The greater economic freedom enjoyed by individuals in the modern world, since the 19th century, has made it easier for many people in the rich countries to access and use this knowledge. Individuals and enterprises in free markets also have strong incentives to acquire new knowledge. If they acquire it, sooner or later, this knowledge becomes available and is potentially accessible to others. This creates positive externalities for other producers and can lead to “*exogenous growth*”. This phenomenon leads to an increase in total factor productivity and to the growth of countries’ GDP, unless there are obstacles (sometimes due to poor or bad government policies or perhaps due to the culture of the countries) that can prevent access to the efficient use of publicly available knowledge.



This is the case in many poor countries and also in some formerly rich countries, such as Argentina, Venezuela, and some others.

The idea that there are positive externalities to knowledge and ideas, in general, is also central to the original work of [Lucas \(1988\)](#) and his later work. The main difference with [Romer's \(1986\)](#) work seems to be in emphasis. In Lucas' model, the new knowledge is mainly embodied in people. The greater is the knowledge embodied in people, the greater will be their contribution to economic growth. This insight made human capital a subject of special attention in some later studies of economic growth. Most notable in this regard were the studies by Robert J. Barro. In a series of individual and collaborative papers, Barro focused heavily on human capital ([Barro – Lee 1994](#); [Barro – Sala-i-Martin 1995](#); [Barro 1999, 2001](#)).

6. THE IMPACT OF TAXES ON GROWTH

It is important to mention and to emphasize from the outset, because this is often forgotten, that the primary function of taxes is first to raise revenue to meet collective needs, needs that communities consider important and necessary for them. Without taxes, or with lower tax revenues, these collective needs could not be met, or would require government debt, which comes at a price, especially if it becomes high and leads to macroeconomic difficulties. Well-spent tax revenue can, of course, contribute to human capital, productivity, and hence growth. Over the past four decades, government debt has risen dramatically not only in developing countries but also globally. Therefore, when some economists argue for tax cuts for efficiency considerations, the full, potential impact of those cuts must be kept in mind.

Second, despite the arguments made by some economists, including Lucas, that societal equity should be ignored, and the focus of economic analysis should be on efficiency, equity has become an increasingly important objective in the eyes of the citizens of the modern world. Ignoring this objective, lower tax rates and government spending can have major implications for societies. It could also have implications for the continuous predominance and acceptance of the market economy. When societies become too unequal, as the United States has become, they invite populist policies and create unequal political power (see [Tanzi 2018](#)). Thus, there is always a trade-off between the narrow definition of tax efficiency and the pursuit of equity. Perhaps economists gave excessive importance to market equilibrium in the past. This had been understood already by some major economists including [Kaldor \(1972\)](#), [Kornai \(1992\)](#), and more recently [Solow \(2017\)](#) already cited by us above.

Third, some taxes are imposed to reduce known Pigouvian inefficiencies. In the coming years, many countries are likely to impose carbon taxes to reduce the harmful effects of climate change. These taxes may lead to some inefficiencies, but they are also expected to have positive effects on climate change, which is seen as a major existential threat ([Tanzi 2022](#)).

Fourth, most of the claims about the powerful effects of taxes on economic efficiency have come from the studies in the United States, and many of these studies were conducted by American economists. Some of these economists had known conservative biases. This means that additional efforts have been made to identify some tax effects that could be defined as inefficiencies. These studies have generally given preference to property taxes and to general sales taxes, in place of taxes on corporate income and on the incomes of high-income individuals. It is easy to see how their conclusions collide with widely held popular views. Property



taxes are very unpopular, and the use of general sales taxes would raise Gini coefficients to even higher levels than they have been in recent decades.

The most recent OECD data on tax revenues show that for the latest year for which data were available, 2019, the United States has had the lowest tax-to-GDP ratio (23.5%) of all 37 OECD countries, with the exceptions of Chile, Colombia, Mexico and Turkey, which are poorer countries, and Ireland (OECD 2020). Many rich OECD countries had tax rates nearly twice that of the United States. These include Austria, Belgium, Denmark, Finland, France, Italy and Sweden. Interestingly, all Anglo-Saxon countries were relatively low-taxed within the OECD, suggesting a difference that may be due to culture rather than to economic considerations.

Most of the reported high-tax countries have been doing relatively well economically and socially. They have continued to perform well on various global indexes of economic performance, including per capita income, labour force participation, income distribution, economic freedom, international competitiveness, life expectancy, and others. In general, it appears that they do relatively well as a group compared to the Anglo-Saxon countries. If taxes had as large a disincentive effects as some U.S. economists have claimed, differences in tax rates should translate much more strongly into differences in overall economic and social performance.

7. GENERAL CONCLUSION

There are hundreds of studies that have looked at the issue of the economic inefficiency of high tax levels and their impact on economic growth, as well as the negative impact of high tax rates on countries' economies. Some of these studies have been conducted by international organizations such as OECD, IMF and others. Many have been conducted by academic economists. It would be impossible to list or discuss these studies individually.⁴ Some of them have found some statistical effects, while others have not, some have found trivial effects. In general, taxes on consumption and property have been assumed to have small effects on growth while taxes on high incomes and on corporations have been assumed to have negative effects. The problem with this result is that property taxes are among the most unpopular taxes, and taxes on corporations and on high incomes help to keep the Gini coefficients as low as many citizens would expect them to be.

No real consensus on the impact of taxes has emerged from these studies. Moreover, most of them suffer from the flaws mentioned above, as they focus on a strictly and narrowly defined concept of efficiency and ignore the other objectives of taxation. They also have difficulty considering the impact that good public spending can have on productivity and growth. Interestingly, two books that had focused directly on economic growth (Jones 2002; Helpman 2004) barely mentioned taxes.

Overall, the relationship between taxes and growth is highly complex, both theoretically and empirically. As a result, it is difficult to make a clear statement on the relationship between these two variables. This is also evident, as we have tried to explain in this article, in the economic, social and political developments throughout history.

⁴For some selected studies, see Atkinson 1995; Engen – Skinner 1996; Auerbach – Slemrod 1997; Johansson et al. 2008; Saez et al. 2012.



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