Practice test

16 May 2022

**Grupo 1**

Consider an economy described by the following Cobb-Douglas production function, where the partial elasticity of output with respect to physical capital equals 0.6:

Yt = At.Ktα.(ht.Lt)1-α

1. Knowing that in 2021 the rates of growth of total factor productivity (A), human capital per worker (h), labour force (L) and physical capital per worker (K/L) were, respectively, 3%, 1%, 2% and 1.5%, calculate the rate of growth of average labour productivity in that year.

*Answer*:

*r(K/L)=r(K)-r(L) donde 0,015=r(K)-0,02 donde r(K)=0,035*

*r(Y) = r(A)+0,6r(K)+0,4r(h)+0,4r(L) = 0,03+0,6\*0,035+0,4\*0,01+0,4\*0,02 = 0,063*

*r(Y/L)=r(Y)-r(L)=0,063-0,02=0,043=4,3%*

2. If the rates of growth remain constant as above in the future, how many years will be needed for the stock of capital to be 150% of its current value?

*Answer:*

*r(K)=0,035*

*ln(1,5)/ln(1,035)=11,8~*

*In approximately 12 years.*

3. Discuss the following statement: “if total factor productivity (A) in economy X is larger than in economy Y, then innovation in X is more intensive than in Y.”

*Answer: Total factor productivity (TFP), designated in the equation by A, is normally considered as an indicator of technological innovation and, in that light, the phrase would be correct, insofar as it refers to the growth of GDP that would not be explained either by the growth of labour or by the growth of capital, but for this innovation. However, given that the assessment of the size of TFP is, in the case of this production function, a statistical residue that depends on the accuracy of the measure of capital and of labour, several economists have suggested prudence in the interpretation of the estimation result and in the interpretation of the value of A, which could represent effects other than those of innovation. In fact, one of the key critics of the Solow and other likeminded growth models is that the residue (A) is so large that it is a better explanation of GDP growth than capital and labour. Therefore, some economist call TFP the “coefficient of ignorance”, which means that we don’t really know, for sure, what TFP represents.*

**Grupo 2**

“The inequality $r>g$ implies that assets from the past are recapitalized faster than the pace of progress in production and wages. This inequality expresses a fundamental logical contradiction. The entrepreneur inevitably tends to transform himself into a rentier and to dominate more and more strongly those who only own their work. Once constituted, capital reproduces itself faster than production grows. The past devours the future.” (Thomas Piketty, “O Capital do Século XXI)

1. Briefly discuss whether the inequality indicated by Piketty describes a real trend in the evolution of contemporary economies.

*Answer: The data presented by Piketty and his team, on the basis of income inequality, confirm the worsening of inequality. Some economists, however, suggest that the measure of “r” is more debatable than that of “g” (GDP growth rate), given that it would be a rate referring to differentiated income flows. If the comparison is with a proxy, the public debt interest rate or the central bank reference rate, the secular evolution of “r” would be reduced and would even have been reduced throughout the second half of the 20th century and in the 21st century, for example. In any case, the transformation of capitalists into rentiers was also pointed out by leading economists, such as Keynes and Misnky, who focused on the inherent tendency of capitalist to become speculative and unstable. None of these economists, however, explained how such changes happen and their fundamental role in the process of capital accumulation. Therefore, they focus their analysis of this problem on the financial system alone (Keynes and Minsky, for example, advocated for the state control of the financial system, whereas Piketty recommends a progressive tax on wealth), neglecting the analysis of the conditions under which wealth, as surplus and capital, is created, accumulated, reproduced, appropriated and deployed, how this reflects labour conditions and struggles in production, as well as the power that arises from the continuous innovation in finance required to provide money for the continuous accumulation of capital to occur, and struggles between factions of capital for the realization and appropriation of profits.*

2. Is the concept of capital presented by Piketty compatible or comparable with that of classical economics, when its authors began the modern study of the processes of growth and social inequality? Briefly present your argument on the issue.

*Answer: Not comparable. The concept of capital in classical economics, when modern economic science began, referred to the means of production, or the ownership of fixed capital goods that were instruments of production and that represented the investment of profits obtained through the exploitation of labour. In Marx, capital was not reduced to physical capital – machines and other physical means of production – or money, or accumulated wealth; it entailed the idea of the means to generate profits to accumulate more capital. Therefore, capital was not one thing, means of production or money, a machine, a property or a bank account, independently of how they were deployed to generate profits. Piketty’s concept of capital refers to all patrimonial assets, commonly referred to as “wealth”, which include physical capital, in the classical sense, but also other assets or income, such as real estate values, corporate shares ​​and others, independently of their utilization in the circuit of capital accumulation. For example, precautionary savings from wage work are considered by Piketty “wealth” and, therefore, “capital” in the same way as hoarding of stock from corporate profits and means of production and money utilized to produce commodities for profit.*

**Grupo 3**

“During the early 1930s, Britain looked towards fostering trade with its Empire to offset effects of trade barriers and shrinking world trade. While empire self-sufficiency was not possible given that a high percentage of colonial exports went to countries outside the Empire, an Imperial Economic Conference met in Ottawa between July and August 1932 to improve the situation. The British hoped to persuade the dominions to lower tariffs and enable free trade within the Empire.”

