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A reassessment of Mankiw, Romer and Weil study

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Abstract

In their benchmark study, Mankiw, Romer and Weil (1992) concluded that international income variations are sufficiently explained by augmented Solow model. The aim of this paper is to replicate their empirical study, for the periods 1960-1985, 1960-2019 and 1970-2019. We reassess the textbook and augmented Solow models and we examine for convergence in standards of living by applying the Ordinary Least Squares (OLS). The empirical analysis does not confirm the initial findings of MRW, the results are somehow mixed. Also, a panel data approach on textbook and augmented Solow regression is used to allow differences in aggregate production functions among countries, for the period 1970-2019. In this case, the results are statistically significant and consist a good explanation of income disparities at a global level.

List of Acronyms

CV	Coefficient of Variance
GDP	Gross Domestic Product
LSDV	Least Square Dummy Variable
MRW	Mankiw Romer Weil
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
PWT	Penn World Table
WB	World Bank

Keywords

Economic growth, Solow models, Convergence, Panel analysis

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1. Introduction

The purpose of this study is to empirically reassess how well the basic and the augmented Solow model explain the income differences between countries, and to test the existence of convergence. This aim can be achieved through the replication of the research conducted by MRW in their article *'A Contribution to the Empirics of Economic Growth'* (1992) by using updated data.

MRW (1992) studied whether the Solow model verified cross-country variations in living standards from 1960 to 1985. This paper uses two growth models. The first is the textbook Solow model expounded by Robert Solow (1956), in which he explains the relationship between output growth and capital accumulation, as well as exogenous labor and technological growth. The second is the augmented Solow model which was introduced by MRW (1992) and explains the relationship between income per capita and capital, human accumulation and labor growth. Their empirical work shows that the augmented Solow model can explain most income differences.

In addition, this paper examines the convergence among countries. According to Solow's model predictions, the countries will converge to different steady-states when the countries have lags in the diffusion of the technology, the population growth and the capital. As a result, there is "conditional convergence". He also examines the speed of convergence, which is the rate that convergence occurs. Additionally, in their empirical study MRW (1992) show that there is significant convergence in income per worker among countries.

On the basis of this method, we used the latest data covering the period from 1960 to 2019 to re-examine the empirical framework of MRW. Three different databases, PWT 10, WB and Barro-Lee-Dataset, were merged using programming tools in the software *R* to create the sample. According to the MRW classification, the sample is divided into three sub-samples: Non-oil, Intermediate and OECD countries. Then, we run the cross-sectional regressions with OLS. There are cases where the results agree with the findings of MRW research, while others show that the results contradict the conclusions of MRW study.

Moreover, for in-depth investigation of the textbook and augmented Solow models, a panel data technique is advocated and used. For the panel data analysis we use the LSDV method. The panel's approach key advantage is its capacity to compensate for differences in the aggregate production functions across economies. Based on LSDV, we include dummies per continent in the textbook and augmented regression, dummy for oil countries and dummy for OECD countries. In attempt to answer the questions: "How much the continents influence

the income per worker?", "Could the countries with oil dominant industries have an impact on income per worker?" and "What is the OECD's involvement in these regressions?". Eventually, the contribution of dummy variables proves that the results are statistically significant and differ importantly from the single cross-country regressions.

The rest of the paper is organized as follows: Section 2 covers the review of the literature, the examination of the Solow model and the definition of convergence. Section 3 provides the whole analysis of MRW empirical framework. Then, we report the methodology and the data in Section 4 and in Section 5 we present the empirical results from OLS regressions. Further, we extend the research in panel data analysis in Section 6. Semi-last, Section 7 discusses the historical replications of MRW study from other economists and finally in Section 8 the conclusions are presented.

2. Theoretical Background

2.1 Literature Review

Economic growth is commonly used to describe GDP growth. The GDP of a country is a measure of the size and health of its economy. It is defined as the total value of products and services produced within a certain time period. The economic growth attempts to give answers in these questions: “Why some countries are richer than others?”, “Why poor countries tend to grow faster than rich countries?”, “Is there any convergence phenomenon (catch-up effect) among countries?”.

Economic growth models may be divided into two basic categories: neoclassical growth models and endogenous growth models. According to the exogenous growth theory, economic growth is caused mainly by an exogenously given technological progress. The fundamental premise is that economic prosperity is largely driven by external, independent forces rather than internal, interrelated variables. Endogenous growth theory emphasizes the significance of population growth, human capital, and knowledge investment in creating macroeconomic growth, as opposed to external causes in which technical and scientific processes are independent of economic pressures. In endogenous growth models even technological progress through microfoundation can be endogenized. Moreover, in endogenous growth models it is provided to the policy makers a more precise way of how to promote economic growth.

Mathematically, the first neoclassical model was proposed by Evsey Domar (1946) in his paper ‘*Capital Expansion, Rate of Growth and Employment*’. Domar examined the relationship between capital accumulation and the full labor force. Domar's premise was that an economy will be in balance when its productive capacity equals its national revenue. His hypothesis was based on the assumption that the rate of national income growth was a result of the increase of labor and its productivity. Domar's method was based on general equilibrium theory, which states that demand equals supply. He created his model in a closed economic environment, ignoring the potential of foreign economies. From the supply side, the rate of increase of the production function was a function of the productive capacitycapital ratio in the following sequence with respect to time. On the demand side, Domar defines the rate of increase of national income as a function of the growth rate of investment over time multiplied by the marginal propensity to save (multiplier effect).

Overall, Domar's economic growth path leads to a failure to achieve full employment if the solution deviates from the equilibrium path.

Robert Solow (1956) proposed an alternative exogenous growth model to overcome the weaknesses of Domar growth model.[1] Solow says that changes in the production function are caused by increases (or declines) in savings rates, population growth, and technological process. This model is based on diminishing marginal product of capital[2] and the exogenous character of technological and labor growth.[3] In the long run period, as the economy approaches its steady-state the income per worker will increase only due to technological development.

In this study, we examine firstly the textbook Solow regression and secondly the Solow regression as augmented by MRW (1992). The augmented Solow model is a function of physical capital, human capital, and population growth. This model consists a satisfying explanation of difference in living standards among countries, makes reasonable the magnitudes of the coefficients and gives better results for the elasticity of output with respect to capital, α, and the elasticity of output with respect to human capital, β.

Since the 1980s, a new growth theory that endogenizes technological growth has been developed. The basic idea of this endogenous growth theory is the significance of increasing returns to scale. In fact, Allyn Young (1928) emphasized the significance of increasing returns to scale in economic growth. He might be recognized the founder of the modern theory of endogenous growth. Later, Young's student, Nicholas Kaldor, reveals the presence of increasing returns to scale in his model of growth (Kaldor, 1957) and incorporates them into his technological progress function. So, endogenous technological growth caused a debate between economists.

Thus, many economists worked on this topic theoretically, such as Romer (1986a, 1990), Lucas (1988), Grossman and Helpman (1991, 1994), Weitzman (1998) and Barro and Sala-i-Martin (2003). While the empirical literature grew extremely large, with representative

[1] There are three problems. The first is related to the instability of the equilibrium growth path, which indicated that once the system deviated from its equilibrium path, it would remain in a state of disequilibrium The balancing of Domar's longrun equilibrium path on a '*knife-edge'* equilibrium growth rate produced situations in which a little slide in the fixed proportions would result in a continuous failure to satisfy the rule of full capacity utilisation, either through persistent unemployment or inflation. The second problem was Domar's model's dependence on the multiplier effect, which Solow saw this as a short-term tool used to solve long-run difficulties. Third, the productivity capacity is affected only from capital accumulation, while Solow supports that labor is an important input for production function.

[2] According to the assumption of diminishing marginal product of capital, the more capital acquired, the less extra production created.

[3] Because the model is predicated on external technological and labor growth, it cannot explain the growth of these two variables. Because technology is external, firms cannot influence technological evolution through research initiatives.

papers such as Barro (1991), Alwyn Young (1991), Barro and Sala-i-Martin (1992), Hall and Jones, (1999), Temple (1999), Easterly & Levine (2001), Mankiw, Romer and Weil (1992), Quah (1993), Sala-i-Martin (2002), it is occupied with cross-sectional regression methods and focused on convergence. Additional empirical studies examining the relationship between international trade and economic growth have been conducted by Helpman and Krugman (1985), Grossman and Helpman (1989, 1990), and Rivera Batiz and Romer (1991). The review of empirical literature on growth theory reveals that findings are contradictory and far from definitive.

In order to provide practically the difference between neoclassical growth models and endogenous growth models, we describe the Romer's (1990) model, who received the Nobel Prize in 2018. His model is a standard model of endogenous economic theory.

Romer (1990) created growth models that are mainly based on ideas that endogenize technological development. In his view, new knowledge grows inside the economic system and has good impacts on production and growth of the output per worker. His model is an endogenous technological change equilibrium model in which long run growth is mainly driven by the acquisition of knowledge by forward-thinking, profit-maximizing individuals (Romer, 1986a, p.1003). Hence, the production of knowledge and other inputs exhibits increasing returns to scale. In Romer's view, "the creation of new knowledge by one firm is assumed to have a positive external effect on the production possibilities of other firms because knowledge cannot be perfectly patented or kept secret" (Romer, 1986a, p.1003). As a result, externalities, increasing returns on output, and diminishing returns on new knowledge, combine to form a well-specified competitive equilibrium model of growth. The conclusion is that countries can have different income per worker and it is not necessary to converge, because developing countries may growth at a slower rate or even fail to growth at all.

Solow and Romer models examine whether the poor countries tend to grow faster than rich countries and whether convergence among countries exists. Solow model predicts that developing (low-income countries) countries grow faster than developed (high-income countries) and argues with the convergence phenomenon. By contrast, Romer supports that poor countries cannot converge with wealth economies, because there are increasing returns in knowledge and the gap among countries over time exists. This comparison was carried out in order to understand better exogenous and endogenous growth models.

In this paper, the basis of the research is the Solow model and the augmented Solow model with human capital introduced by MRW. For this reason, we explain below the Solow model and afterwards we analyze the MRW empirical framework.

2.2 Solow Model

The Solow model, developed by Robert Solow and Trevor Swan in 1956, is widely regarded as one of the most fundamental contributions to economic growth theory. This model gives a simplified picture of the economy as a whole and aids to understanding the sources of economic development as well as the reasons for wealth disparities across countries (Acemoglu, 2008, ch.2). Solow and Swan thought that the key factors of economic development were the saving rate, the population growth rate, and the pace of technical progress (Jones, 2002, ch.2).

The Solow model is a dynamic model based on the neoclassical aggregate output function.

$$Y(t) = [A(t), K(t), L(t)] \tag{2.2.1}$$

,where $Y(t)$ is the aggregate production or real income at a certain point in time, which is generally expressed as real GDP. Total production is shown as a function of capital input at time t, $K(t)$, labor input at time $t, L(t)$, and a measure of productivity or technological level at time $t, A(t)$. According to neoclassical theory, the proportion of these two inputs might fluctuate due to changes in the pricing of these production factors (Solow, 1956).

The Solow model, like other macroeconomic models, assumes that only one good is produced. The economy is perfectly competitive in both the market for goods and the market for factors of production, indicating that it is in competitive general equilibrium (Acemoglu, 2008, ch.2, Solow, 1956). The competitive general equilibrium assumption indicates that the supply of the components of production and the final good are equal to their respective demand. The model posits that there are two kinds of market actors: households and companies. For the sake of simplicity, all homes and businesses are deemed homogeneous.

The factors of production are owned by households. They provide labor inelastically, while the national labor supply is represented by the country's population. The labor force and, as a result, the population expands at a constant exogenously determined rate. Households own capital and lease it to businesses. Capital ownership is formed via the process of savings and investments made by families in each unit of time. Solow (1956) assumes that households preserve a constant fraction of their income (sY) throughout time. This proportion of income saved is known as the savings rate, and it will be denoted as from here on (s). The Solow model assumes a closed economy, which implies that the amount

saved (sY) equals the amount invested (I) in each unit of time (Jones, 2002, ch.2). The capital rented by households to enterprises depreciates at a constant rate (δ). The following equation describes the net change in capital:

$$\dot{K} = sY - \delta K \tag{2.2.2}$$

, the 'dot' over K represents the time derivative.

Profit maximization is the driving force behind firms in the Solow model (Acemoglu, 2008, ch.2). Because all businesses in the economy experience the same production function as a result of firm homogeneity, we may assume an aggregate production function. The technological factor, A, encompasses the idea of efficiency with which the elements of production are turned into the final output (Weil, 2013, ch.7). The level of technological factor A increases exogenously at a constant rate g. According to the assumptions of the Solow model given above, labor and the factor of technology will expand at constant exogenous rates n and g, and respectively:

$$L(t) = L(0)e^{nt} \tag{2.2.3}$$

$$A(t) = A(0)e^{gt} \tag{2.2.4}$$

The constant returns to scale and declining marginal returns to capital and labor describe the neoclassical aggregate production function utilized in the Solow model. When the production function has constant returns to scale, increasing the factors of production by some percentage increases the ultimate output by the same proportion. When one of the components of production increases, overall output increases, but only by a modest amount each time. This signifies that the marginal returns on the factor of production are decreasing.

The Solow model's neoclassical production function can be represented by the Cobb-Douglas production function:

$$Y(t) = A(t)K(t)^{a}L(t)^{1-a} \quad , 0 < a < 1 \tag{2.2.5}$$

,where a is the proportion of production paid to capital and $(1 - a)$ is the proportion of output paid to labor.

Assuming that technological advancements boost labor productivity, the Cobb-Douglas production function will look like this:

$$Y(t) = K(t)^{a}(A(t)L(t))^{1-a} \tag{2.2.6}$$

,where $A(t)L(t)$ is the quantity of efficient labor.

The income per unit of effective labor may be expressed as a function of capital per unit of effective labor as follows:

$$\frac{Y(t)}{A(t)L(t)} = \left(\frac{K(t)}{A(t)L(t)}\right)^{a}\left(\frac{A(t)L(t)}{A(t)L(t)}\right)^{1-a} \xrightarrow{yields} y = k^{a} \tag{2.2.7}$$

,where y is the output per unit of effective labor and k is the capital per unit of effective labor.

Thus, capital accumulation is the primary source of economic development in the Solow model. The following equation determines how a change in the number of workers affects the level of total income:

$$\dot{k} = sf(k) - (n + g + \delta)k \tag{2.2.8}$$

,where $sf(k)$ is the proportion of income that is saved and finally invested.

According to the capital change equation (2.2.8), capital growth is positively connected to the amount of investments and negatively related to the depreciation rate, population growth rate, and pace of technical development. Because of declining marginal returns on production factors, the change in capital per unit of effective worker will finally equals zero:

$$\dot{k} = 0 \xrightarrow{yields} sf(k) = (n + g + \delta)k \tag{2.2.9}$$

When capital no longer accumulates and the worker-labor ratio remains constant, income growth stabilizes, and the economy reaches its steady-state capital and output per unit of effective labor. In this way, for the level of capital and income, a steady-state condition can be solved:

$$k_{s} = \left(\frac{s}{n+g+\delta}\right)^{\frac{1}{1-a}} \tag{2.2.10}$$

,where k_s is the steady-state capital per unit of effective labor.

Substituting the steady-state capital equation (2.2.10) into the production function (2.2.7) gives:

$$y_s = f(k_s) = \left(\frac{s}{n+g+\delta}\right)^{\frac{a}{1-a}} \tag{2.2.11}$$

,where y_s is the steady-state amount of production per unit of effective labor.

The disparity in living standards between nations is explained by Solow's steady-state level of output. Rich nations have bigger capital stocks because of higher investment rates and lower population growth rates, when all other variables remain constant.

The study introduced by MRW (1992) expanded the Solow model by adding human capitall as a third input. The new production function given as:

$$Y(t) = K(t)^a H(t)^\beta (A(t)L(t))^{1-a-\beta} \tag{2.2.12}$$

,where H is a stock level of human capital and β represents the fraction of income paid to human capital.

2.3 Convergence

Economic convergence exists when two or more economies reach a comparable level of development and wealth. Convergence can occur even when both developed (high-income countries) and developing (low-income countries) countries increase their investments in physical and human capital with the objective of increasing income per worker. Developing countries have the ability to grow faster than developed countries as new skills or equipment are added to the labor force. The advanced economies are likely to have high levels of capital accumulation. As a result, the marginal return from this additional investment tends to be decreasing. This means that higher-income countries seem to be more likely to have diminishing returns on capital and must constantly invent new technologies. This gives an opportunity to lower-income countries for convergent growth. Many developed countries, on the other hand, have created economic and political institutions that create a healthy economic atmosphere for a steady supply of technical advancements. Continuous technology

innovation can compensate for diminishing returns on human and physical capital expenditures.

According to Solow model, “Unconditional convergence” or “Absolute Convergence” means that least developed countries (low-income countries) will converge with developed countries under certain special conditions. If we suppose that different countries in the world have different level of capital accumulation, then rich countries have high level of output per worker and poor countries have low levels of output per worker. We also suppose that the two groups of nations are similar in every other way, such as saving rates, population growth rates, and the production function. The Solow model says that regardless of beginning capital-labor ratios, all of these nations will eventually reach the same steady-state. In other words, if countries share the same fundamental characteristics, capital-labor ratios and living standards will naturally converge, even if some countries start from way behind.

By contrast, even if economies differ in their saving rates, population growth rates, and production functions (because of uneven access to technology), they will converge to different steady-states with differing capital requirements and living conditions in the long term. This phenomenon called “Conditional Convergence”. This indicates that living standards will only converge among groupings of nations with similar characteristics. For example, if conditional convergence exists, a developing country with a low saving rate may one day converge to a richer country with a low saving rate, but it will never catch up to a wealthy country with a high saving rate.

3. Mankiw, Romer, Weil Framework

The Solow model starts with the basic equation:

$$Y(t) = C(t) + I(t) \tag{3.1.1}$$

Assume that s is a share of income saved, the equation (3.1.1) becomes:

$$Y(t) = (1 - s)Y(t) + I(t) \xrightarrow{yields} I(t) = sY(t) \tag{3.1.2}$$

MRW (1992) added human capital and found that the results are much better from the textbook Solow model. For this reason, we include the human capital in the aggregate production function, which distinguished by constant returns to scale and diminishing returns to human, physical capital and to effective labor:

$$Y(t) = [K(t), H(t), A(t)L(t)] \tag{3.1.3}$$

Physical and human capital have the following depreciation rates, δ_k and δ_h. Assumed that $\delta_k = \delta_h = \delta$. Define as, k the capital stock per efficient unit of labor $k = \frac{K}{AL}$, h the human capital stock per efficient unit of labor $h = \frac{H}{AL}$ and y the output per efficient unit of labor $y = \frac{Y}{AL} = F(\frac{K}{AL}, \frac{H}{AL}, 1) \xrightarrow{yields} y = f(k, h)$.

Physical and human capitals are modified at any given time:

$$\dot{K} = s_k Y - \delta_k K \tag{3.1.4}$$

$$\dot{H} = s_h Y - \delta_h H \tag{3.1.5}$$

Per effective unit of labor :

$$\frac{\dot{K}}{AL} = s_k F\left(\frac{K}{AL}, \frac{H}{AL}, 1\right) - \delta \frac{K}{AL} \xrightarrow{yields} \frac{\dot{K}}{AL} = s_k f(k, h) - \delta_k k \tag{3.1.6}$$

$$\frac{\dot{H}}{AL} = s_h F\left(\frac{H}{AL}, \frac{K}{AL}, 1\right) - \delta \frac{H}{AL} \xrightarrow{yields} \frac{\dot{H}}{AL} = s_h f(k,h) - \delta_h h \tag{3.1.7}$$

According to MRW the production function is:

$$Y_{it} = K_{it}^{a} H_{it}^{\beta} (A_{it} L_{it})^{1-\alpha-\beta} \tag{3.1.8}$$

, with $0 < a < 1,\ 0 < \beta < 1$ and $a + \beta < 1$,[4] for the country i (where $i = (1,2,..,n)$ at time t. $A_{it}L_{it}$ grows at rate $n_i + g_i$. Population growth and technology growth written as: $\frac{\dot{L_{it}}}{L_{it}} = n_i$ and $\frac{\dot{A_{it}}}{A_{it}} = g_i$.

The output per effective unit of labor (based on equation (3.1.8)):

$$y_{it} = \left(\frac{K_{it}}{A_{it}L_{it}}\right)^{a} \left(\frac{H_{it}}{A_{it}L_{it}}\right)^{\beta} \left(\frac{A_{it}L_{it}}{A_{it}L_{it}}\right)^{1-a-\beta} \xrightarrow{yields} y_{it} = k_{it}^{a} h_{it}^{\beta} \tag{3.1.9}$$

At this point, we will take the logarithms of the equations $k_{it} = \frac{K_{it}}{A_{it}L_{it}}$ and $h_{it} = \frac{H_{it}}{A_{it}L_{it}}$, because we have to study the development of $k_{it}\ and\ h_{it}$, respectively.

$$\ln(k_{it}) = \ln(K_{it}) - \ln(A_{it}) - \ln(L_{it}) \tag{3.1.10}$$

$$\ln(h_{it}) = \ln(H_{it}) - \ln(A_{it}) - \ln(L_{it}) \tag{3.1.11}$$

And when these equations are differentiated with regard to time, the result is:

$$\frac{\dot{k_1}}{k_i} = \frac{\dot{K_1}}{K_i} - \frac{\dot{A_1}}{A_i} - \frac{\dot{L_1}}{L_i} \tag{3.1.12}$$

$$\frac{\dot{h_1}}{h_i} = \frac{\dot{H}}{H_i} - \frac{\dot{A_1}}{A_i} - \frac{\dot{L_1}}{L_i} \tag{3.1.13}$$

Multiplied the equations (3.1.12) and (3.1.13) with $k_i = \frac{K_i}{A_i L_i}$ and $h_i = \frac{H_i}{A_i L_i}$.

[4] α+β<1 means decreasing returns to scale. If α+β=1, there constant returns to scale and in this model cannot exist steady-state. MRW(1992)

$$\dot{k}_\iota = \frac{\dot{K}_\iota}{K_i}\frac{K_i}{A_i L_i} - \frac{\dot{A}_\iota}{A_i}k_i - \frac{\dot{L}_\iota}{L_i}k_i \xrightarrow{yields} \frac{\dot{K}_\iota}{A_i L_i} = \dot{k}_\iota + g_i k_i + n_i k_i \xrightarrow{yields} s_{ki} f(k_i) - \delta k_i$$

$$= \dot{k}_\iota + g_i k_i + n_i k_i \xrightarrow{yields} \dot{k}_\iota = s_{ki} f(k_i) - (\delta + g_i + n_i)k_i \xrightarrow{yields}$$

$$\dot{k}_\iota = s_{ki} y_{it} - (\delta + g_i + n_i)k_{it} \tag{3.1.14}$$

$$\dot{h}_\iota = \frac{\dot{H}_\iota}{H_i}\frac{H_i}{A_i L_i} - \frac{\dot{A}_\iota}{A_i}h_i - \frac{\dot{L}_\iota}{L_i}h_i \xrightarrow{yields} \frac{\dot{H}_\iota}{A_i L_i} = \dot{h}_\iota + g_i h_i + n_i h_i \xrightarrow{yields} s_{hi} f(h_i) - \delta h_i$$

$$= \dot{h}_\iota + g_i h_i + n_i h_i \xrightarrow{yields} \dot{h}_\iota = s_{hi} f(h_i) - (\delta + g_i + n_i)h_i \xrightarrow{yields}$$

$$\dot{h}_\iota = s_{hi} y_{it} - (\delta + g_i + n_i)h_{it} \tag{3.1.15}$$

<u>Steady-States:</u> $\dot{k}_\iota = \dot{h}_\iota = 0$

$$k_i = \frac{s_{ki} y_i}{(\delta + g_i + n_i)} \xrightarrow{yields} k_i = \frac{s_{ki} k_i^a h_i^\beta}{(\delta + g_i + n_i)} \tag{3.1.16}$$

$$h_i = \frac{s_{hi} y_i}{(\delta + g_i + n_i)} \xrightarrow{yields} h_i = \frac{s_{hi} k_i^a h_i^\beta}{(\delta + g_i + n_i)} \xrightarrow{yields} h_i^\beta = \left(\frac{s_{hi}^\beta k_i^{a\beta}}{(\delta + g_i + n_i)^\beta}\right)^{\frac{1}{1-\beta}} \tag{3.1.17}$$

Plugging (3.1.16) into (3.1.17) and (3.1.17) into (3.1.16) results:

$$k_i = \left(\frac{s_{ki}^{1-\beta} s_{hi}^\beta}{(\delta + g_i + n_i)}\right)^{(1-\alpha-\beta)} \tag{3.1.18}$$

$$h_i = \left(\frac{s_{ki}^a s_{hi}^{1-a}}{(\delta + g_i + n_i)}\right)^{(1-\alpha-\beta)} \tag{3.1.19}$$

<u>Equilibrium:</u>

$$k_i^* = \left[\left(\frac{s_{ki}}{\delta + g_i + n_i}\right)^{1-\beta}\left(\frac{s_{hi}}{\delta + g_i + n_i}\right)^\beta\right]^{\frac{1}{1-\alpha-\beta}} \tag{3.1.20}*$$

$$h_i^* = \left[\left(\frac{s_{ki}}{\delta+g_i+n_i}\right)^{a}\left(\frac{s_{hi}}{\delta+g_i+n_i}\right)^{1-a}\right]^{\frac{1}{1-a-\beta}} \quad (3.1.21)^*$$

$$y_{it}^* = \frac{Y_{it}}{L_{it}} = A_{it}\left(\frac{s_{ki}}{\delta+g_i+n_i}\right)^{\frac{a}{1-a-\beta}}\left(\frac{s_{hi}}{\delta+g_i+n_i}\right)^{\frac{\beta}{1-a-\beta}} \quad (3.1.22)^*$$

Taking logarithms and assumed that: $A_{it} = \overline{A}_\iota e^{gt}$

$$\ln(y_{it}^*) = \ln \overline{A}_\iota + gt + \frac{a}{1-a-\beta}\ln\left(\frac{s_{ki}}{\delta+g_i+n_i}\right) + \frac{\beta}{1-a-\beta}\ln\left(\frac{s_{hi}}{\delta+g_i+n_i}\right) \quad (3.1.23)$$

The equation (3.1.23) demonstrates the steady-states of each country i and used from MRW to show how saving and population growth rates can explain the differences in income per worker among countries. MRW in their study found that the elasticity of output with regard to capital, a, is high. One explanation for this result is that capital had a more general concept as definition, for example the human capital it could be included into the accumulation of capital (Islam 1995). By adding human capital, MRW accomplished a better fit of model and normal estimates for a.

In this equation assumed that $g + \delta = 0.05$. Also, exists the term $\ln A(0) + gt$. We know that g is exogenous and same for all the countries. Therefore, g does not change over time and this means that is a specific number, as a result gt be constant. By contrast, MRW said that "the A(0) term reflects not just technology but resource endowments, climate, institutions and so on, it may therefore differ across countries". Note that $\ln A(0) = a + \varepsilon$, where a is a constant and ε is a shock term for each country i. Thus, the equation (3.1.23) becomes at time 0 for simplicity:

$$\ln(y_{it}^*) = \ln A_i(0) + \frac{a}{1-a-\beta}\ln(s_{ki}^*) + \frac{\beta}{1-a-\beta}\ln(s_{hi}^*) - \frac{a+\beta}{1-a-\beta}\ln(\delta + g_i + n_i) + \varepsilon_i \quad (3.1.23b)$$

MRW estimated the equation with OLS, based on the assumption that the shock term does not related with saving and population growth rates . $e\ E(s_{ki}\varepsilon_i) = E(n_{ki}\varepsilon_i) = 0$ [5]. Firstly, we estimate the basic Solow equation without human capital:

$$\ln(y_{it}^*) = \ln A_i(0) + \frac{a}{1-a}\ln(s_{ki}^*) + -\frac{a}{1-a}\ln(\delta + g_i + n_i) + \varepsilon_i \quad (3.1.23a)$$

and after the equation (3.1.23b).

Based on conditional convergence, the countries converge to different steady-states, because they have different physical and human capitals and population growth. Let's define as y_i^* the output per effective unit of labor at steady-state level and y_{it} the actual value of output per effective unit of worker at any time t.

$$\frac{d\ln(y_{it})}{dt} = \gamma[\ln(y_i^*) - \ln(y_{it})] \quad (3.1.24)$$

,where $\gamma = (\delta + g_i + n_i)(1 - a - \beta)\ and\ \beta > 0$.

Solving (3.1.24):

$$\ln(y_{it}) = (1 - e^{-\gamma t})\ln(y_i^*) + e^{-\gamma t}\ln(y_i(0)) \quad (3.1.25)$$

Subtracting the $\ln(y_i(0))$ from both sides in equation (3.1.25), we have:

$$\ln(y_{it}) - \ln(y_i(0)) = (1 - e^{-\gamma t})\ln(y_i^*) - (1 - e^{-\gamma t})\ln(y_i(0)) \quad (3.1.26)$$

Substituting the $\ln(y_i^*)$ from (3.1.23b) in (3.1.26):

$$\ln\left(\frac{y_{it}}{y_i(0)}\right) = (1 - e^{-\gamma t})\left(\frac{a}{1-a-\beta}\ln(s_{ki}^*) + \frac{\beta}{1-a-\beta}\ln(s_{hi}^*) - \frac{a+\beta}{1-a-\beta}\ln(\delta + g_i + n_i)\right) - (1 - e^{-\gamma t})\ln\big(y_i(0)\big) + \varepsilon_i \quad (3.1.27)$$

[5] There are three reasons for the independence. First, this kind of independence exists in other basic growth models. Second, we have the opportunity to examine methodical the relation between investment, population growth and income and confirm if the relationship is valid. Third, the model calculates the signs and the magnitudes of the coefficients and we can check the validity of Solow model.

The key equations (3.1.23a), (3.1.23b) and (3.1.27), which where developed earlier in the model specification section, will be exposed to regression analysis.

4. Methodology and Data

The aim of this thesis is to estimate the equations described in section 3. The regression analysis helps us to see how much the independent variables influence the dependent variable and what is the direction of dependent variable in changes of the independent variables. By following MRW (1992) we use OLS.[6]

The sample is derived from the merge of three databases, PWT 10 [7,8] and the WB, over the period 1960 to 2019 and the Barro-Lee-Dataset over the period 1960 to 2015. For this sample, countries are selected based on availability of data for the selected years. The dataset includes real income, physical capital (or investment), population growth and human capital for all the available countries. The data are annual. We examine three different periods: 1960-1985 (as MRW), 1960-2019 and 1970-2019[9] (in attempt to have the same countries with MRW).

To provide a high-quality quantitative analysis, we used *R*, an open-source language and statistical environment helpful for statistical computation and visualization. As a result, while performing empirical investigations in the field of economic science, it is feasible to take advantage of large data and *R*'s statistical and graphical techniques. Using *R*, we merge the databases of PWT 10, WB and Barro-Lee-Dataset. Moreover, *R* contains a number of packages that allow one to conduct a variety of econometric tests that indicate the level of accuracy in model estimations.

The variables defined below will be used in the regression:

- *log(gdp)*[10]: is the natural logarithm of real GDP per worker. It is calculated as *Y/L*. From the PWT 10 the variable *Y* matches the variable rgdpna (Real GDP at constant 2017 national prices (in mil. 2017US$) and from the WB the variable *L* is the total population between ages 15-64, with indicator name "Population ages 15-64, total" and indicator code "SP.POP.1564.TO". For the calculation, it is necessary to multiply

[6] This method has got a number of criticisms. The first criticism was by Islam (1995) who argued that country-specific characteristics of the aggregate production function, which are connected with the independent variables are ignored in the single cross-section approach used by MRW (1992), giving their estimates an omitted variable bias. McDonald and Roberts (2002), on the other hand, found that country-specific impacts are minor in the OECD sample.
[7] MRW (1992) the PWT 4.0 version (Summers and Heston, 1988).
[8] The list with differences between previous versions and 10.0 of PWT is available on website at: https://www.rug.nl/ggdc/docs/pwt100-whatsnew.pdf
[9] In sample 1970-2019 added countries, because there are more availlable data for some countries from 1970 than in 1960.
[10] In log(gdp) include the following variables: log(gdp60), log(gdp70), log(gdp85) and log(gdp19).

the rgdpna with 1.000.000 (because in PWT 10 is expressed in millions), that is $rgdpna * 1.000.000 = Y$. Finally, the output per worker is calculated as $\frac{rgdpna*1000000}{L} = \frac{Y}{L}$. Data source: PWT 10 and WB.

- *log(invest)*: is the natural logarithm of fixed capital formation (as share of GDP). To create the investment as share of GDP, is used the variable rnna (Capital stock at constant 2017 national prices (in mil. 2017US$)), the delta (Average depreciation rate of the capital stock) and rgdpna (Real GDP at constant 2017 national prices (in mil. 2017US$) from PWT 10. From the following equation we will create the investment *I* (for now not as share of GDP) for each country over the period 1960-2019:

$$I_{1961} = rnna_{1961} - rnna_{1960}(1 - delta_{1960})$$
$$\dots$$
$$I_{2019} = rnna_{2019} - rnna_{2018}(1 - delta_{2018})$$

In this point of study, we calculate the investment as share of GDP of each year:

$$\frac{I_{1961}}{rgdpna_{1961}}, \frac{I_{1962}}{rgdpna_{1962}}, \dots, \frac{I_{2019}}{rgdpna_{2019}}$$

Eventually, the variable investment as share of GDP will be an average of:

$$average_i = \frac{I_{1961}}{rgdpna_{1961}}, \frac{I_{1962}}{rgdpna_{1962}}, \dots, \frac{I_{2019}}{rgdpna_{2019}}$$

,for each country i over the period 1960-2019.

- *log(popgrowth)*: is the natural logarithm of the average growth rate of the population aged 15-64 for the period 1960-2019, and the sum of the depreciation rate and the technological growth rate is equal to 0.05. Data Source: WB (SP.POP.GROW).
- *log(school)* : is the natural logarithm of the average percentage of labor force (total population aged 15-64) that is in secondary school. This is a proxy to calculate the human capital. The data are available for the period 1960-2015. Data Source: Barro-Lee-DataSet.

We consider three groups of countries as MRW (1992).

- The first group implies all the countries which have available data and excludes the countries which oil production is the dominant industry. This sample has 86 countries. (MRW had 98 Non-Oil countries)
- The second group excludes the countries whose populations where less than one million in 1960 and also excludes the small countries. This sample consists of 71 countries. (MRW had 75 Intermediate countries)
- The third group includes the OECD countries with populations greater than one million. This sample consists of 22 countries. (MRW had 22 OECD countries)

We notice that the sample of 1970-2019 differs from the sample of 1960-1985 and 1960-2019, because there are more available data for some countries. Thus, the Non-Oil countries are 90, the Intermediate countries are 72 and the OECD countries remain 22 in sample 1970-2019.

5. Empirical Results

5.1 1960-1985

The following tables involve the estimations of two models, MRW's model from introductory paper for the period 1960-1985 (denoted as MRW) in comparison with MRW's model using our data for the period 1960-1985 (denoted as MRW update). Estimations are made both with and without imposing the restriction that the coefficients on the natural logarithm of savings and population growth are equal in absolute values. Because capital's share is one third (1/3), the regression coefficients for the saving rate should approximately be equal to 0.5 and for the population growth to -0.5. Assumed that $g + \delta$ is 0.05.

Table I reports the estimation results of the textbook Solow model for the three sub-samples. In Table I, there are the basic unrestricted and restricted Solow regressions and the estimate of capital share, α.

Table I: Estimation of the Textbook Solow Model 1960-1985

Dependent variable: log(gdp85)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	5.43***	1.25	5.35***	0.69	8.02***	4.79*
	(1.58)	(1.93)	(1.54)	(1.85)	(2.52)	(2.73)
ln(I/GDP)	1.42***	0.72**	1.32***	0.45**	0.50	-0.50
	(0.14)	(0.20)	(0.17)	(0.23)	(0.43)	(0.34)
ln(n+g+δ)	-1.99***	-3.38***	-2.02***	-3.55***	-0.74	-1.91**
	(0.56)	(0.72)	(0.53)	(0.68)	(0.85)	(0.89)
$\bar{R}^2$	0.59	0.29	0.59	0.31	0.01	0.11
s.e.e.	0.69	0.95	0.61	0.86	0.38	0.29
Restricted regression:						
Constant	6.87**	7.93***	7.09***	8.27***	8.62***	10.49***
	(0.12)	(0.31)	(0.15)	(0.37)	(0.53)	(0.39)
ln(I/GDP)- ln(n+g+δ)	1.49***	0.95***	1.43***	0.84***	0.55	0.09
	(0.12)	(0.20)	(0.14)	(0.23)	(0.37)	(0.20)
$\bar{R}^2$	0.59	0.20	0.59	0.15	0.06	-0.04
s.e.e.	0.69	1.02	0.61	0.96	0.37	0.32
Test of restriction:						
Implied α	0.60	0.49	0.59	0.46	0.36	0.08

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

The coefficients on saving rate and population growth of MRW update models have the same sign as predicted, except in sub-sample OECD countries where the estimated coefficient of $ln(I/GDP)$ has negative sign, but is not statistically significant. The restriction

that the $ln(s)$ and $ln(n+g+\delta)$ are equal in absolute values is not rejected at 5% level test, except the OECD countries. Also, the estimated impacts of saving of MRW update models are less than the initial model predicts, while the estimated impacts of population growth of MRW update models are much larger than the initial model predicts. The adjusted R^2 [11] is lower in comparison with the MRW's analysis. The estimates show that the capital share, α, of our empirical work is at lower level in relation with the original framework, but is closer to $\frac{1}{3}$.

The estimation results of textbook Solow model augmented by human capital will be presented in Table II. The human capital measure the percentage of working-age people enrolled in secondary school.

Table II: Estimation of the Augmented Solow Model 1960-1985

Dependent variable: log(gdp85)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	6.84***	6.39***	7.79***	5.96***	8.64***	6.87***
	(1.18)	(1.39)	(1.19)	(1.46)	(2.21)	(2.13)
ln(I/GDP)	0.70***	0.20	0.70***	0.10	0.28	-0.18
	(0.13)	(0.14)	(0.15)	(0.17)	(0.39)	(0.27)
ln(n+g+δ)	-1.75***	-1.80***	-1.50***	-1.94***	-1.08	-1.43***
	(0.42)	(0.51)	(0.40)	(0.52)	(0.76)	(0.68)
ln(school)	0.65***	0.83***	0.73***	0.83***	0.77**	0.40***
	(0.07)	(0.08)	(0.10)	(0.10)	(0.29)	(0.10)
$\bar{R}^2$	0.78	0.69	0.77	0.65	0.24	0.49
s.e.e.	0.51	0.64	0.45	0.61	0.33	0.22
Restricted regression:						
Constant	7.85***	8.35***	7.97***	8.46***	8.72***	9.66***
	(0.14)	(0.20)	(0.15)	(0.24)	(0.47)	(0.33)
ln(I/GDP)-ln(n+g+δ)	0.74***	0.23	0.71***	0.17	0.28	0.12
	(0.12)	(0.14)	(0.14)	(0.16)	(0.33)	(0.15)
ln(school)-ln(n+g+δ)	0.66***	0.87***	0.73***	0.91***	0.77**	0.44***
	(0.07)	(0.08)	(0.09)	(0.09)	(0.28)	(0.10)
$\bar{R}^2$	0.78	0.68	0.77	0.64	0.28	0.47
s.e.e.	0.51	0.64	0.45	0.62	0.32	0.22
Test of restriction:						
Implied α	0.31	0.11	0.29	0.08	0.14	0.08
Implied β	0.27	0.41	0.30	0.44	0.37	0.28

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

[11] The adjusted R^2 shows how well the independent variables explain the dependent variable, but adjusts for the number of predictors in the model. (Adjusted R^2 will always be less than or equal to R^2)

Following the MRW method, the signs of the coefficients are consistent with the predictions from the theory. In more detail, we observe that the physical and human capital have positive effect on income, while the labor force has negative effect on income. As was done above, the restrictions on the sum of the coefficients is not rejected at 5% level test. Now, the coefficients of the MRW and MRW update models have about the same impact on income. We notice that human capital reduces the impact of physical capital and improves the regression compared with Table I. More specifically, the adjusted R^2 is high and we have a well explained cross-country variation in income per capita in Non-Oil and Intermediate group. In addition, from Table II, the capital share a and the human capital share β are differents in relation with the estimations of initial paper. All the sub-samples have a less than $\frac{1}{3}$ and β larger than $\frac{1}{3}$. Thus, the estimations strongly contradict the predictions that $a = \beta = \frac{1}{3}$.

Table III provides the regressions for unconditional convergence, the convergence which has as explanatory variable only the logarithm of income per worker in 1960.