(documento do governo britânico sobre a estratégia de tarifas alfandegárias, no contexto da depressão económica e da redução do comércio mundial)

1. Can protectionism be considered a form of industrial policy?

*Answer: Yes, protectionism can be considered a form of industrial policy, in the broadest sense of the term, insofar as it seeks, through the control of trade and/or exchange flows, to determine relative prices and production conditions and realization of a national economy, including the determination of markets, sectors or companies that are favored by these rules. Throughout the 19th and 20th centuries, but also in the 21st century, the dominant economies tended to refuse and attack the protectionism of less developed economies, insofar as they promoted their exports and strengthened their power. In the example mentioned in the text, the authorities of the United Kingdom, which had already ceased to be the dominant power in the first third of the 20th century, indicate that they sought to create, within their Empire, a trade space with reduced tariffs that favored the metropolis, to counteract the difficulty of exporting and importing that came to exist in the relationship with other economies, given the elevation of these customs barriers outside the Empire. Protectionism can be pursued by different means: tariff duties on imports and exports; quotas, phytosanitary rules, and preferential markets; barriers to entry, limitations on foreign direct investment, acquisitions by and mergers with foreign companies, and profit repatriation; patents; and others. These specific policy measures can be adopted for protectionist reasons or to pursue policy goals that are different from market protectionism – such as to increase fiscal revenues, protect the wealth of consumers, improve technological and quality standards, create economies of scale, balance the balance of payments, develop indigenous capabilities, prevent takeovers and loss o capabilities, and so on. These measures, and many others - such as those related to innovation, labour conditions, coordination of complementary and of competitive investment, and of phasing out of products, processes and firms – can be considered as part of selective industrial policies insofar as they are aimed at specific industries, firms, technologies and markets, deal with the static coordination problem (complementary and competitive investment, and the re-utilization or compensation for non-transferable specific assets and skills) and the dynamic coordination problem (learning and exploring new industrial frontiers), along the industrial and business cycle, and promote efficiency for the economy as a whole.*

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2. Briefly discuss the use of tariffs as a way of promoting infant industries in a developing economy.

Answer: Import and export tariffs can be part of what is called custom or trade protectionism – which also include other policies like phytosanitary controls and import/export physical quotas. Insofar as trade protectionism is concerned, import tariffs increase the costs of imports in the domestic market, which is one way of providing breathing space for the birth and development of domestic industries and companies, as it reduces the competiveness and competition, in the domestic market, of products manufactured by external companies, which may have greater maturity in the production cycle and therefore, higher productivity and lower relative prices. Tariffs on exports, insofar as protectionism is concerned, can be utilized to reduce the profitability of exports and, therefore, discourage them relative to other utilizations of the goods being charged with export duties – for example, this may be the case of trying to reduce exports of unprocessed primary goods (like minerals, aluminum and other metals, or agriculture commodities such as cotton fibers, timber, tobacco leaves, coffee beans, cocoa or cashew nuts, etc.) by charging duties on these exports in order to promote the processing of these goods by domestic in the domestic economy, to increase value added and encourage industrialization. Of course, the adoption of these measures depends on specific market and industry conditions, economic strategies and capabilities, international agreements, etc. All the major economies – like the UK, the USA, France, Germany, Japan, China, etc. – that have come to play an important role in recent development used, at the beginning and at different stages of their modern industrial growth, some form of customs protectionism. Likewise, the very small group of so called emerging or/and industrializing economies – like South Korea, Taiwan, Brazil, India, Russia, South Africa, amongst others – have also utilized, intensively, extensively and selectively, different forms of trade protectionism.

The Portuguese State used trade protectionism extensively throughout the dictatorship period (1926-1974). Moreover, Portuguese colonialism was also one way of expanding protectionism in two ways: by protecting the resources and markets of the so-called Portuguese colonial Empire, or Portuguese/Escudo economic space, against other colonial Empires; and by creating preferential markets, in the colonies, for Portuguese goods, services and finance, and for scrapped and obsolete means of production from Portuguese firms, which helped expand, concentrate and modernize the Portuguese economy. Likewise, all other colonial Empires worked in similar ways as very large-scale protected markets for their colonial powers.

**(Note 1: other answers to theoretical questions can be considered, as long as they are based on consistent arguments and examples. Note 2: the answers will be considered even if they don’t have all the details, nuances and examples of the model answer, as long as they are coherent and consistently and logically integrate the major components of the answer).**