Table III: Tests for Unconditional Convergence 1960-1985

Dependent variable: log(gdp85/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	-0.27	-0.02	0.59	0.54	3.69***	4.64***
	(0.38)	(0.41)	(0.43)	(0.45)	(0.68)	(0.84)
ln(Y60)	0.09*	0.06	-0.004	0.002	-0.34***	-0.39***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.08)	(0.08)
$\bar{R}^2$	0.03	0.01	-0.01	0	0.46	0.50
s.e.e.	0.44	0.43	0.41	0.40	0.18	0.17
Implied λ	-0.0036	-0.00227	0.00017	-0.00009	0.01669	0.02004

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

The regression results of Table III show that the income at time zero is slightly positive correlated with the growth in income for Non-Oil and Intermediate countries and negatively correlated with the growth in income for OECD countries, over the period 1960 to 1985. Also, λ expresses the speed of convergence among countries. Because of the adjusted R^2 is almost zero for all the sub-samples, developing economies have not the privilege to grow faster than the advanced economies. Noted that, there is strong evidence for

convergence in OECD countries, where the initial per worker income is statistically significant negative and the adjusted R^2 is high, 0.50, in relation with the other sub-samples. The results are similar with the MRW initial paper.

Table IV and Table V present the conditional convergence with and without human capital, respectively. These findings are important not only for the convergence, but also for the speed of convergence. The estimation of speed of convergence is based on the coefficient of initial income $ln(Y60)$.

Table IV: Tests for Conditional Convergence 1960-1985

Dependent variable: log(gdp85/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	1.92**	0.04	2.25**	0.17	2.14*	2.70**
	(0.83)	(0.79)	(0.85)	(0.74)	(1.18)	(1.15)
ln(Y60)	-0.14***	-0.01	-0.23***	-0.05	-0.35***	-0.31***
	(0.05)	(0.05)	(0.06)	(0.05)	(0.07)	(0.07)
ln(I/GDP)	0.65***	0.36***	0.65***	0.43***	0.39**	0.32*
	(0.09)	(0.08)	(0.10)	(0.09)	(0.18)	(0.16)
ln(n+g+δ)	-0.30	-0.36	-0.46	-0.51	-0.77**	-0.52
	(0.30)	(0.33)	(0.31)	(0.32)	(0.35)	(0.39)
$\bar{R}^2$	0.38	0.18	0.35	0.25	0.62	0.74
s.e.e.	0.35	0.39	0.33	0.35	0.15	0.12
Implied λ	0.00607	0.00026	0.01034	0.00224	0.01723	0.0151

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

In Table IV, the coefficients have the same signs as predicted from the Solow theory. In general, the overall fit for the first two groups has not improved, except from OECD countries, but becomes better in Table V with the contribution of human capital. It seems that the OECD countries have the highest speed of convergence. Hence, the OECD countries are far from their steady-states, while the other countries are closer to their lower steady-states. The result verifies that countries have different steady-states due to the lags of population growth rate, the saving rate and the technological growth rate. OECD countries are homogenous, for this reason there is strong evidence of convergence. However, the adjusted R^2l ocated at low level.

Table V: Tests for Conditional Convergence 1960-1985

Dependent variable: log(gdp85/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	3.02***	1.49	3.71***	1.16	.76**	3.63***
	(0.83)	(0.90)	(0.91)	(0.90)	(1.20)	(1.18)
ln(Y60)	-0.29***	-0.15**	-0.37***	-0.15**	-0.40***	-0.41***
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)
ln(I/GDP)	0.52***	0.29***	0.54***	0.36***	0.33*	0.31*
	(0.09)	(0.08)	(0.10)	(0.09)	(0.17)	(0.15)
ln(n+g+δ)	-0.51*	-0.41	-0.54*	-0.52	-0.86**	-0.56
	(0.29)	(0.31)	(0.29)	(0.31)	(0.34)	(0.37)
ln(school)	0.23***	0.20***	0.27***	0.15*	0.23	0.12*
	(0.06)	(0.07)	(0.08)	(0.08)	(0.15)	(0.06)
$\bar{R}^2$	0.46	0.25	0.43	0.28	0.65	0.77
s.e.e.	0.33	0.37	0.30	0.34	0.15	0.11
Implied λ	0.01361	0.00657	0.01823	0.00631	0.02028	0.02091

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

Table VI: Tests for Conditional Convergence, Restricted Regressions 1960-1985

Dependent variable: log(gdp85/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	2.46***	1.31**	3.09***	1.17**	3.55***	3.86***
	(0.47)	(0.56)	(0.53)	(0.58)	(0.63)	(0.75)
ln(Y60)	-0.30***	-0.16**	-0.37***	-0.15**	-0.40***	-0.40***
	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)
ln(I/GDP)- ln(n+g+δ)	0.50***	0.28***	0.51***	0.37***	0.40**	0.34***
	(0.08)	(0.08)	(0.10)	(0.09)	(0.15)	(0.08)
ln(school)- ln(n+g+δ)	0.24***	0.20***	0.27***	0.15*	0.24	0.13*
	(0.06)	(0.07)	(0.08)	(0.08)	(0.14)	(0.06)
$\bar{R}^2$	0.47	0.26	0.44	0.29	0.66	0.79
s.e.e.	0.33	0.37	0.30	0.34	0.15	0.11
Test of restriction:						
Implied λ	0.01415	0.00674	0.01863	0.00629	0.02058	0.02051
Implied α	0.48	0.44	0.44	0.55	0.38	0.39
Implied β	0.23	0.32	0.23	0.22	0.23	0.14

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-1985 estimated with our data.

Finally, the Table VI shows the restricted regressions of conditional convergence and the restrictions are not rejected. Table VI includes the values of α, β and λ. The estimates both of MRW and MRW update model are close. Table VI in comparison with Table II,

report that the regressions of Table VI give more weight to physical capital and less weight to human capital both of two models.

As in MRW, Figure I presents the convergence phenomenon for the Intermediate group. With the grey line is depicted the MRW's initial analysis and with the red line our analysis. These figures do not confirm the initial findings. Low income countries do not tend to grow faster than high income countries.

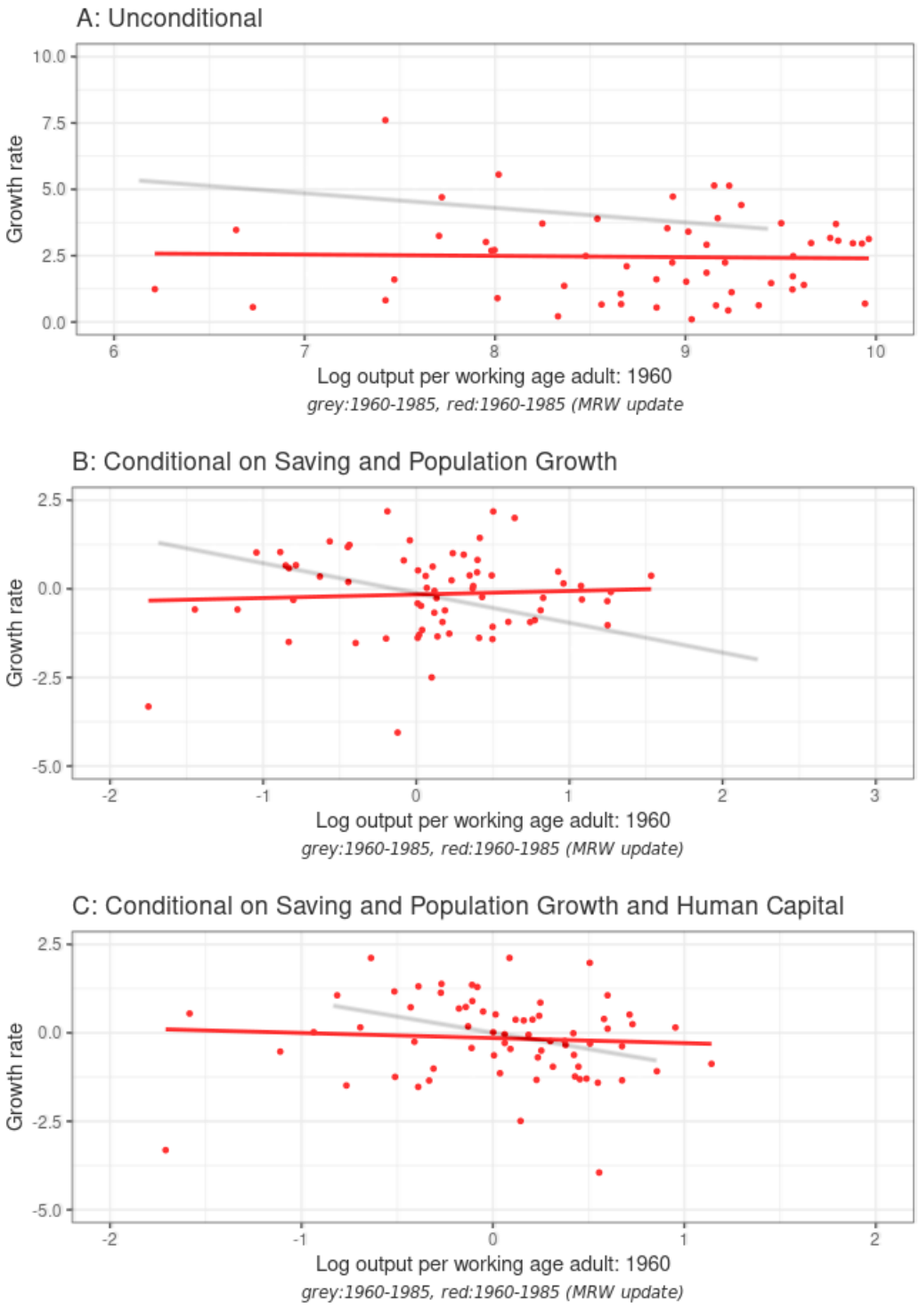

Figure I: Unconditional versus Conditional Convergence 1960-1985

5.2 1960-2019

The following tables summarize the estimations of two models, MRW's model from the introductory paper for the period 1960-1985 (denoted as MRW) and MRW's model for the period 1960-2019 (denoted as MRW update).

Table VII: Estimation of Textbook Solow Model 1960-2019

Dependent variable: log(gdp85) and log(gdp19)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	5.43***	-3.30	5.35***	-2.33	8.02***	9.25***
	(1.58)	(2,00)	(1.54)	(2.01)	(2.52)	(2.79)
ln(I/GDP)	1.42***	0.66***	1.32***	0.30	0.50	-0.37
	(0.14)	(0.25)	(0.17)	(0.28)	(0.43)	(0.39)
ln(n+g+δ)	-1.99***	-5.23***	-2.02***	-4.76***	-0.74	-0.55
	(0.56)	(0.72)	(0.53)	(0.72)	(0.85)	(0.89)
$\bar{R}^2$	0.59	0.45	0.59	0.40	0.01	-0.05
s.e.e.	0.69	0.92	0.61	0.88	0.38	0.31
Restricted regression:						
Constant	6.87**	7.84***	7.09***	8.45***	8.62***	11.46***
	(0.12)	(0.38)	(0.15)	(0.46)	(0.53)	(0.46)
ln(I/GDP)- ln(n+g+δ)	1.49***	1.37***	1.43***	1.08***	0.55	-0.14
	(0.12)	(0.25)	(0.14)	(0.29)	(0.37)	(0.25)
$\bar{R}^2$	0.59	0.25	0.59	0.15	0.06	-0.04
s.e.e.	0.69	1.08	0.61	1.04	0.37	0.31
Test of restriction:						
Implied α	0.60	0.58	0.59	0.52	0.36	-0.16

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

Table VII reports the results from the textbook Solow estimations for the periods 1960-1985 and 1960-2019, respectively. As seem, the coefficients of Non-Oil and Intermediate countries have the predicted signs. The Non-Oil countries for the period 1960-2019 show that the investment as share of GDP affects positively the income per worker less than Solow predicts, and the population growth affects negatively the income per worker much more than the initial estimations of MRW. The Intermediate countries have a statistically negative impact on income per worker because of the population growth and this impact is bigger than Solow model predicts. The fits of regressions are at low level. Lastly, the coefficients do not have statistical important coefficients and the adjusted R^2 prove that the regression of OECD countries has not power to explain the variation in income per worker. However, the first two sub-samples have similar capital of share with the basic Solow model, even if the results do not support the theory.

Table VIII:Estimation of the Augmented Solow Model 1960-2019

Dependent variable: log(gdp85) and log(gdp19)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	6.84***	3.62***	7.79***	4.21**	8.64***	12.76***
	(1.18)	(1.87)	(1.19)	(2.04)	(2.21)	(2.63)
ln(I/GDP)	0.70***	0.23	0.70***	0.07	0.28	0.11
	(0.13)	(0.21)	(0.15)	(0.24)	(0.39)	(0.37)
ln(n+g+δ)	-1.75***	-2.94***	-1.50***	-2.71***	-1.08	0.30
	(0.42)	(0.66)	(0.40)	(0.70)	(0.76)	(0.80)
ln(school)	0.65***	0.99***	0.73***	1.05***	0.77**	0.69***
	(0.07)	(0.14)	(0.10)	(0.19)	(0.29)	(0.23)
$\bar{R}^2$	0.78	0.65	0.77	0.59	0.24	0.25
s.e.e.	0.51	0.73	0.45	0.73	0.33	0.26
Restricted regression:						
Constant	7.85***	7.83***	7.97***	7.96***	8.72***	10.35***
	(0.14)	(0.26)	(0.15)	(0.33)	(0.47)	(0.54)
ln(I/GDP)-ln(n+g+δ)	0.74***	0.34***	0.71***	0.20**	0.28	-0.17
	(0.12)	(0.21)	(0.14)	(0.23)	(0.33)	(0.22)
ln(school)-ln(n+g+δ)	0.66***	1.16***	0.73***	1.26***	0.77**	0.57***
	(0.07)	(0.12)	(0.09)	(0.15)	(0.28)	(0.19)
$\bar{R}^2$	0.78	0.64	0.77	0.57	0.28	0.26
s.e.e.	0.51	0.75	0.45	0.74	0.32	0.26
Test of restriction:						
Implied α	0.31	0.14	0.29	0.08	0.14	-0.12
Implied β	0.27	0.46	0.30	0.51	0.37	0.40

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

When human capital is included in the regression, the coefficients of physical capital investment decline by a significant amount in three of the sub-samples (for Non-Oil countries from 0.70 to 0.23, for Intermediate countries from 0.70 to 0.07, for OECD countries from 0.28 to 0.11, but is not statistically significant, resulted that the capital of share for OECD countries is not important). All of the variables are consistent with the theory's predictions that physical and human capital have a positive influence on income, while population growth has a negative effect on income. Human capital regression coefficients are extremely significant. In MRW, the sum of the coefficients of the independent variable was limited to equaling zero. The limitation is not rejected in any sample at the 5% significance level. The adjusted R^2 is high and it means that the independent variables explain satisfactory the income per worker, except for OECD countries. We observe that capital share is lower from 1/3 than predicts the theory and the human capital is higher from 1/3 and we conclude that

OECD economies give larger weight to human capital than physical capital. The results are inconsistent with the economic theory.

Table IX: Tests for Unconditional Convergence 1960-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	-0.27	0.99	0.59	1.82**	3.69***	6.52***
	(0.38)	(0.72)	(0.43)	(0.81)	(0.68)	(1.13)
ln(Y60)	0.09*	0.002	-0.004	-0.08	-0.34***	-0.53***
	(0.05)	(0.08)	(0.05)	(0.09)	(0.08)	(0.11)
$\bar{R}^2$	0.03	-0.01	-0.01	-0.003	0.46	0.49
s.e.e.	0.44	0.75	0.41	0.72	0.18	0.23
Implied λ	-0.0036	-0.00003	0.00017	0.00144	0.01669	0.01269

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

In Table IX, the signs of the initial income follow the estimations of MRW, even they are not statistically significant, except in the OECD economies. The fit of the first two regressions is almost 0, while for the OECD sample is important high. The theory says that poor economies which tend to grow faster would have to be negative relationship between the level of initial income and the income per worker. The results validate the theory.

Table X: Tests for Conditional Convergence 1960-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	1.92**	-1.93	2.25**	-1.18	2.14*	5.74***
	(0.83)	(1.44)	(0.85)	(1.47)	(1.18)	(2.18)
ln(Y60)	-0.14***	-0.21**	-0.23***	-0.24**	-0.35***	-0.41***
	(0.05)	(0.09)	(0.06)	(0.10)	(0.07)	(0.14)
ln(I/GDP)	0.65***	0.61***	0.65***	0.57***	0.39**	0.44
	(0.09)	(0.18)	(0.10)	(0.21)	(0.18)	(0.34)
ln(n+g+δ)	-0.30	-2.08***	-0.46	-1.89***	-0.77**	-0.04
	(0.30)	(0.62)	(0.31)	(0.64)	(0.35)	(0.65)
$\bar{R}^2$	0.38	0.22	0.35	0.22	0.62	0.50
s.e.e.	0.35	0.66	0.33	0.64	0.15	0.22
Implied λ	0.00607	0.004	0.01034	0.00458	0.01723	0.00899

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

Table XI:Tests for Conditional Convergence 1960-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	3.02***	1.03	3.71***	1.31	2.76**	7.93***
	(0.83)	(1.67)	(0.91)	(1.82)	(1.20)	(2.82)
ln(Y60)	-0.29***	-0.41***	-0.37***	-0.39***	-0.40***	-0.53***
	(0.06)	(0.11)	(0.07)	(0.12)	(0.07)	(0.17)
ln(I/GDP)	0.52***	0.41**	0.54***	0.42**	0.33*	0.48
	(0.09)	(0.18)	(0.10)	(0.21)	(0.17)	(0.34)
ln(n+g+δ)	-0.51*	-1.78***	-0.54*	-1.62**	-0.86**	0.22
	(0.29)	(0.60)	(0.29)	(0.63)	(0.34)	(0.68)
ln(school)	0.23***	0.47***	0.27***	0.44***	0.23	0.29
	(0.06)	(0.15)	(0.08)	(0.20)	(0.15)	(0.24)
$\bar{R}^2$	0.46	0.30	0.43	0.26	0.65	0.52
s.e.e.	0.33	0.62	0 30	0.62	0.15	0.22
Implied λ	0.01361	0.00893	0.01823	0.00844	0.02028	0.01276

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

The estimates in Table X are smaller than the basic Solow model predicts in Table I and the estimates in Table XI are closer to Table II. The overall fit for each group has improved in Table X and is much better in Table XI, but is satisfactory only for OECD countries. It seems that the OECD countries have the highest speed of convergence. The result verify that countries have different steady-states due to the lags of population growth rate, the saving rate and the technological growth rate.

Finally, the Table XII shows the restricted regressions of conditional convergence and the restrictions are not rejected. Table XII includes the values of α, β and λ. Obviously, a and β for Non-Oil and Intermediate sub-sample are close to 1/3, as predicted from theory. These regressions give almost larger importance in human capital than physical capital. The estimates both of MRW and MRW update model are close. The regressions of Table XII give more weight to human capital and less weight to physical capital for the MRW update model and this conclusion is contradictory with the results of initial paper.

Table XII: Tests for Conditional Convergence, Restricted Regression 1960-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp60)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	86	75	71	22	22
Constant	2.46***	2.96***	3.09***	2.90***	3.55***	5.70***
	(0.47)	(0.84)	(0.53)	(0.96)	(0.63)	(1.69)
ln(Y60)	-0.30***	-0.38***	-0.37***	-0.37***	-0.40***	-0.52***
	(0.06)	(0.10)	(0.07)	(0.12)	(0.07)	(0.17)
ln(I/GDP)- ln(n+g+δ)	0.50***	0.48***	0.51***	0.49**	0.40**	0.24
	(0.08)	(0.17)	(0.10)	(0.20)	(0.15)	(0.23)
ln(school)- ln(n+g+δ)	0.24***	0.53***	0.27***	0.51***	0.24	0.17
	(0.06)	(0.15)	(0.08)	(0.19)	(0.14)	(0.21)
$\bar{R}^2$	0.47	0.29	0.44	0.26	0.66	0.52
s.e.e.	0.33	0.63	0.30	0.62	0.15	0.22
Test of restriction:						
Implied λ	0.01415	0.00805	0.01863	0.00772	0.02058	0.01252
Implied α	0.48	0.35	0.44	0.36	0.38	0.25
Implied β	0.23	0.38	0.23	0.37	0.23	0.19

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1960-2019.

The results present similarities for the periods 1960-1985 and 1960-2019, respectively. In further depth, we observe that the investments of Non-Oil and Intermedite groups have smaller effect on income per worker and the population growth has larger effect on income per worker in relation with the initial estimations (Tables I, VII). Moreover, the addition of human capital provides a positive impact on income per worker, which is bigger that the initial paper predicts (Tables II, VIII). In all cases, we conclude that the regressions give more weight to human capital than the physical capital. Also, we notice that there are strong evidence for unconditional and conditional convergence in OECD countries for 1960-1985 and 1960-2019, too (Tables III, IX, IV, X, V, XI and VI, XII). Eventually, from figures, different things apply. For the period 1960-1985 holds that all the countries tend to grow with the same rate and for the period 1960-2019 in figures A and C, verified Solow's theory, that low-income countries tend to grow faster than high-income countries, while in figure B holds the opposite.

The figure II below exhibits the convergence phenomenon, for the Intermediate group. In graphs A and C, it seems that low-income countries tend to grow faster than high-income countries.

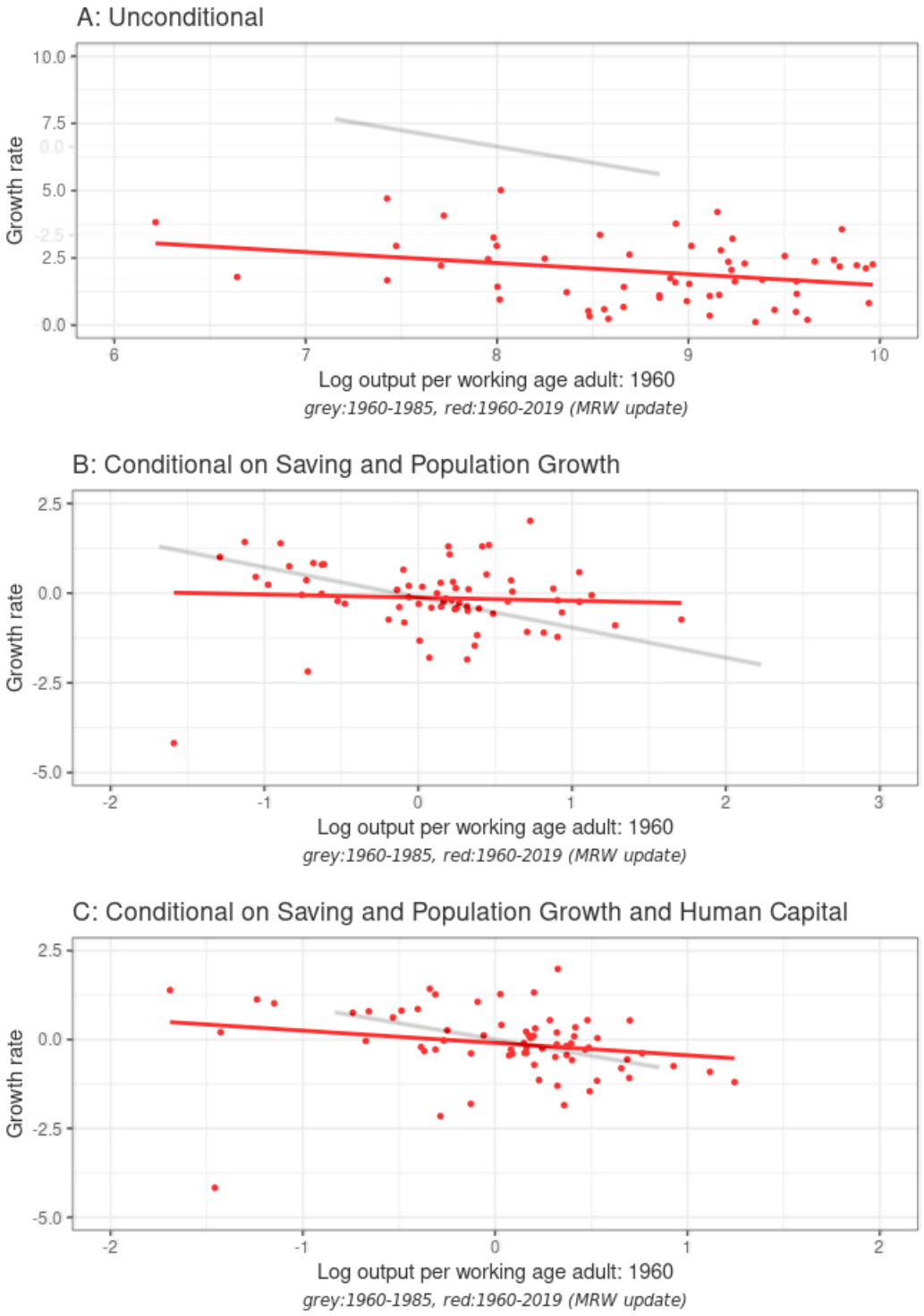

Figure II: Unconditional versus Conditional Convergence 1960-2019

5.3 1970-2019

The methodology is the same with the previous samples 1960-1985 and 1960-2019. The Tables below contain the results of analysis 1970-2019. In general, the results are similar with the results of 1960-2019 analysis. For this reason, we write our conclusions at the end of tables.

Table XIII: Estimation of the Textbook Solow Model 1970-2019

Dependent variable: log(gdp85) and log(gdp19)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	5.43***	-3.25	5.35***	-2.23	8.02***	9.25***
	(1.58)	(1.98)	(1.54)	(2.01)	(2.52)	(2.79)
ln(I/GDP)	1.42***	0.73***	1.32***	0.35	0.50	-0.37
	(0.14)	(0.23)	(0.17)	(0.28)	(0.43)	(0.39)
ln(n+g+δ)	-1.99***	-5.23***	-2.02***	-4.74***	-0.74	-0.55
	(0.56)	(0.71)	(0.53)	(0.72)	(0.85)	(0.89)
$\bar{R}^2$	0.59	0.46	0.59	0.40	0.01	-0.05
s.e.e.	0.69	0.92	0.61	0.88	0.38	0.31
Restricted regression:						
Constant	6.87**	7.81***	7.09***	8.41***	8.62***	11.46***
	(0.12)	(0.35)	(0.15)	(0.45)	(0.53)	(0.46)
ln(I/GDP)- ln(n+g+δ)	1.49***	1.38***	1.43***	1.10***	0.55	-0.14
	(0.12)	(0.24)	(0.14)	(0.29)	(0.37)	(0.25)
$\bar{R}^2$	0.59	0.27	0.59	0.16	0.06	-0.04
s.e.e.	0.69	1.07	0.61	1.04	0.37	0.31
Test of restriction:						
Implied α	0.60	0.58	0.59	0.52	0.36	-0.16

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

Table XIV: Estimation of the Augmented Solow Model 1970-2019

Dependent variable: log(gdp85) and log(gdp19)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	6.84***	3.74**	7.79***	4.31**	8.64***	12.76***
	(1.18)	(1.87)	(1.19)	(2.01)	(2.21)	(2.63)
ln(I/GDP)	0.70***	0.24	0.70***	0.08	0.28	0.11
	(0.13)	(0.20)	(0.15)	(0.23)	(0.39)	(0.37)
ln(n+g+δ)	-1.75***	-2.91***	-1.50***	-2.68***	-1.08	0.30
	(0.42)	(0.66)	(0.40)	(0.69)	(0.76)	(0.80)
ln(school)	0.65***	1.00***	0.73***	1.06***	0.77**	0.69***
	(0.07)	(0.14)	(0.10)	(0.18)	(0.29)	(0.23)
$\bar{R}^2$	0.78	0.65	0.77	0.59	0.24	0.25
s.e.e.	0.51	0.74	0.45	0.72	0.33	0.26
Restricted regression:						
Constant	7.85***	7.84***	7.97***	7.96***	8.72***	10.35***
	(0.14)	(0.25)	(0.15)	(0.32)	(0.47)	(0.54)
ln(I/GDP)- ln(n+g+δ)	0.74***	0.34*	0.71***	0.20	0.28	-0.17
	(0.12)	(0.20)	(0.14)	(0.23)	(0.33)	(0.22)
ln(school)- ln(n+g+δ)	0.66***	1.16***	0.73***	1.26***	0.77**	0.57***
	(0.07)	(0.12)	(0.09)	(0.15)	(0.28)	(0.19)
$\bar{R}^2$	0.78	0.64	0.77	0.58	0.28	0.26
s.e.e.	0.51	0.75	0.45	0.73	0.32	0.26
Test of restriction:						
Implied α	0.31	0.13	0.29	0.08	0.14	-0.12
Implied β	0.27	0.46	0.30	0.51	0.37	0.40

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

Table XV: Tests for Conditional Convergence 1970-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp70)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	-0.27	1.02	0.59	2.07**	3.69***	6.52***
	(0.38)	(0.71)	(0.43)	(0.78)	(0.68)	(1.13)
ln(Y70)	0.09*	-0.004	-0.004	-0.11	-0.34***	-0.53***
	(0.05)	(0.08)	(0.05)	(0.09)	(0.08)	(0.11)
$\bar{R}^2$	0.03	-0.01	-0.01	0.01	0.46	0.49
s.e.e.	0.44	0.76	0.41	0.72	0.18	0.23
Implied λ	-0.0036	0.00008	0.00017	0.00233	0.01669	0.01528

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

Table XVI:Tests for Conditional Convergence 1970-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp70)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	1.92**	-2.22	2.25**	-1.31	2.14*	5.74***
	(0.83)	(1.44)	(0.85)	(1.47)	(1.18)	(2.18)
ln(Y70)	-0.14***	-0.23***	-0.23***	-0.27***	-0.35***	-0.41***
	(0.05)	(0.09)	(0.06)	(0.09)	(0.07)	(0.14)
ln(I/GDP)	0.65***	0.58***	0.65***	0.52**	0.39**	0.44
	(0.09)	(0.17)	(0.10)	(0.20)	(0.18)	(0.34)
ln(n+g+δ)	-0.30	-2.24***	-0.46	-2.05***	-0.77**	-0.04
	(0.30)	(0.61)	(0.31)	(0.62)	(0.35)	(0.65)
$\bar{R}^2$	0.38	0.23	0.35	0.22	0.62	0.50
s.e.e.	0.35	0.67	0.33	0.64	0.15	0.22
Implied λ	0.00607	0.00541	0.01034	0.00656	0.01723	0.01083

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

Table XVII: Tests for Conditional Convergence 1970-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp70)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	3.02***	0.94	3.71***	1.25	2.76**	7.93***
	(0.83)	(1.69)	(0.91)	(1.82)	(1.20)	(2.82)
ln(Y70)	-0.29***	-0.43***	-0.37***	-0.43***	-0.40***	-0.53***
	(0.06)	(0.10)	(0.07)	(0.11)	(0.07)	(0.17)
ln(I/GDP)	0.52***	0.38**	0.54***	0.37*	0.33*	0.48
	(0.09)	(0.17)	(0.10)	(0.21)	(0.17)	(0.34)
n(n+g+δ)	-0.51*	-1.87***	-0.54*	-1.75***	-0.86**	0.22
	(0.29)	(0.60)	(0.29)	(0.62)	(0.34)	(0.68)
ln(school)	0.23***	0.49***	0.27***	0.45**	0.23	0.29
	(0.06)	(0.15)	(0.08)	(0.20)	(0.15)	(0.24)
$\bar{R}^2$	0.46	0.30	0.43	0.27	0.65	0.52
s.e.e.	0.33	0.63	0. 0	0.62	0.15	0.22
Implied λ	0.01361	0.01147	0.01823	0.0115	0.02028	0.01536

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

Table XVIII:Tests for Conditional Convergence, Restricted Regressions 1970-2019

Dependent variable: log(gdp85/gdp60) and log(gdp19/gdp70)						
	Non-Oil		Intermediate		OECD	
	MRW	MRW update	MRW	MRW update	MRW	MRW update
Observations:	98	90	75	72	22	22
Constant	2.46***	3.19***	3.09***	3.29***	3.55***	5.70***
	(0.47)	(0.81)	(0.53)	(0.92)	(0.63)	(1.69)
ln(Y70)	-0.30***	-0.40***	-0.37***	-0.41***	-0.40***	-0.52***
	(0.06)	(0.10)	(0.07)	(0.11)	(0.07)	(0.17)
ln(I/GDP)- ln(n+g+δ)	0.50***	0.44**	0.51***	0.45**	0.40**	0.24
	(0.08)	(0.17)	(0.10)	(0.20)	(0.15)	(0.23)
ln(school)- ln(n+g+δ)	0.24***	0.56***	0.27***	0.54***	0.24	0.17
	(0.06)	(0.15)	(0.08)	(0.19)	(0.14)	(0.21)
$\bar{R}^2$	0.47	0.29	0.44	0.26	0.66	0.52
s.e.e.	0.33	0.6	0.30	0.62	0.15	0.22
Test of restriction:						
Implied λ	0.01415	0.0105	0.01863	0.01066	0.02058	0.01508
Implied α	0.48	0.32	0.44	0.32	0.38	0.25
Implied β	0.23	0.40	0.23	0.39	0.2	0.19

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses. MRW is the initial model 1960-1985 and MRW update is the updated model 1970-2019.

In conclusion, there are small differences between the samples 1960-2019 and 1970-2019. In more detail, in textbook and augmented Solow model the coefficients have the predicted signs and magnitudes, except the OECD countries. The capital of share is close to MRW results for Non-Oil and Intermediate countries and by including the human capital the share of capital and human capital are different from the initial estimations of MRW. From Table XV resulted that there is statistically significant convergence in OECD countries. Because they are homogeneous, evidence of conditional convergence can only be found in OECD countries. Also, in Table XVI and Table XVII, findings confirm the existence of the conditional convergence phenomenon for all the sub-samples. Lastly, in Table XVIII, the share of physical capital and the share of human capital are far from 1/3, as a result the predictions of economic theory do not have power. In terms of assumed convergence speed, the model with human capital leads to convergence faster than the one without it.

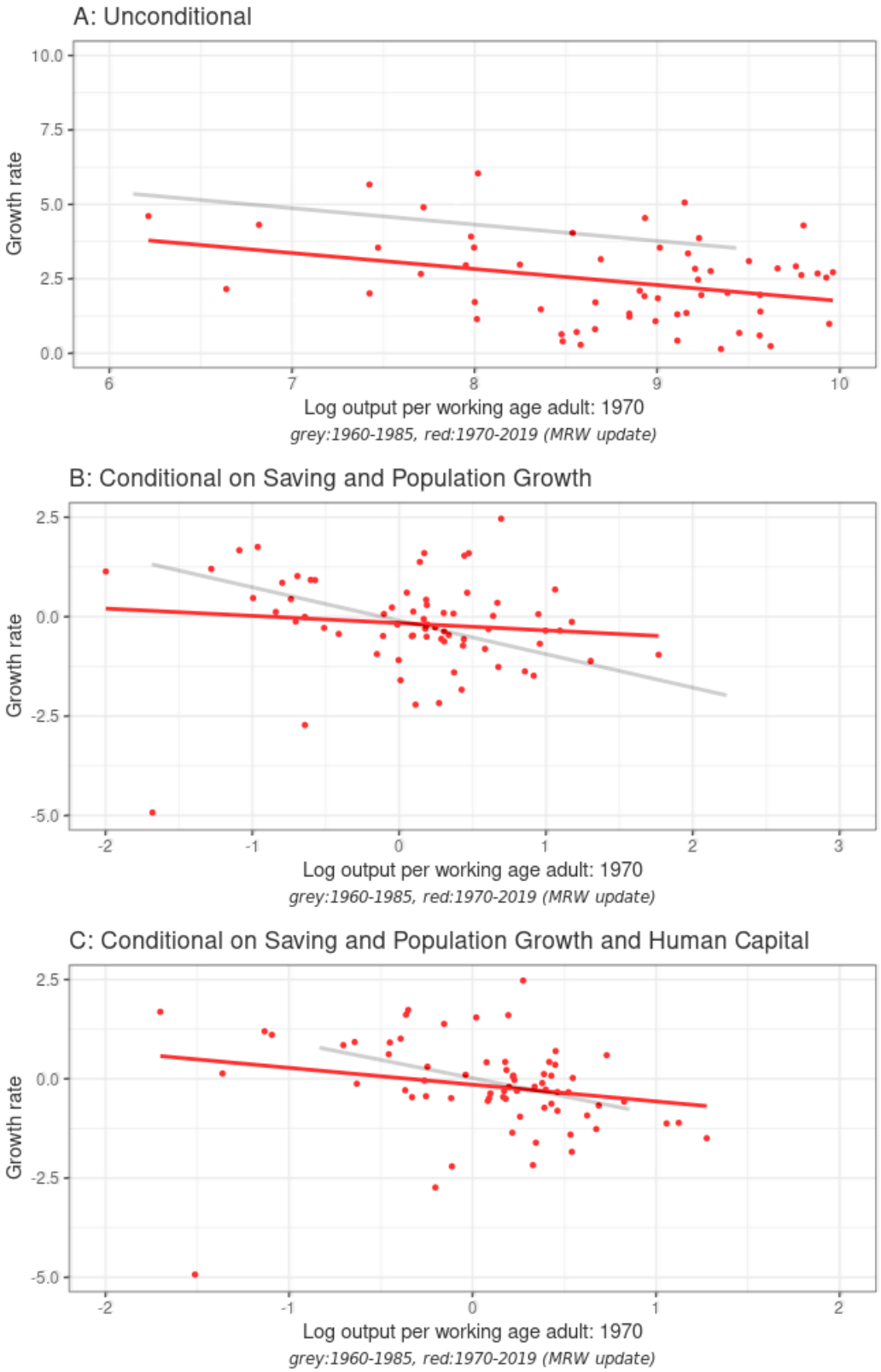

Figure III: Unconditional versus Conditional Convergence

6. Panel Data Analysis

Since it has been accurately argued that the production function may changes across countries and in order to capture the time dimension in our analysis we make use of panel data framework.

6.1 Definition

Panel data (also known as longitudinal or cross-sectional time-series data) is a dataset that examines the behavior of entities (groups) over a given period of time. These entities may be states, corporations, individuals, countries, and so forth. A panel dataset has two dimensions: space and time. (If it has more than two dimensions is known as multidimension panel data).

A panel dataset would be seen as a two-dimensional data set in this study, having time series and a cross-sectional dimension. A panel dataset can be either balanced or unbalanced. Consequently, a panel dataset is balanced if the same length of period is observed for each unit of the cross-sections, whereas it is unbalanced if the length of period varies for some units of the cross-sections.

The OLS can be fitted by Least Squares Dummy Variable (LSDV). A dummy variable is a binary variable that is coded to either 1 or 0, and it is often used in regression analysis to investigate group and temporal effects. The LSDV is a method of accounting for the economy's uniqueness. The LSDV is typically accomplished by inserting necessary dummies while keeping in mind the dummy variable trap[12] and application of OLS.

6.2 Theoretical Framework

The transition from a single cross section to a panel structure is made possible by breaking the overall period into many shorter time periods. We choose five-year time periods (balanced panel). Thus, considering the period 1970-2019, we have the following time intervals: 1970-1974,1 975-1979, 1980-1984, 1985-1989, 1990-1994, 1995-1999, 2000-2004, 2005-2009, 2010-2014, 2015-2019. Then, we estimate these two equations:

[12] The dummy variable trap is an issue that can occur while creating dummy variables. This happens when we generate k dummy variables rather than k-1 dummy variables.

$$\ln(y_{it}^{*}) = constant + \beta_1 oil_i + \beta_2 oecd_i + \gamma_1 africa_i + \gamma_2 asia_i + \gamma_3 europe_i + \gamma_4 north\_america_i + \gamma_5 south\_america_i + \delta_1 \ln(s_{ki}^{*}) + \delta_2 \ln(\delta + g_i + n_i) + v_{it} \quad (6.2.1)$$

$$\ln(y_{it}^{*}) = constant + \beta_1 oil_i + \beta_2 oecd_i + \gamma_1 africa_i + \gamma_2 asia_i + \gamma_3 europe_i + \gamma_4 north\_america_i + \gamma_5 south\_america_i + \delta_1 \ln(s_{ki}^{*}) + \delta_2 \ln(\delta + g_i + n_i) + \delta_3 \ln(s_{hi}^{*}) + v_{it} \quad (6.2.2)$$

Where oil=1 if the observation is a country which oil production is the dominant industry and 0 otherwise, OECD=1 if the country takes place in OECD economies and 0 otherwise, africa=1 if the country belongs in the continent of Africa and 0 otherwise, europe=1 if the country belongs to European countries and 0 otherwise, north_america=1 if the country belongs to North America and 0 otherwise, south_america=1 if the country belongs to South America and 0 otherwise and the v_{it} is the error term that represents the unobserved country specific effects. Constant represents the intercept and $\beta_1, \beta_2, \gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5$ are the intercepts of the coefficients of the dummies, $\delta_1, \delta_2, \delta_3$ are the coefficients of independent variables and tell us how much the intercepts of the coefficients differ from the constant. LSDV can be augmented to take care of this situation, assuming that coefficients and slope of the coefficients are different for all the countries. The equations modified by multiplying each dummy by each of the independent variables.

Equation (6.2.1) becomes:

$$\begin{aligned}\ln(y_{it}^{*}) = {} & constant + \beta_1 oil_i + \beta_2 oecd_i + \gamma_1 africa_i + \gamma_2 asia_i + \gamma_3 europe_i \\ & + \gamma_4 north\_america_i + \gamma_5 south\_america_i + \delta_1 \ln(s_{ki}^{*}) \\ & + \delta_2 \ln(\delta + g_i + n_i) + \rho_1(oil_i \ln(s_{ki}^{*})) + \rho_2(oil_i \ln(\delta + g_i + n_i)) \\ & + \rho_3(oecd_i \ln(s_{ki}^{*})) + \rho_4(oecd_i \ln(\delta + g_i + n_i)) + \rho_5(africa_i \ln(s_{ki}^{*})) \\ & + \rho_6(africa_i \ln(\delta + g_i + n_i)) + \rho_7(asia_i \ln(s_{ki}^{*})) \\ & + \rho_8(asia_i \ln(\delta + g_i + n_i)) + \rho_9(europe_i \ln(s_{ki}^{*})) \\ & + \rho_{10}(europe_i \ln(\delta + g_i + n_i)) + \rho_{11}(north\_america_i \ln(s_{ki}^{*})) \\ & + \rho_{12}(north\_america_i \ln(\delta + g_i + n_i)) + \rho_{13}(south\_america_i \ln(s_{ki}^{*})) \\ & + \rho_{14}(south\_america_i \ln(\delta + g_i + n_i))\end{aligned}$$

Equation (6.2.2) becomes:

$$\begin{aligned}\ln(y_{it}^{*}) = {} & constant + \beta_1 oil_i + \beta_2 oecd_i + \gamma_1 africa_i + \gamma_2 asia_i + \gamma_3 europe_i \\ & + \gamma_4 north\_america_i + \gamma_5 south\_america_i + \delta_1 \ln(s_{ki}^{*}) \\ & + \delta_2 \ln(\delta + g_i + n_i) + \delta_3 \ln(s_{hi}^{*}) + \rho_1(oil_i \ln(s_{ki}^{*})) \\ & + \rho_2(oil_i \ln(\delta + g_i + n_i)) + \rho_3(oil_i \ln(s_{hi}^{*})) + \rho_4(oecd_i \ln(s_{ki}^{*})) \\ & + \rho_5(oecd_i \ln(\delta + g_i + n_i)) + \rho_6(oecd_i \ln(s_{hi}^{*})) + \rho_7(africa_i \ln(s_{ki}^{*})) \\ & + \rho_8(africa_i \ln(\delta + g_i + n_i)) + \rho_9(africa_i \ln(s_{hi}^{*})) + \rho_{10}(asia_i \ln(s_{ki}^{*})) \\ & + \rho_{11}(asia_i \ln(\delta + g_i + n_i)) + \rho_{12}(asia_i \ln(s_{hi}^{*})) + \rho_{13}(europe_i \ln(s_{ki}^{*})) \\ & + \rho_{14}(europe_i \ln(\delta + g_i + n_i)) + \rho_{15}(europe_i \ln(s_{hi}^{*})) \\ & + \rho_{16}(north\_america_i \ln(s_{ki}^{*})) + \rho_{17}(north\_america_i \ln(\delta + g_i + n_i)) \\ & + \rho_{18}\big(north\_america_i \ln(s_{hi}^{*})\big) + \rho_{19}(south\_america_i \ln(s_{ki}^{*})) \\ & + \rho_{20}(south\_america_i \ln(\delta + g_i + n_i)) + \rho_{21}(south\_america_i \ln(s_{hi}^{*}))\end{aligned}$$

Where the ρ is the coefficients of differential slope, while $\beta_1, \beta_2, \gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_4$ are the differential intercepts. If ρ is statistically significant then the slope of the dummies differs from the base group. In R, for the estimations of equation (6.2.1) and equation (6.2.2) used the "plm package". The "plm package" means "linear models for panel data". This package aims to make the estimate of linear panel models simple. "Plm" includes functions for estimating a wide range of models and performing (robust) inferen

6.3 Empirical Results

Table XIX: Panel Data Analysis, LSDV at 5-year span data

Dependent variable: log(gdp)		
	Equation (6.2.1)	Equation (6.2.2)
Observations	1050	1050
Constant	8.20***	10.17***
	(0.41)	(0.37)
ln(I/GDP)	0.28*	0.16***
	(0.05)	(0.04)
ln(n+g+δ)	-0.60***	-0.03
	(0.15)	(0.13)
ln(school)	-	0.54***
	-	(0.03)
oil	1.75***	1.58***
	(0.11)	(0.10)
OECD	1.11***	0.97***
	(0.08)	(0.07)
africa	-0.90***	-0.50***
	(0.13)	(0.12)
asia	-0.25*	-0.20*
	(0.13)	(0.12)
europe	0.14	0.24**
	(0.13)	(0.12)
north_america	-0.08	-0.002
	(0.13)	(0.12)
south_america	-0.17	-0.14
	(0.14)	(0.12)
$\bar{R}^2$	0.63	0.73
s.e.e.	0.73	0.63

Notes: */ **/ *** indicate statistical significance at 1%, 5% and 10% level. Standard errors are in parentheses.

The adjusted R^2 for the equation (6.2.1) is 0.63 is high and the adjusted R^2 becomes larger 0.73 when augmented the equation (6.2.1) with human capital and resulted the equation (6.2.2).The adjusted R^2 value 0.73 was also high which indicated that 73% of the total variation was accounted for by the independent variables included in model, while the remaining 28% unexplained was accounted for by the white noise. As seem, the intercepts of the following dummies: oil, oecd and europe have positive signs and all these dummies are statistically significant. This means that the income per effective worker is affected positive from these dummies. However, there are the dummies which have negative signs. In this case, africa and asia affects negatively and statistically significant the output per worker, while the north_america and the south_america cannot cause any change on dependent variable.

In conclusion, the dummy variables coefficients are in major statistically significant. Creating the dummy variables and use a panel model, which allow heterogeneity among countries we find out that the dummy variables coefficients have an important impact on income per worker. In general, the economies which based on oil have larger positive impact than the economies which belong to OECD countries. Finally, by dividing the countries per continent resulted that only the European countries affect positively the income per worker in comparison with the other continents.

7. Discuss the Historical Replications of MRW model

MRW's empirical framework has been replicated in many studies. At the expense of simplification, discussions on MRW's original work are divided between:

- those that offer additional augmentations to the MRW regression. (*Knowles and Owen (1995) and Nonneman and Vanhoudt (1996)*)
- those that focus on econometric difficulties. (*Islam (1995), Durlauf and Johnson (1995), Lee et al. (1997) and Maddala and Wu (2000)*)
- those that are critical of the literature and propose significant methodological changes. (*Durlauf (2000) and Easterly and Levine (2001))*

In further depth:

- *Knowles and Owen (1995)* examine the impact of including a proxy for health capital in MRW's empirical growth model. The results suggest that the relationship between income per capita and health capital is stronger and more robust than the relationship between income per capita and human capital.
- *Nonneman and Vanhoudt (1996)* include endogenous technological know-how accumulation (investment share in research and development (R&D)), in the sample of OECD countries. In general, they found that the impact of human capital on OECD countries is less significant than MRW suggest. Furthermore, the extended model of Nonneman and Vanhoudt accounts for almost 80% of the variance in growth rates among OECD nations (compared to 65% in MRW). This implies that the R&D investment share was an omitted variable in MRW's study.
- *Islam (1995)* argued for and implemented a panel data approach to study cross-country growth and specifically the phenomenon of convergence. The main advantage of the panel technique is its ability to account for differences in the aggregate production function between economies. As a result, there are larger rates of conditional convergence and lower values of output elasticity with respect to capital. The faster rate of convergence supports the Solow model's attitude of policy irrelevance. Historically, only the rates of saving and population growth were regarded to be the variables that should be controlled by policy. His research, on the other hand, emphasizes the relevance of the $A(0)$ term as a predictor of the steady-state level of income. It so underlines the fact that, even with similar rates of saving

and population growth, a country may directly improve its long-run economic position by improving the components of $A(0)$.

- *Durlauf and Johnson (1995)* used MRW's work as a starting point. They rejected the linear model often employed to examine the cross-country growth process in favor of a multiple regime alternative in which different economies obey distinct linear models when grouped according to initial conditions. Their findings are divided into two categories. To begin, they reject the cross-country linear model specification that supports the majority of empirical work on growth. Second, they employ regression tree approaches to find groups of nations that follow a common mode. This research demonstrates significant disparities in the aggregate production functions of economies with different initial conditions. These characteristics demonstrate the consistency of growth rate with a multiple steady-state.
- *Lee et al. (1997)* allow countries to differ in terms of level effects, growth effects, and speed of convergence. From an econometric view, their interest is the nature of the biases in the estimated coefficients when the data is pooled and the parameters are heterogeneous. They proved that the estimations of these parameters in the pooled regression are biased. They developed a stochastic version of the Solow model in which the heterogeneous parameters were treated as random coefficients and used maximum likelihood estimation[13].
- *Maddala and Wu (2000)* developed an iterative Bayesian technique (shrinkage estimator)[14] to solve the heterogeneity problem in panel data addressed by Lee et al. (1997). Maddala and Wu argued that their estimate approach is better than that of Lee et al. (1997) because the latter's method is inefficient in the presence of lagged dependent variables.
- *Easterly and Levine (2001)* employed a similar method to that of Islam to move away from the premise that all countries have the same level of technology. By inserting regional dummies, these authors allowed the term A (technological process) to differ and disputed MRW's claim that productivity levels are the same across countries. The authors of this research are interesting since they employed a range of different

[13] Maximum likelihood estimation (MLE) is a technique for estimating the parameters of a given distribution using observed data. For example, if a population is known to have a normal distribution but the mean and variance are unknown, MLE can be used to estimate them using a smaller sample of the population by identifying certain values of the mean and variance that correlate to the most likely outcome.

[14] In Bayesian analysis, shrinkage is defined in terms of priors. Shrinkage is where: *"the posterior estimate of the prior mean is shifted from the sample mean towards the prior mean"* ~ Zhao et al.(2010).

evidence (e.g., patterns of migration across nations) and went well beyond the regression analysis. They also used a generalized method of moments dynamic panel estimator to analyze the relationship between policy and economic growth. They concluded that national policies such as education, trade openness, inflation, and government size are significantly related to economic growth.

- *Durlauf (2000*) said that growth is an area where the economic analysis should be complemented by historical research to a far higher extent than has been done. Historical studies based on informal statistical assertions can give strong priors for difficulties such as variable selection and the parameterization of cross-country parameter heterogeneity. He suggested Bayesian estimate methods, in which evidence from the past is treated as constraints on prior. Even if this combination of qualitative and quantitative research does not prove to be feasible, there is little doubt that qualitative investigations may augment the econometric framework.

8. Conclusions

The replication of the MRW research in 1992 yielded conflicting findings in comparison to the present study's conclusion. This study confirms that the augmented Solow model helps to understand better the international income disparities in income per working-age person rather than textbook Solow model. However, the results of regressions at different time periods do not support $Y = K^{\frac{1}{3}}H^{\frac{1}{3}}L^{\frac{1}{3}}$. It is important to highlight that the regression findings for the OECD countries generally contradict the whole MRW theory (1992).

In the textbook Solow model, we observe that the results for the period 1960-1985 (calculated with our data) have differences in relation with the initial study of MRW (1992). The adjusted R^2 is at low level, this means that the regressions do not have statistical strength and the sizes of coefficients are different from the original framework. Furthermore, the coefficients have the expected signs, but the negative impact of population growth is larger than Solow forecasts, while the positive impact of investments as a share of GDP is less than the original study estimate and the capital of share deviates from the initial a. These results are valid, also, for the periods 1960-2019 and 1970-2019 with the only difference that a is closer to the initial a.

By adding human capital as proposed by MRW in their empirical framework, we find that the regressions have better statistical strength, for all the periods and samples. Additionally, the effects of investment become smaller, while the effects of population growth and human capital become larger. The elasticity of income with respect to capital (a) and to human capital (β) is different from the initial study. However, when we use recent economic data until 2019 to replicate the MRW empirical work, we observe that the share of human capital has more weight in the regression than the share of capital.

Subsequently, we examine the presence of convergence between countries. Based on the replicated regressions, the absolute (unconditional) convergence and the conditional convergence are valid only for OECD countries for all the periods. The other models do not have good fits of regression. These findings confirm one part of the conclusions of MRW (1992), showing that absolute convergence will be observed only if the economie's investments, population growth rates, and technological progresses are similar, in other words if the economies are homogenous. Otherwise, conditional convergence may exist, indicating that each country will eventually converge to its own steady state.

The present thesis allows for comparison of the convergence speeds between textbook and augmented Solow models. The results revealed that under the conditions of the augmented Solow model, economies tend to converge to their steady states faster.

A panel data method is implemented to examine better the textbook and augmented Solow regressions. The panel approach allows for heterogeneity in aggregate production functions across countries and it takes into account the dimension of time. In this way, we grouped each country per continent and we concluded that the countries which belong to Africa and Asia realize lower income per worker, while European countries realize higher income per worker. Also, oil and OECD countries have positive and statistically significant relationship with income per worker.

Finally, the results of the replicated regressions for all the periods and samples do not verified the MRW study at all. Using recent economic data we find out that the human capital has more weight in regressions rather than physical capital. The regressions do not have statistically strength and consequently the independent variables do not explain sufficiently the income per worker, although the coefficients have the expected signs and magnitudes. Lastly, unlike the other groups of economies, the OECD countries exhibit both unconditional and conditional convergence.

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Appendix A: Decriptive Statistics

In this study, we calculate the average, the standard deviation, the minimum and the maximum and the coefficient of variance (CV) for all of the three samples 1960-1985, 1960-2019 and 1970-2019, respectively. The tables of descriptive statistics include the following variables: GDP's per worker, the investment as share of gdp (I/GDP), the population growth (n+g+δ) and the percentage of population which enrolled in secondary school aged 15-64 (school).

Table XX: Descriptive Statistics 1960-1985

	gdp60	**gdp85**	**n+g+δ**	**I/GDP**	**school**
Average	10404.20	19091.70	0.07	0.36	0.21
Stand. Dev.	9363.46	17683.55	0.01	0.19	0.15
Min	500.07	681.65	0.05	0.08	0.01
Max	51532.24	79065.64	0.09	1.01	0.62
CV(%)	89.0	92.62	14.29	52.78	71.43

The average GDP per worker in 1960, which will be used to compute convergence among countries, is 10404.2, with minimum value 500.07 and maximum value 51532.24. The standard deviation from the arithmetic mean is 9363.46. Also, the average GDP per worker in 1985 is 19091.70, it ranges from 681.65 to 79065.64, with a standard deviation 17683.55. The CV is at high level for gdp60 at 89% and gdp85 at 92.62% and this means that there are important income differences between countries. The mean of population growth is 7% and the CV located at low level at 14.29 by showing us small differences between the population growth across countries. The investments as share of GDP have an average about 36% and the CV is nearly to 53% noting some differences in capital accumulation. The human capital has an average 21% and fluctuates between 1% and 62%, with a standard deviation 15% and with a CV approximately 71.5% highlighting the variations in human capital stock among countries.

Table XXI: Descriptive Statistics 1960-2019

	gdp60	gdp19	n+g+δ	I/GDP	school
Average	10404.20	33924.42	0.07	0.33	0.31
Stand. Dev.	9363.46	33648.99	0.01	0.13	0.15
Min	500.07	359.99	0.05	0.10	0.03
Max	51532.24	148228.16	0.09	0.82	0.69
CV(%)	89.0	99.19	14.29	39.40	48.39

As we can see, the first variable in Table XXI exists and in the previous Table XX. The results for the gdp60 are the same exactly with Table XX. Continuing the analysis, the gdp19 have an arithmetic mean about 33924.42, with a standard deviation almost 33649 and ranging between 359.99 and 148228.16 and a CV 99.19%, resulted that there are big income variations. The population growth has the same results with Table XX. Thereafter, the average of physical capital stock is 33% and is located between 10% and 82%, with a CV 39.4%, concluding that the countries invest with similar way on capital accumulation. The human capital has been of 31% in average and in terms of human capital stock countries have been somewhat diversified.

Table XXII: Descriptive Statistics 1970-2019

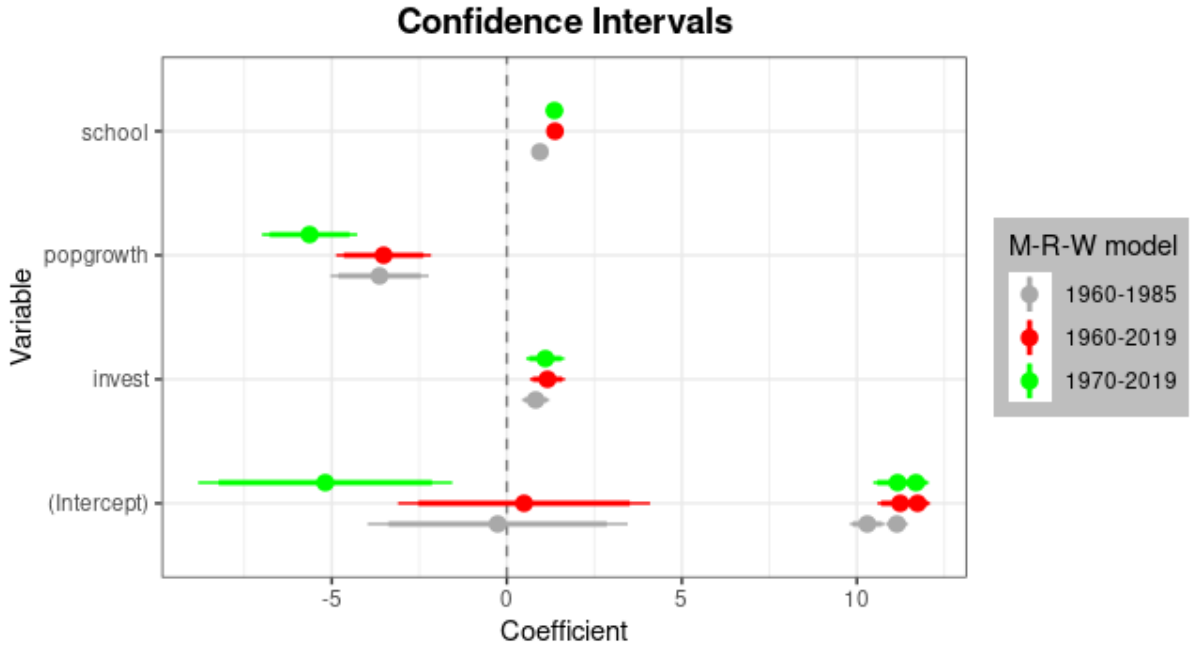
	gdp70	gdp19	n+g+δ	I/GDP	school
Average	14749.69	33674.70	0.07	0.32	0.30
Stand. Dev.	33751.38	33389.78	0.01	0.14	0.15
Min	500.07	359.99	0.05	0.08	0.03
Max	320472.45	148228.16	0.14	0.82	0.69
CV(%)	228.83	99.15	14.29	43.75	50.0

From the Table XXII, we observe the average of gdp70 is 14749.69 and ranging from 500.07 to 320472.45. The standard deviation from the mean of gdp70 is 33751.38. Also, the CV exceeds the 100%, indicates that countries largely diversified in terms of income per worker in 1970. Next the gdp19, which has an average at 33674.70 with standard deviation 33389.78 and it ranges from almost 360 to 148228,16. We observe that CV approaches the 100%, as a result a wide range of incomes per worker. Moreover, the population growth has the same results with the two previous Tables. The mean of investments is 32% and fluctuate between 8% and 82%. The CV is at low level 43.75% and the economies do not differ in capital stock. Finally, the school has an average about 30% with minimum value 3% and maximum 69% with a CV 50%, which means that countries have a vast disparity in terms of human capital.

Appendix B: Confidence Intervals

When we make a statistical estimate, whether it is a summary statistic or a test statistic, there is always uncertainty around that estimate because the number is based on a sample of the population. The confidence interval is the range of values between which we expect our estimate to fall a given percentage of the time if we re-sample the population in the same way.

A confidence interval is defined as the mean of your estimate plus and minus the variance in that estimate. This is the range of values we expect our estimate to fall within if we rerun the test with a specific level of confidence. In statistics, confidence is another term for probability. For example, if we create a confidence interval with a 95 percent confidence level, we are certain that the estimate will fall between the upper and lower values given by the confidence interval 95 times out of 100 times.



Confidence Interval for each variable in common graph.

Figure IV: Confidence Intervals of each variable for the available samples

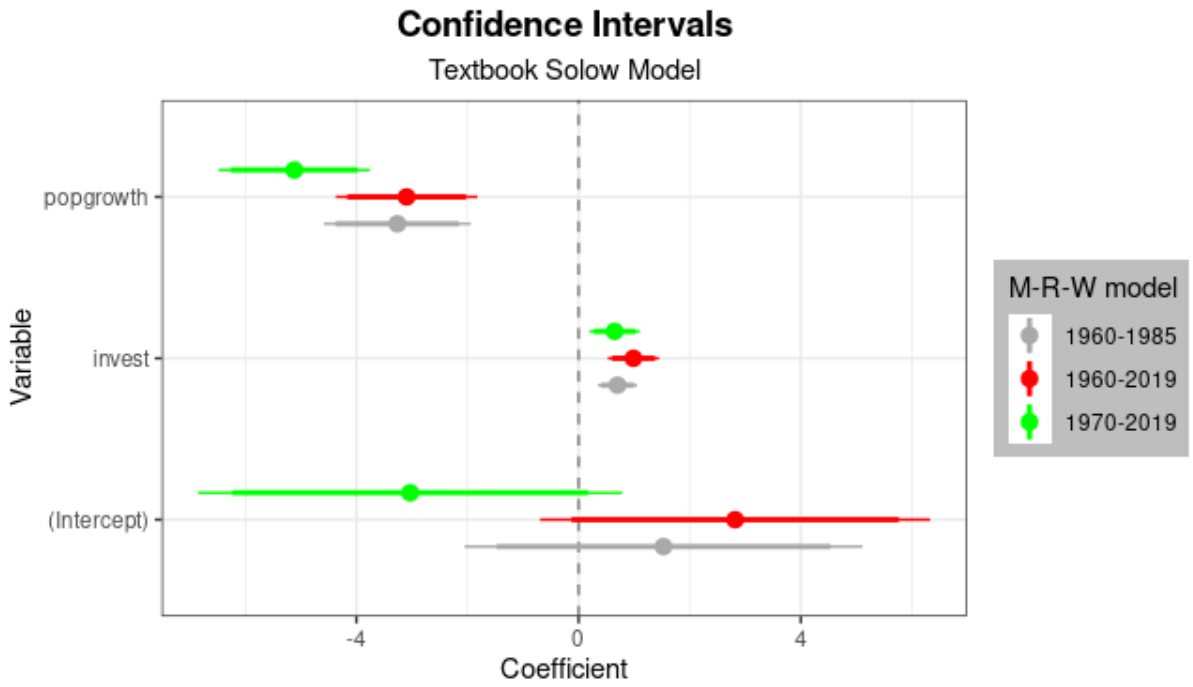


Figure V: Confidence Intervals of the Textbook Solow model for the available samples

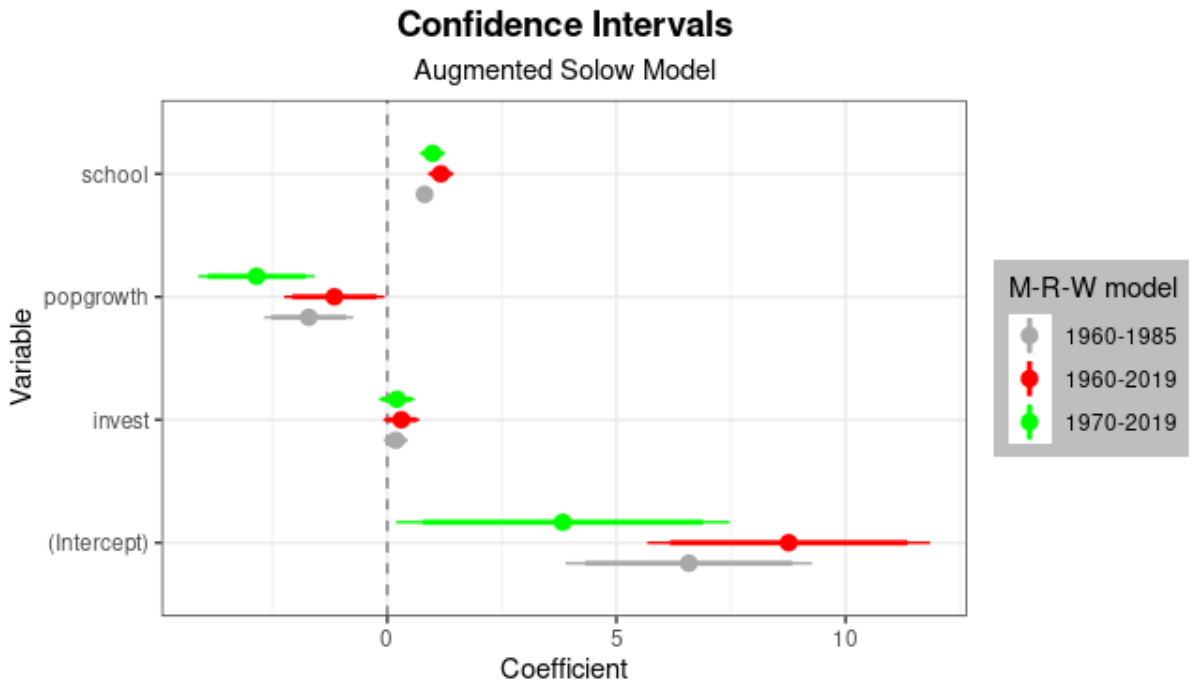


Figure VI: Confidence Intervals of Augmented Solow model for the available samples

Appendix C: Correlation Matrices

The correlation matrices in Tables below are designed to detect potential multicollinearity issues. Every equation has multicollinearity since all variables are connected to some extent. If the absolute value of the correlation coefficient between the two variables is more than 0.8, the problem of multicollinearity is important. For the periods 1960-1985 and 1960-2019 between the GDP's observed multicollinearity in Figure VII and VIII, all the other variables are at lower level from 0.8.

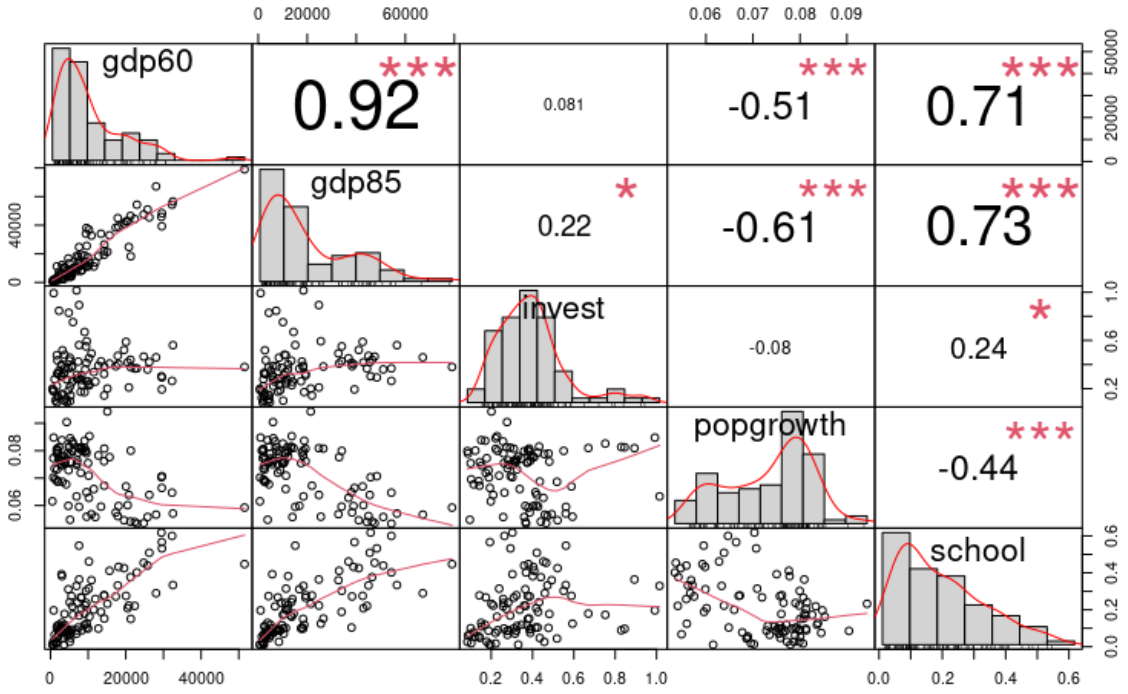


Figure VII: Correlation Matrix 1960-1985

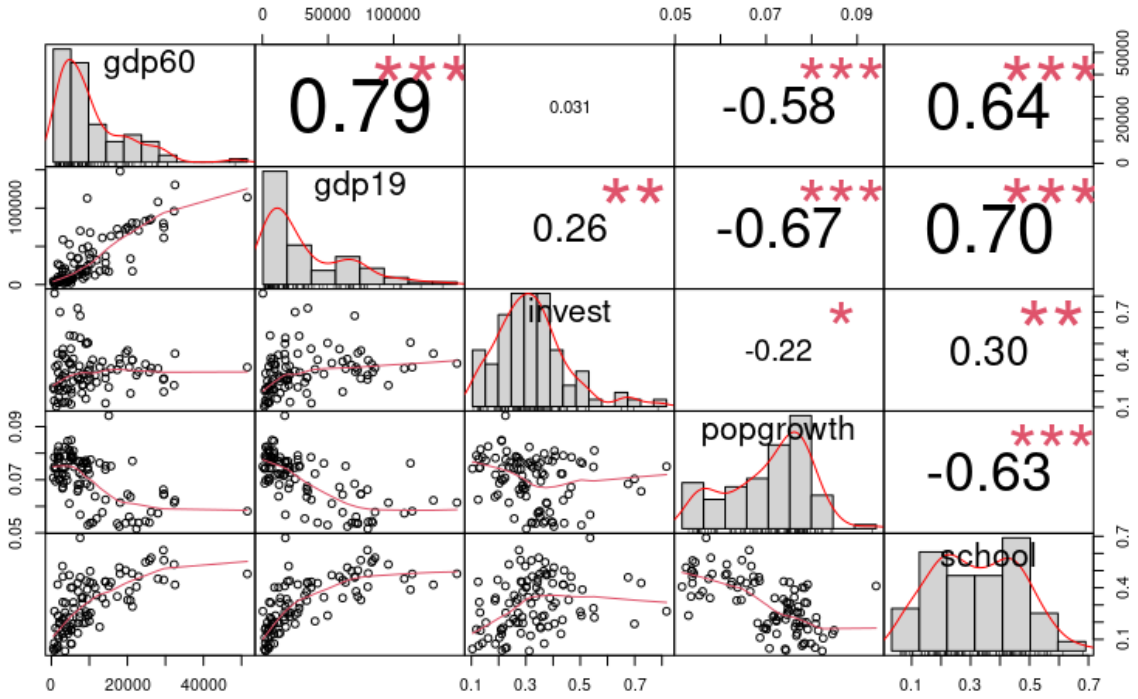


Figure VIII: Correlation Matrix 1960-2019

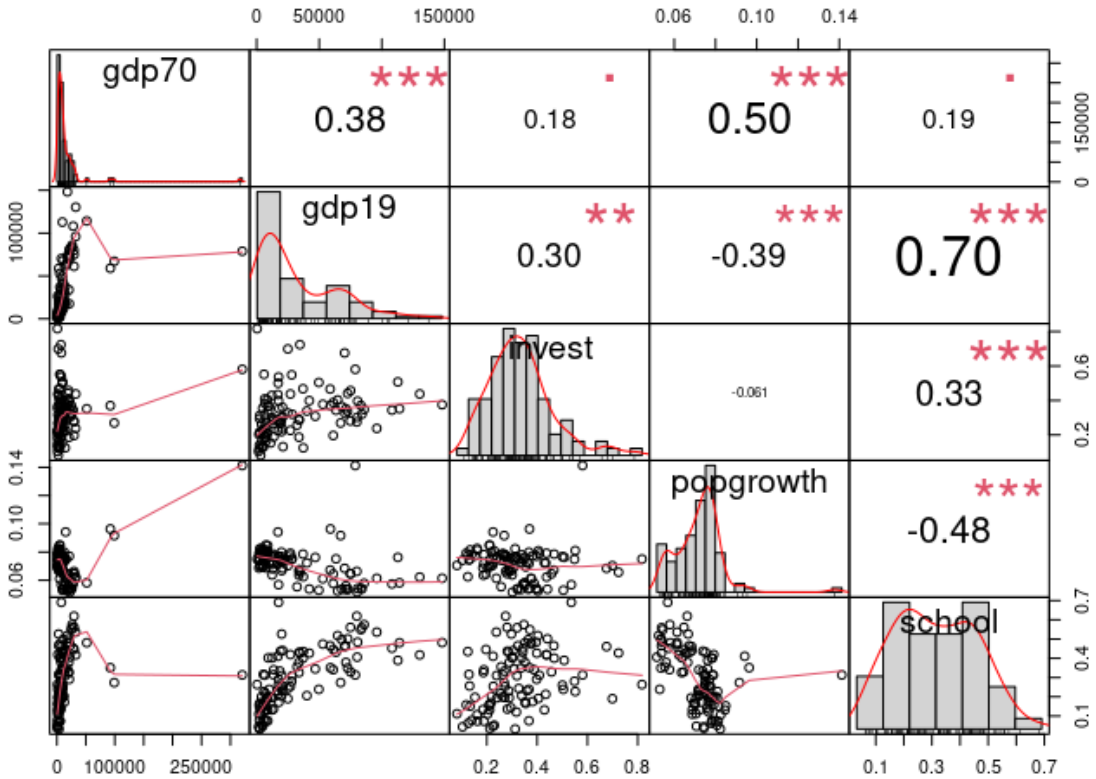


Figure IX: Correlation Matrix 1970-2019

Appendix D: Datasets

Table XXIII: Dataset 1960-1985

country	nonoil	interm	OECD	gdp60	gdp85	growth	popgrowth	invest	school
Algeria	1	1	0	12712,84	18347,82	1,47	0,08	0,39	0,10
Benin	1	0	0	1828,36	3085,14	2,09	0,07	0,43	0,05
Botswana	1	1	0	1677,38	11231,05	7,61	0,08	0,48	0,10
Burundi	1	0	0	1303,03	2092,52	1,89	0,07	0,10	0,02
Cameroon	1	1	0	4803,60	8955,66	2,49	0,07	0,19	0,09
Central African Republic	1	0	0	3190,55	2703,62	-0,66	0,07	0,52	0,04
Congo, Rep.	1	0	0	3717,03	10671,95	4,22	0,08	0,48	0,18
Egypt, Arab Rep.	1	0	0	3595,40	10173,39	4,16	0,08	0,10	0,10
Gabon	0	0	0	9555,33	38066,85	5,53	0,06	0,41	0,10
Gambia, The	0	0	0	4377,26	4755,91	0,33	0,08	0,09	0,06
Ghana	1	0	0	5561,15	4207,61	-1,12	0,08	0,38	0,27
Cote d'Ivoire	1	1	0	4289,40	6031,44	1,36	0,09	0,28	0,09
Kenya	1	1	0	5218,22	6157,97	0,66	0,08	0,22	0,07
Lesotho	0	0	0	1101,73	2109,40	2,60	0,07	0,28	0,06
Malawi	1	1	0	766,16	1824,59	3,47	0,08	0,18	0,03
Mali	1	1	0	500,07	681,65	1,24	0,06	0,20	0,01
Mauritania	1	0	0	5118,67	8439,32	2,00	0,08	0,46	0,03
Mauritius	1	0	0	7080,82	9393,20	1,13	0,08	0,28	0,24
Morocco	1	1	0	2844,38	6045,56	3,02	0,08	0,39	0,07
Mozambique	1	0	0	762,09	756,12	-0,03	0,07	0,19	0,01
Niger	1	0	0	3577,05	2324,69	-1,72	0,08	0,33	0,01
Rwanda	1	0	0	1680,21	1828,78	0,34	0,08	0,08	0,03
Senegal	1	1	0	5333,82	4546,52	-0,64	0,08	0,14	0,05
South Africa	1	1	0	14218,69	19331,90	1,23	0,08	0,32	0,28
Tanzania	1	1	0	1678,56	2061,20	0,82	0,08	0,22	0,02
Togo	1	0	0	2102,32	2889,57	1,27	0,08	0,32	0,09
Tunisia	1	1	0	3824,42	9669,21	3,71	0,08	0,37	0,12
Uganda	1	0	0	1912,30	1456,69	-1,09	0,08	0,12	0,05
Congo, Dem. Rep.	1	0	0	5177,62	3848,26	-1,19	0,05	0,10	0,07
Zambia	1	1	0	4834,86	4351,91	-0,42	0,08	0,83	0,09
Zimbabwe	1	1	0	3021,74	3783,78	0,90	0,08	0,15	0,13
Bangladesh	1	1	0	2986,64	2565,64	-0,61	0,07	0,15	0,11
Hong Kong SAR, China	1	1	0	7588,15	24732,09	4,73	0,08	0,89	0,36
India	1	1	0	1758,32	2623,69	1,60	0,07	0,32	0,11
Iran, Islamic Rep.	0	0	0	21319,03	18294,36	-0,61	0,08	0,38	0,15
Israel	1	1	0	15682,18	33003,48	2,98	0,08	0,41	0,41
Japan	1	1	1	10201,33	36838,02	5,14	0,06	0,45	0,46
Jordan	1	1	0	15099,96	21420,88	1,40	0,09	0,20	0,23
Korea, Rep.	1	1	0	3040,39	12194,77	5,56	0,08	0,40	0,38
Malaysia	1	1	0	5104,13	13493,70	3,89	0,08	0,43	0,24
Nepal	1	0	0	1935,26	2425,56	0,90	0,07	0,14	0,06

Pakistan	1	1	0	2223,32	5005,96	3,25	0,08	0,35	0,12
Philippines	1	1	0	5783,42	6849,39	0,68	0,08	0,26	0,22
Singapore	1	1	0	9427,81	34086,33	5,14	0,08	0,55	0,30
Sri Lanka	1	1	0	2926,85	5733,15	2,69	0,08	0,30	0,39
Syrian Arab Republic	1	1	0	9058,66	18769,38	2,91	0,08	0,17	0,12
Thailand	1	1	0	2256,19	7307,80	4,70	0,08	0,85	0,10
Austria	1	1	1	21236,10	46452,85	3,13	0,05	0,44	0,38
Belgium	1	1	1	19527,53	41010,06	2,97	0,05	0,52	0,43
Cyprus	0	0	0	6916,50	18452,17	3,93	0,06	1,01	0,33
Denmark	1	1	1	25785,50	51001,73	2,73	0,06	0,36	0,44
Finland	1	1	1	17335,29	38269,38	3,17	0,06	0,39	0,27
France	1	1	1	20485,73	42898,72	2,96	0,06	0,42	0,21
Germany	1	1	1	22371,20	44366,06	2,74	0,05	0,37	0,22
Greece	1	1	1	10869,47	32726,81	4,41	0,06	0,49	0,36
Iceland	0	0	0	20053,17	42589,94	3,01	0,07	0,59	0,28
Ireland	1	1	1	18076,38	38877,18	3,06	0,06	0,40	0,43
Italy	1	1	1	17866,69	44983,16	3,69	0,06	0,47	0,33
Luxembourg	0	0	0	32509,55	56571,47	2,22	0,06	0,56	0,33
Malta	0	0	0	4729,45	16786,98	5,07	0,06	0,37	0,31
Netherlands	1	1	1	26239,94	45497,64	2,20	0,06	0,42	0,51
Norway	1	1	1	28031,27	67139,20	3,49	0,06	0,46	0,29
Portugal	1	1	1	9602,61	25542,84	3,91	0,06	0,59	0,12
Spain	1	1	1	13404,93	34011,36	3,72	0,06	0,43	0,19
Sweden	1	1	1	24750,82	47502,04	2,61	0,05	0,47	0,45
Switzerland	1	1	1	51532,24	79065,64	1,71	0,06	0,38	0,45
Turkey	1	1	1	9983,46	17483,09	2,24	0,08	0,26	0,10
United Kingdom	1	1	1	22939,37	54317,61	3,45	0,05	0,37	0,40
Barbados	0	0	0	7572,04	15098,55	2,76	0,06	0,56	0,55
Canada	1	1	1	29593,39	48378,41	1,97	0,07	0,29	0,53
Costa Rica	1	1	0	10328,72	13676,92	1,12	0,09	0,23	0,16
Dominican Republic	1	1	0	5954,96	10070,30	2,10	0,08	0,75	0,17
El Salvador	1	1	0	6967,10	7991,20	0,55	0,07	0,28	0,09
Guatemala	1	1	0	6961,06	10409,51	1,61	0,08	0,31	0,07
Haiti	1	1	0	4151,95	4383,79	0,22	0,07	0,12	0,08
Honduras	1	1	0	5771,25	7528,86	1,06	0,08	0,39	0,09
Jamaica	1	1	0	11503,04	11198,41	-0,11	0,07	0,34	0,20
Mexico	1	1	0	14274,68	26564,84	2,48	0,08	0,38	0,15
Nicaragua	1	1	0	8375,63	8598,72	0,11	0,08	0,23	0,09
Panama	1	1	0	8230,09	19282,80	3,41	0,08	0,31	0,27
Trinidad and Tobago	1	1	0	14248,41	21923,46	1,72	0,07	0,14	0,28
United States	1	1	1	32284,06	54317,61	2,08	0,06	0,26	0,60
Argentina	1	1	0	20812,93	24756,80	0,69	0,06	0,21	0,22
Bolivia	1	1	0	8036,06	8007,77	-0,01	0,07	0,17	0,27
Brazil	1	1	0	7371,03	17831,49	3,53	0,08	0,42	0,10
Chile	1	1	0	10148,23	11325,77	0,44	0,07	0,24	0,31
Colombia	1	1	0	8139,92	11909,17	1,52	0,08	0,27	0,20
Ecuador	1	1	0	9057,05	14411,93	1,86	0,08	0,67	0,18
Paraguay	1	1	0	7565,39	13252,57	2,24	0,08	0,29	0,17

Peru	1	1	0	9516,80	11128,69	0,63	0,08	0,26	0,24
Uruguay	1	1	0	11911,66	13946,88	0,63	0,06	0,26	0,26
Venezuela, RB	1	1	0	836,64	962,49	0,56	0,08	0,99	0,20
Australia	1	1	1	29456,31	45856,62	1,77	0,07	0,30	0,62
Fiji	0	0	0	9195,56	12141,40	1,11	0,08	0,36	0,22
Indonesia	1	1	0	2975,60	5861,11	2,71	0,08	0,31	0,10
New Zealand	1	1	1	29559,49	39274,11	1,14	0,07	0,19	0,57

Notes: The following countries Cote d'Ivoire and Democratic Republic of Congo report in MRW's dataset as Ivory Coast and Zaire, respectively.

Table XXIV: Dataset 1960-2019

country	nonoil	interm	OECD	gdp60	gdp19	growth	popgrowth	invest	school
Algeria	1	1	0	12712,84	17787,84	0,57	0,08	0,35	0,17
Benin	1	0	0	1828,36	6081,00	2,04	0,08	0,32	0,12
Botswana	1	1	0	1677,38	26976,33	4,71	0,08	0,44	0,42
Burundi	1	0	0	1303,03	1534,36	0,28	0,07	0,10	0,04
Cameroon	1	1	0	4803,60	6579,21	0,53	0,08	0,38	0,17
Central African Republic	1	0	0	3190,55	1803,50	-0,97	0,07	0,20	0,11
Congo, Rep.	1	0	0	3717,03	6453,86	0,94	0,08	0,41	0,31
Egypt, Arab Rep.	1	0	0	3595,40	21064,81	3,00	0,07	0,13	0,26
Gabon	0	0	0	9555,33	24857,91	1,62	0,07	0,33	0,24
Gambia, The	0	0	0	4377,26	4427,95	0,02	0,08	0,13	0,15
Ghana	1	0	0	5561,15	9244,11	0,86	0,08	0,34	0,40
Cote d'Ivoire	1	1	0	4289,40	8857,99	1,23	0,08	0,21	0,13
Kenya	1	1	0	5218,22	7413,92	0,60	0,08	0,21	0,15
Lesotho	0	0	0	1101,73	4818,72	2,50	0,07	0,35	0,17
Malawi	1	1	0	766,16	2208,10	1,79	0,08	0,14	0,08
Mali	1	1	0	500,07	4785,66	3,83	0,07	0,22	0,05
Mauritania	1	0	0	5118,67	8869,58	0,93	0,08	0,37	0,08
Mauritius	1	0	0	7080,82	33787,67	2,65	0,07	0,29	0,38
Morocco	1	1	0	2844,38	12117,02	2,46	0,07	0,43	0,13
Mozambique	1	0	0	762,09	2396,74	1,94	0,07	0,21	0,04
Niger	1	0	0	3577,05	2489,67	-0,61	0,08	0,31	0,03
Rwanda	1	0	0	1680,21	4075,40	1,50	0,08	0,13	0,06
Senegal	1	1	0	5333,82	6140,81	0,24	0,08	0,19	0,07
South Africa	1	1	0	14218,69	19072,84	0,50	0,07	0,28	0,44
Tanzania	1	1	0	1678,56	4502,20	1,67	0,08	0,23	0,05
Togo	1	0	0	2102,32	3847,23	1,02	0,08	0,26	0,20
Tunisia	1	1	0	3824,42	16470,08	2,47	0,07	0,29	0,23
Uganda	1	0	0	1912,30	3993,47	1,25	0,08	0,16	0,11
Congo, Dem. Rep.	1	0	0	5177,62	2046,01	-1,57	0,08	0,12	0,16
Zambia	1	1	0	4834,86	5898,53	0,34	0,08	0,55	0,23
Zimbabwe	1	1	0	3021,74	5313,72	0,96	0,07	0,13	0,32
Bangladesh	1	1	0	2986,64	6950,47	1,43	0,07	0,26	0,22
Hong Kong SAR, China	1	1	0	7588,15	70322,70	3,77	0,07	0,68	0,46
India	1	1	0	1758,32	10008,23	2,95	0,07	0,37	0,24
Iran, Islamic Rep.	0	0	0	21319,03	17510,41	-0,33	0,08	0,40	0,29
Israel	1	1	0	15682,18	63430,66	2,37	0,08	0,34	0,43
Japan	1	1	1	10201,33	67960,30	3,21	0,05	0,37	0,50
Jordan	1	1	0	15099,96	17031,23	0,20	0,09	0,23	0,41
Korea, Rep.	1	1	0	3040,39	58749,00	5,02	0,07	0,47	0,47
Malaysia	1	1	0	5104,13	37043,41	3,36	0,08	0,47	0,40
Nepal	1	0	0	1935,26	5591,43	1,80	0,07	0,21	0,16

Pakistan	1	1	0	2223,32	8215,26	2,22	0,08	0,27	0,20
Philippines	1	1	0	5783,42	13395,99	1,42	0,08	0,26	0,31
Singapore	1	1	0	9427,81	112824,76	4,21	0,08	0,51	0,39
Sri Lanka	1	1	0	2926,85	19995,42	3,26	0,07	0,30	0,53
Syrian Arab Republic	1	1	0	9058,66	11175,11	0,36	0,08	0,15	0,20
Thailand	1	1	0	2256,19	24952,65	4,07	0,07	0,70	0,19
Austria	1	1	1	21236,10	80654,29	2,26	0,05	0,40	0,48
Belgium	1	1	1	19527,53	72711,44	2,23	0,05	0,44	0,50
Cyprus	0	0	0	6916,50	34577,83	2,73	0,07	0,72	0,43
Denmark	1	1	1	25785,50	84126,74	2,00	0,05	0,32	0,56
Finland	1	1	1	17335,29	72633,14	2,43	0,05	0,34	0,35
France	1	1	1	20485,73	71343,59	2,11	0,06	0,35	0,38
Germany	1	1	1	22371,20	80322,65	2,17	0,05	0,30	0,41
Greece	1	1	1	10869,47	42082,56	2,29	0,05	0,40	0,43
Iceland	0	0	0	20053,17	75061,65	2,24	0,06	0,46	0,33
Ireland	1	1	1	18076,38	148228,16	3,57	0,06	0,38	0,48
Italy	1	1	1	17866,69	64738,33	2,18	0,05	0,40	0,52
Luxembourg	0	0	0	32509,55	130298,20	2,35	0,06	0,44	0,42
Malta	0	0	0	4729,45	52904,79	4,09	0,06	0,38	0,47
Netherlands	1	1	1	26239,94	85864,50	2,01	0,06	0,35	0,57
Norway	1	1	1	28031,27	108136,67	2,29	0,06	0,34	0,45
Portugal	1	1	1	9602,61	49702,30	2,79	0,05	0,50	0,24
Spain	1	1	1	13404,93	61167,09	2,57	0,06	0,39	0,34
Sweden	1	1	1	24750,82	83250,52	2,06	0,05	0,37	0,55
Switzerland	1	1	1	51532,24	114156,65	1,35	0,06	0,35	0,48
Turkey	1	1	1	9983,46	40134,29	2,36	0,07	0,34	0,21
United Kingdom	1	1	1	22939,37	70750,27	1,91	0,05	0,32	0,47
Barbados	0	0	0	7572,04	17520,49	1,42	0,06	0,54	0,69
Canada	1	1	1	29593,39	74961,70	1,58	0,06	0,28	0,56
Costa Rica	1	1	0	10328,72	26984,75	1,63	0,08	0,23	0,25
Dominican Republic	1	1	0	5954,96	28028,68	2,63	0,07	0,55	0,28
El Salvador	1	1	0	6967,10	12747,83	1,02	0,07	0,29	0,19
Guatemala	1	1	0	6961,06	13393,00	1,11	0,08	0,28	0,14
Haiti	1	1	0	4151,95	2611,54	-0,79	0,07	0,22	0,17
Honduras	1	1	0	5771,25	8602,30	0,68	0,08	0,41	0,19
Jamaica	1	1	0	11503,04	12372,86	0,12	0,06	0,30	0,40
Mexico	1	1	0	14274,68	28408,33	1,17	0,08	0,32	0,31
Nicaragua	1	1	0	8375,63	7872,41	-0,11	0,08	0,24	0,19
Panama	1	1	0	8230,09	46855,44	2,95	0,08	0,31	0,34
Trinidad and Tobago	1	1	0	14248,41	37291,05	1,63	0,06	0,12	0,43
United States	1	1	1	32284,06	95999,14	1,85	0,06	0,24	0,54
Argentina	1	1	0	20812,93	33834,81	0,82	0,06	0,19	0,33
Bolivia	1	1	0	8036,06	13651,46	0,90	0,07	0,19	0,34
Brazil	1	1	0	7371,03	20668,78	1,75	0,07	0,36	0,23
Chile	1	1	0	10148,23	34109,42	2,05	0,07	0,29	0,43

Colombia	1	1	0	8139,92	20138,75	1,54	0,07	0,24	0,31
Ecuador	1	1	0	9057,05	17212,94	1,09	0,08	0,50	0,26
Paraguay	1	1	0	7565,39	19420,79	1,60	0,08	0,27	0,25
Peru	1	1	0	9516,80	18511,82	1,13	0,07	0,27	0,33
Uruguay	1	1	0	11911,66	32265,74	1,69	0,06	0,26	0,36
Venezuela, RB	1	1	0	836,64	359,99	-1,43	0,08	0,82	0,26
Australia	1	1	1	29456,31	80042,95	1,69	0,07	0,27	0,62
Fiji	0	0	0	9195,56	20794,15	1,38	0,07	0,31	0,44
Indonesia	1	1	0	2975,60	16968,63	2,95	0,07	0,43	0,21
New Zealand	1	1	1	29559,49	61195,15	1,23	0,06	0,20	0,45

Notes: The following countries Cote d'Ivoire and Democratic Republic of Congo report in MRW's dataset as Ivory Coast and Zaire, respectively.

Table XXV: Dataset 1970-2019

country	nonoil	interm	OECD	gdp70	gdp19	growth	popgrowth	invest	school
Algeria	1	1	0	12712,84	17787,84	0,69	0,08	0,35	0,17
Benin	1	0	0	1828,36	6081,00	2,45	0,08	0,32	0,12
Botswana	1	1	0	1677,38	26976,33	5,67	0,08	0,44	0,42
Burundi	1	0	0	1303,03	1534,36	0,33	0,07	0,10	0,04
Cameroon	1	1	0	4803,60	6579,21	0,64	0,08	0,38	0,17
Central African Republic	1	0	0	3190,55	1803,50	-1,16	0,07	0,20	0,11
Congo, Rep.	1	0	0	3717,03	6453,86	1,13	0,08	0,41	0,31
Egypt, Arab Rep.	1	0	0	3595,40	21064,81	3,61	0,07	0,13	0,26
Gabon	0	0	0	9555,33	24857,91	1,95	0,07	0,33	0,24
Gambia, The	0	0	0	4377,26	4427,95	0,02	0,08	0,13	0,15
Ghana	1	0	0	5561,15	9244,11	1,04	0,08	0,34	0,40
Cote d'Ivoire	1	1	0	4289,40	8857,99	1,48	0,08	0,21	0,13
Kenya	1	1	0	5218,22	7413,92	0,72	0,08	0,21	0,15
Lesotho	0	0	0	1101,73	4818,72	3,01	0,07	0,35	0,17
Liberia	1	0	0	3752,41	2318,78	-0,98	0,08	0,30	0,14
Malawi	1	1	0	766,16	2208,10	2,16	0,08	0,14	0,08
Mali	1	1	0	500,07	4785,66	4,61	0,07	0,22	0,05
Mauritania	1	0	0	5118,67	8869,58	1,12	0,08	0,37	0,08
Mauritius	1	0	0	7080,82	33787,67	3,19	0,07	0,29	0,38
Morocco	1	1	0	2844,38	12117,02	2,96	0,07	0,43	0,13
Mozambique	1	0	0	762,09	2396,74	2,34	0,07	0,21	0,04
Niger	1	0	0	3577,05	2489,67	-0,74	0,08	0,31	0,03
Rwanda	1	0	0	1680,21	4075,40	1,81	0,08	0,13	0,06
Senegal	1	1	0	5333,82	6140,81	0,29	0,08	0,19	0,07
Sierra Leone	1	0	0	2399,09	3218,45	0,60	0,07	0,08	0,11
South Africa	1	1	0	14218,69	19072,84	0,60	0,07	0,28	0,44
Sudan	1	0	0	3918,13	7581,03	1,35	0,08	0,16	0,07
Tanzania	1	1	0	1678,56	4502,20	2,01	0,08	0,23	0,05
Togo	1	0	0	2102,32	3847,23	1,23	0,08	0,26	0,20
Tunisia	1	1	0	3824,42	16470,08	2,98	0,07	0,29	0,23
Uganda	1	0	0	1912,30	3993,47	1,50	0,08	0,16	0,11
Congo, Dem. Rep.	1	0	0	5177,62	2046,01	-1,89	0,08	0,12	0,16
Zambia	1	1	0	4834,86	5898,53	0,41	0,08	0,55	0,23
Zimbabwe	1	1	0	3021,74	5313,72	1,15	0,07	0,13	0,32
Bahrain	0	0	0	92345,68	58979,05	-0,92	0,10	0,37	0,35
Bangladesh	1	1	0	2986,64	6950,47	1,72	0,07	0,26	0,22
Myanmar	1	1	0	916,12	7590,45	4,32	0,07	0,18	0,13
Hong Kong SAR, China	1	1	0	7588,15	70322,70	4,54	0,07	0,68	0,46
India	1	1	0	1758,32	10008,23	3,55	0,07	0,37	0,24
Iran, Islamic Rep.	0	0	0	21319,03	17510,41	-0,40	0,08	0,40	0,29
Iraq	0	0	0	12259,27	19793,61	0,98	0,08	0,22	0,20
Israel	1	1	0	15682,18	63430,66	2,85	0,08	0,34	0,43

Japan	1	1	1	10201,33	67960,30	3,87	0,05	0,37	0,50
Jordan	1	1	0	15099,96	17031,23	0,25	0,09	0,23	0,41
Korea, Rep.	1	1	0	3040,39	58749,00	6,04	0,07	0,47	0,47
Malaysia	1	1	0	5104,13	37043,41	4,04	0,08	0,47	0,40
Nepal	1	0	0	1935,26	5591,43	2,17	0,07	0,21	0,16
Pakistan	1	1	0	2223,32	8215,26	2,67	0,08	0,27	0,20
Philippines	1	1	0	5783,42	13395,99	1,71	0,08	0,26	0,31
Saudi Arabia	0	0	0	99101,69	67113,85	-0,80	0,09	0,27	0,27
Singapore	1	1	0	9427,81	112824,76	5,07	0,08	0,51	0,39
Sri Lanka	1	1	0	2926,85	19995,42	3,92	0,07	0,30	0,53
Syrian Arab Republic	1	1	0	9058,66	11175,11	0,43	0,08	0,15	0,20
Thailand	1	1	0	2256,19	24952,65	4,90	0,07	0,70	0,19
United Arab Emirates	0	0	0	320472,45	78830,20	-2,86	0,14	0,58	0,31
Austria	1	1	1	21236,10	80654,29	2,72	0,05	0,40	0,48
Belgium	1	1	1	19527,53	72711,44	2,68	0,05	0,44	0,50
Cyprus	0	0	0	6916,50	34577,83	3,28	0,07	0,72	0,43
Denmark	1	1	1	25785,50	84126,74	2,41	0,05	0,32	0,56
Finland	1	1	1	17335,29	72633,14	2,92	0,05	0,34	0,35
France	1	1	1	20485,73	71343,59	2,55	0,06	0,35	0,38
Germany	1	1	1	22371,20	80322,65	2,61	0,05	0,30	0,41
Greece	1	1	1	10869,47	42082,56	2,76	0,05	0,40	0,43
Iceland	0	0	0	20053,17	75061,65	2,69	0,06	0,46	0,33
Ireland	1	1	1	18076,38	148228,16	4,29	0,06	0,38	0,48
Italy	1	1	1	17866,69	64738,33	2,63	0,05	0,40	0,52
Luxembourg	0	0	0	32509,55	130298,20	2,83	0,06	0,44	0,42
Malta	0	0	0	4729,45	52904,79	4,93	0,06	0,38	0,47
Netherlands	1	1	1	26239,94	85864,50	2,42	0,06	0,35	0,57
Norway	1	1	1	28031,27	108136,67	2,76	0,06	0,34	0,45
Portugal	1	1	1	9602,61	49702,30	3,36	0,05	0,50	0,24
Spain	1	1	1	13404,93	61167,09	3,10	0,06	0,39	0,34
Sweden	1	1	1	24750,82	83250,52	2,48	0,05	0,37	0,55
Switzerland	1	1	1	51532,24	114156,65	1,62	0,06	0,35	0,48
Turkey	1	1	1	9983,46	40134,29	2,84	0,07	0,34	0,21
United Kingdom	1	1	1	22939,37	70750,27	2,30	0,05	0,32	0,47
Barbados	0	0	0	7572,04	17520,49	1,71	0,06	0,54	0,69
Canada	1	1	1	29593,39	74961,70	1,90	0,06	0,28	0,56
Costa Rica	1	1	0	10328,72	26984,75	1,96	0,08	0,23	0,25
Dominican Republic	1	1	0	5954,96	28028,68	3,16	0,07	0,55	0,28
El Salvador	1	1	0	6967,10	12747,83	1,23	0,07	0,29	0,19
Guatemala	1	1	0	6961,06	13393,00	1,34	0,08	0,28	0,14
Haiti	1	1	0	4151,95	2611,54	-0,95	0,07	0,22	0,17
Honduras	1	1	0	5771,25	8602,30	0,81	0,08	0,41	0,19
Jamaica	1	1	0	11503,04	12372,86	0,15	0,06	0,30	0,40

Mexico	1	1	0	14274,68	28408,33	1,40	0,08	0,32	0,31
Nicaragua	1	1	0	8375,63	7872,41	-0,13	0,08	0,24	0,19
Panama	1	1	0	8230,09	46855,44	3,55	0,08	0,31	0,34
Trinidad and Tobago	1	1	0	14248,41	37291,05	1,96	0,06	0,12	0,43
United States	1	1	1	32284,06	95999,14	2,22	0,06	0,24	0,54
Argentina	1	1	0	20812,93	33834,81	0,99	0,06	0,19	0,33
Bolivia	1	1	0	8036,06	13651,46	1,08	0,07	0,19	0,34
Brazil	1	1	0	7371,03	20668,78	2,10	0,07	0,36	0,23
Chile	1	1	0	10148,23	34109,42	2,47	0,07	0,29	0,43
Colombia	1	1	0	8139,92	20138,75	1,85	0,07	0,24	0,31
Ecuador	1	1	0	9057,05	17212,94	1,31	0,08	0,50	0,26
Paraguay	1	1	0	7565,39	19420,79	1,92	0,08	0,27	0,25
Peru	1	1	0	9516,80	18511,82	1,36	0,07	0,27	0,33
Uruguay	1	1	0	11911,66	32265,74	2,03	0,06	0,26	0,36
Venezuela, RB	1	1	0	836,64	359,99	-1,72	0,08	0,82	0,26
Australia	1	1	1	29456,31	80042,95	2,04	0,07	0,27	0,62
Fiji	0	0	0	9195,56	20794,15	1,67	0,07	0,31	0,44
Indonesia	1	1	0	2975,60	16968,63	3,55	0,07	0,43	0,21
New Zealand	1	1	1	29559,49	61195,15	1,49	0,06	0,20	0,45

Notes: The following countries: Cote d'Ivoire, Democratic Republic of Congo and Myanmar report in MRW's dataset as: Ivory Coast, Zaire and Burma, respectively.

Table XXVI: Panel Dataset 1970-2019

country	year	oil	OECD	africa	asia	europe	north_am	south_am	gdp	popgrowth	invest	school
Algeria	(1969,1974]	0	0	1	0	0	0	0	13401,33	0,08	0,38	0,07
Algeria	(1974,1979]	0	0	1	0	0	0	0	16075,44	0,08	0,52	0,10
Algeria	(1979,1984]	0	0	1	0	0	0	0	17701,31	0,09	0,47	0,14
Algeria	(1984,1989]	0	0	1	0	0	0	0	17172,11	0,09	0,35	0,20
Algeria	(1989,1994]	0	0	1	0	0	0	0	14777,79	0,08	0,27	0,24
Algeria	(1994,1999]	0	0	1	0	0	0	0	13638,15	0,08	0,27	0,26
Algeria	(1999,2004]	0	0	1	0	0	0	0	14306,42	0,08	0,28	0,24
Algeria	(2004,2009]	0	0	1	0	0	0	0	15537,78	0,07	0,32	0,22
Algeria	(2009,2014]	0	0	1	0	0	0	0	16357,19	0,06	0,39	0,25
Algeria	(2014,2019]	0	0	1	0	0	0	0	17697,14	0,06	0,41	0,27
Argentina	(1969,1974]	0	0	0	0	0	0	1	26601,38	0,06	0,22	0,21
Argentina	(1974,1979]	0	0	0	0	0	0	1	27953,48	0,06	0,24	0,23
Argentina	(1979,1984]	0	0	0	0	0	0	1	27282,09	0,06	0,16	0,28
Argentina	(1984,1989]	0	0	0	0	0	0	1	25257,81	0,06	0,14	0,30
Argentina	(1989,1994]	0	0	0	0	0	0	1	26385,84	0,07	0,18	0,33
Argentina	(1994,1999]	0	0	0	0	0	0	1	30106,24	0,06	0,18	0,40
Argentina	(1999,2004]	0	0	0	0	0	0	1	27403,69	0,06	0,14	0,45
Argentina	(2004,2009]	0	0	0	0	0	0	1	33427,27	0,06	0,19	0,50
Argentina	(2009,2014]	0	0	0	0	0	0	1	37074,58	0,06	0,18	0,45
Argentina	(2014,2019]	0	0	0	0	0	0	1	35497,56	0,06	0,17	0,45
Australia	(1969,1974]	0	1	0	0	0	0	0	39863,93	0,07	0,29	0,60
Australia	(1974,1979]	0	1	0	0	0	0	0	41388,39	0,07	0,29	0,67
Australia	(1979,1984]	0	1	0	0	0	0	0	43351,45	0,07	0,28	0,69
Australia	(1984,1989]	0	1	0	0	0	0	0	47714,87	0,07	0,27	0,66
Australia	(1989,1994]	0	1	0	0	0	0	0	50091,10	0,06	0,23	0,63
Australia	(1994,1999]	0	1	0	0	0	0	0	57529,78	0,06	0,24	0,59
Australia	(1999,2004]	0	1	0	0	0	0	0	64233,49	0,06	0,25	0,65
Australia	(2004,2009]	0	1	0	0	0	0	0	70046,28	0,07	0,27	0,62
Australia	(2009,2014]	0	1	0	0	0	0	0	74429,51	0,06	0,28	0,65
Australia	(2014,2019]	0	1	0	0	0	0	0	79525,62	0,06	0,24	0,57
Austria	(1969,1974]	0	1	0	0	1	0	0	37238,81	0,05	0,51	0,40
Austria	(1974,1979]	0	1	0	0	1	0	0	42827,47	0,06	0,46	0,46
Austria	(1979,1984]	0	1	0	0	1	0	0	45536,54	0,06	0,39	0,51
Austria	(1984,1989]	0	1	0	0	1	0	0	48377,57	0,05	0,40	0,54
Austria	(1989,1994]	0	1	0	0	1	0	0	54698,77	0,05	0,41	0,58
Austria	(1994,1999]	0	1	0	0	1	0	0	60656,86	0,05	0,39	0,59
Austria	(1999,2004]	0	1	0	0	1	0	0	67080,64	0,06	0,35	0,60
Austria	(2004,2009]	0	1	0	0	1	0	0	72909,06	0,05	0,32	0,62
Austria	(2009,2014]	0	1	0	0	1	0	0	75354,40	0,06	0,31	0,63
Austria	(2014,2019]	0	1	0	0	1	0	0	78118,90	0,05	0,33	0,53
Bahrain	(1969,1974]	1	0	0	1	0	0	0	94770,40	0,12	0,30	0,21
Bahrain	(1974,1979]	1	0	0	1	0	0	0	98081,82	0,13	0,36	0,26
Bahrain	(1979,1984]	1	0	0	1	0	0	0	82521,21	0,08	0,42	0,30
Bahrain	(1984,1989]	1	0	0	1	0	0	0	64955,25	0,09	0,32	0,34
Bahrain	(1989,1994]	1	0	0	1	0	0	0	70062,05	0,08	0,35	0,42

Bahrain	(1994,1999]	1	0	0	1	0	0	0	71753,21	0,08	0,28	0,49
Bahrain	(1999,2004]	1	0	0	1	0	0	0	71366,11	0,12	0,31	0,54
Bahrain	(2004,2009]	1	0	0	1	0	0	0	64320,19	0,13	0,49	0,51
Bahrain	(2009,2014]	1	0	0	1	0	0	0	61091,54	0,07	0,42	0,50
Bahrain	(2014,2019]	1	0	0	1	0	0	0	62466,55	0,10	0,46	0,49
Bangladesh	(1969,1974]	0	0	0	1	0	0	0	2500,98	0,07	0,10	0,08
Bangladesh	(1974,1979]	0	0	0	1	0	0	0	2444,89	0,08	0,21	0,12
Bangladesh	(1979,1984]	0	0	0	1	0	0	0	2516,06	0,08	0,25	0,15
Bangladesh	(1984,1989]	0	0	0	1	0	0	0	2599,97	0,08	0,26	0,18
Bangladesh	(1989,1994]	0	0	0	1	0	0	0	2734,81	0,08	0,23	0,19
Bangladesh	(1994,1999]	0	0	0	1	0	0	0	2966,70	0,08	0,29	0,22
Bangladesh	(1999,2004]	0	0	0	1	0	0	0	3348,41	0,07	0,33	0,31
Bangladesh	(2004,2009]	0	0	0	1	0	0	0	4023,69	0,07	0,38	0,38
Bangladesh	(2009,2014]	0	0	0	1	0	0	0	4918,09	0,07	0,42	0,43
Bangladesh	(2014,2019]	0	0	0	1	0	0	0	6219,34	0,07	0,46	0,42
Barbados	(1969,1974]	0	0	0	0	0	1	0	13944,75	0,07	0,52	0,78
Barbados	(1974,1979]	0	0	0	0	0	1	0	14409,85	0,06	0,64	0,63
Barbados	(1979,1984]	0	0	0	0	0	1	0	15430,76	0,06	0,51	0,56
Barbados	(1984,1989]	0	0	0	0	0	1	0	15876,41	0,06	0,45	0,67
Barbados	(1989,1994]	0	0	0	0	0	1	0	14688,00	0,06	0,39	0,75
Barbados	(1994,1999]	0	0	0	0	0	1	0	15771,38	0,05	0,61	0,82
Barbados	(1999,2004]	0	0	0	0	0	1	0	16860,74	0,06	0,59	0,88
Barbados	(2004,2009]	0	0	0	0	0	1	0	18330,57	0,05	0,54	0,88
Barbados	(2009,2014]	0	0	0	0	0	1	0	17054,80	0,05	0,57	0,87
Barbados	(2014,2019]	0	0	0	0	0	1	0	17476,24	0,05	0,41	0,81
Belgium	(1969,1974]	0	1	0	0	1	0	0	33517,82	0,06	0,55	0,40
Belgium	(1974,1979]	0	1	0	0	1	0	0	37645,21	0,06	0,52	0,45
Belgium	(1979,1984]	0	1	0	0	1	0	0	40147,75	0,06	0,37	0,49
Belgium	(1984,1989]	0	1	0	0	1	0	0	43250,79	0,05	0,40	0,52
Belgium	(1989,1994]	0	1	0	0	1	0	0	48738,80	0,05	0,40	0,55
Belgium	(1994,1999]	0	1	0	0	1	0	0	53868,37	0,05	0,38	0,57
Belgium	(1999,2004]	0	1	0	0	1	0	0	60334,23	0,05	0,36	0,60
Belgium	(2004,2009]	0	1	0	0	1	0	0	65036,46	0,06	0,36	0,58
Belgium	(2009,2014]	0	1	0	0	1	0	0	66279,87	0,05	0,36	0,57
Belgium	(2014,2019]	0	1	0	0	1	0	0	70513,25	0,05	0,38	0,60
Benin	(1969,1974]	0	0	1	0	0	0	0	2469,38	0,07	0,51	0,03
Benin	(1974,1979]	0	0	1	0	0	0	0	2463,23	0,07	0,42	0,04
Benin	(1979,1984]	0	0	1	0	0	0	0	2860,92	0,08	0,36	0,06
Benin	(1984,1989]	0	0	1	0	0	0	0	2972,49	0,08	0,20	0,09
Benin	(1989,1994]	0	0	1	0	0	0	0	2994,83	0,09	0,22	0,11
Benin	(1994,1999]	0	0	1	0	0	0	0	3261,61	0,08	0,22	0,13
Benin	(1999,2004]	0	0	1	0	0	0	0	3537,61	0,08	0,21	0,17
Benin	(2004,2009]	0	0	1	0	0	0	0	3644,60	0,08	0,21	0,21
Benin	(2009,2014]	0	0	1	0	0	0	0	4282,84	0,08	0,26	0,25
Benin	(2014,2019]	0	0	1	0	0	0	0	5740,64	0,08	0,26	0,29
Bolivia (Plurinational State of)	(1969,1974]	0	0	0	0	0	0	1	8952,34	0,07	0,19	0,23

Bolivia (Plurinational State of)	(1974,1979]	0	0	0	0	0	0	1	10197,90	0,07	0,19	0,27
Bolivia (Plurinational State of)	(1979,1984]	0	0	0	0	0	0	1	9068,58	0,07	0,12	0,32
Bolivia (Plurinational State of)	(1984,1989]	0	0	0	0	0	0	1	7776,63	0,07	0,15	0,38
Bolivia (Plurinational State of)	(1989,1994]	0	0	0	0	0	0	1	8262,12	0,07	0,18	0,44
Bolivia (Plurinational State of)	(1994,1999]	0	0	0	0	0	0	1	9061,90	0,07	0,22	0,41
Bolivia (Plurinational State of)	(1999,2004]	0	0	0	0	0	0	1	9246,21	0,07	0,17	0,43
Bolivia (Plurinational State of)	(2004,2009]	0	0	0	0	0	0	1	10129,07	0,07	0,19	0,39
Bolivia (Plurinational State of)	(2009,2014]	0	0	0	0	0	0	1	11559,71	0,07	0,24	0,36
Bolivia (Plurinational State of)	(2014,2019]	0	0	0	0	0	0	1	13268,33	0,07	0,25	0,43
Botswana	(1969,1974]	0	0	1	0	0	0	0	4232,75	0,08	0,94	0,05
Botswana	(1974,1979]	0	0	1	0	0	0	0	6410,10	0,09	0,41	0,07
Botswana	(1979,1984]	0	0	1	0	0	0	0	9299,01	0,09	0,38	0,10
Botswana	(1984,1989]	0	0	1	0	0	0	0	12677,55	0,10	0,39	0,33
Botswana	(1989,1994]	0	0	1	0	0	0	0	16696,50	0,09	0,34	0,58
Botswana	(1994,1999]	0	0	1	0	0	0	0	17840,88	0,09	0,34	0,68
Botswana	(1999,2004]	0	0	1	0	0	0	0	18651,55	0,08	0,38	0,75
Botswana	(2004,2009]	0	0	1	0	0	0	0	20858,45	0,07	0,42	0,80
Botswana	(2009,2014]	0	0	1	0	0	0	0	23866,12	0,06	0,49	0,84
Botswana	(2014,2019]	0	0	1	0	0	0	0	26412,85	0,07	0,47	0,77
Brazil	(1969,1974]	0	0	0	0	0	0	1	13415,08	0,08	0,50	0,14
Brazil	(1974,1979]	0	0	0	0	0	0	1	17058,01	0,08	0,49	0,08
Brazil	(1979,1984]	0	0	0	0	0	0	1	17613,13	0,08	0,35	0,10
Brazil	(1984,1989]	0	0	0	0	0	0	1	18502,81	0,07	0,33	0,13
Brazil	(1989,1994]	0	0	0	0	0	0	1	17155,33	0,07	0,33	0,16
Brazil	(1994,1999]	0	0	0	0	0	0	1	17792,79	0,07	0,33	0,23
Brazil	(1999,2004]	0	0	0	0	0	0	1	17783,44	0,07	0,28	0,35
Brazil	(2004,2009]	0	0	0	0	0	0	1	19601,79	0,07	0,31	0,45
Brazil	(2009,2014]	0	0	0	0	0	0	1	22045,52	0,06	0,32	0,49
Brazil	(2014,2019]	0	0	0	0	0	0	1	20690,40	0,06	0,26	0,48
Burundi	(1969,1974]	0	0	1	0	0	0	0	1698,49	0,06	0,07	0,02
Burundi	(1974,1979]	0	0	1	0	0	0	0	1848,28	0,08	0,12	0,02
Burundi	(1979,1984]	0	0	1	0	0	0	0	1929,62	0,07	0,16	0,03

Burundi	(1984,1989]	0	0	1	0	0	0	0	2168,44	0,07	0,10	0,03
Burundi	(1989,1994]	0	0	1	0	0	0	0	2242,45	0,06	0,05	0,04
Burundi	(1994,1999]	0	0	1	0	0	0	0	1778,19	0,06	0,07	0,05
Burundi	(1999,2004]	0	0	1	0	0	0	0	1625,52	0,09	0,11	0,06
Burundi	(2004,2009]	0	0	1	0	0	0	0	1517,32	0,09	0,13	0,07
Burundi	(2009,2014]	0	0	1	0	0	0	0	1574,24	0,08	0,15	0,10
Burundi	(2014,2019]	0	0	1	0	0	0	0	1559,95	0,08	0,15	0,11
Cameroon	(1969,1974]	0	0	1	0	0	0	0	5178,74	0,07	0,17	0,06
Cameroon	(1974,1979]	0	0	1	0	0	0	0	5869,65	0,08	0,24	0,09
Cameroon	(1979,1984]	0	0	1	0	0	0	0	8180,53	0,08	0,23	0,13
Cameroon	(1984,1989]	0	0	1	0	0	0	0	7701,39	0,08	0,19	0,16
Cameroon	(1989,1994]	0	0	1	0	0	0	0	5397,25	0,08	0,17	0,20
Cameroon	(1994,1999]	0	0	1	0	0	0	0	5117,95	0,08	0,19	0,23
Cameroon	(1999,2004]	0	0	1	0	0	0	0	5423,18	0,08	0,23	0,26
Cameroon	(2004,2009]	0	0	1	0	0	0	0	5677,63	0,08	0,22	0,28
Cameroon	(2009,2014]	0	0	1	0	0	0	0	5916,45	0,08	0,26	0,30
Cameroon	(2014,2019]	0	0	1	0	0	0	0	6473,14	0,08	0,26	0,32
Canada	(1969,1974]	0	1	0	0	0	1	0	39940,99	0,08	0,29	0,51
Canada	(1974,1979]	0	1	0	0	0	1	0	43339,64	0,07	0,29	0,54
Canada	(1979,1984]	0	1	0	0	0	1	0	45209,20	0,06	0,27	0,56
Canada	(1984,1989]	0	1	0	0	0	1	0	50378,20	0,06	0,28	0,67
Canada	(1989,1994]	0	1	0	0	0	1	0	51031,74	0,06	0,25	0,67
Canada	(1994,1999]	0	1	0	0	0	1	0	55768,77	0,06	0,26	0,66
Canada	(1999,2004]	0	1	0	0	0	1	0	62770,21	0,06	0,26	0,66
Canada	(2004,2009]	0	1	0	0	0	1	0	66223,47	0,06	0,28	0,54
Canada	(2009,2014]	0	1	0	0	0	1	0	68278,58	0,06	0,29	0,51
Canada	(2014,2019]	0	1	0	0	0	1	0	72944,64	0,06	0,26	0,50
Central African Republic	(1969,1974]	0	0	1	0	0	0	0	3162,82	0,06	0,61	0,03
Central African Republic	(1974,1979]	0	0	1	0	0	0	0	3200,74	0,07	0,37	0,04
Central African Republic	(1979,1984]	0	0	1	0	0	0	0	2781,02	0,08	0,33	0,07
Central African Republic	(1984,1989]	0	0	1	0	0	0	0	2660,66	0,06	0,39	0,09
Central African Republic	(1989,1994]	0	0	1	0	0	0	0	2434,00	0,08	0,40	0,12
Central African Republic	(1994,1999]	0	0	1	0	0	0	0	2301,99	0,08	0,23	0,14
Central African Republic	(1999,2004]	0	0	1	0	0	0	0	2210,62	0,07	0,21	0,16
Central African Republic	(2004,2009]	0	0	1	0	0	0	0	2167,13	0,07	0,23	0,17
Central African												

Republic Central African Republic	(2009,2014]	0	0	1	0	0	0	0	2091,29	0,05	0,20	0,19
Republic Central African Republic	(2014,2019]	0	0	1	0	0	0	0	1751,04	0,07	0,31	0,20
Chile	(1969,1974]	0	1	0	0	0	0	1	12561,23	0,07	0,24	0,30
Chile	(1974,1979]	0	1	0	0	0	0	1	11013,85	0,07	0,23	0,32
Chile	(1979,1984]	0	1	0	0	0	0	1	12021,88	0,07	0,19	0,35
Chile	(1984,1989]	0	1	0	0	0	0	1	12469,68	0,07	0,25	0,40
Chile	(1989,1994]	0	1	0	0	0	0	1	16488,94	0,07	0,30	0,45
Chile	(1994,1999]	0	1	0	0	0	0	1	21606,56	0,07	0,31	0,45
Chile	(1999,2004]	0	1	0	0	0	0	1	23496,37	0,07	0,29	0,46
Chile	(2004,2009]	0	1	0	0	0	0	1	27547,98	0,07	0,35	0,57
Chile	(2009,2014]	0	1	0	0	0	0	1	31266,82	0,06	0,39	0,70
Chile	(2014,2019]	0	1	0	0	0	0	1	33586,94	0,06	0,35	0,66
China, Hong Kong SAR	(1969,1974]	0	0	0	1	0	0	0	14032,55	0,09	0,78	0,34
China, Hong Kong SAR	(1974,1979]	0	0	0	1	0	0	0	17289,78	0,09	0,87	0,39
China, Hong Kong SAR	(1979,1984]	0	0	0	1	0	0	0	22325,52	0,07	0,76	0,46
China, Hong Kong SAR	(1984,1989]	0	0	0	1	0	0	0	29399,12	0,06	0,63	0,54
China, Hong Kong SAR	(1989,1994]	0	0	0	1	0	0	0	36876,24	0,07	0,66	0,56
China, Hong Kong SAR	(1994,1999]	0	0	0	1	0	0	0	39706,71	0,07	0,66	0,55
China, Hong Kong SAR	(1999,2004]	0	0	0	1	0	0	0	42687,87	0,06	0,49	0,56
China, Hong Kong SAR	(2004,2009]	0	0	0	1	0	0	0	52720,01	0,06	0,40	0,57
China, Hong Kong SAR	(2009,2014]	0	0	0	1	0	0	0	59541,66	0,05	0,37	0,65
China, Hong Kong SAR	(2014,2019]	0	0	0	1	0	0	0	67798,45	0,04	0,31	0,45
Colombia	(1969,1974]	0	0	0	0	0	0	1	10710,77	0,08	0,28	0,18
Colombia	(1974,1979]	0	0	0	0	0	0	1	11650,06	0,08	0,26	0,23
Colombia	(1979,1984]	0	0	0	0	0	0	1	12049,41	0,08	0,27	0,26
Colombia	(1984,1989]	0	0	0	0	0	0	1	12527,77	0,07	0,24	0,31
Colombia	(1989,1994]	0	0	0	0	0	0	1	13579,86	0,07	0,24	0,34
Colombia	(1994,1999]	0	0	0	0	0	0	1	14470,69	0,07	0,18	0,38
Colombia	(1999,2004]	0	0	0	0	0	0	1	13976,42	0,07	0,16	0,40
Colombia	(2004,2009]	0	0	0	0	0	0	1	15969,73	0,07	0,22	0,43
Colombia	(2009,2014]	0	0	0	0	0	0	1	18224,88	0,06	0,23	0,47
Colombia	(2014,2019]	0	0	0	0	0	0	1	19819,40	0,07	0,22	0,49
Congo	(1969,1974]	0	0	1	0	0	0	0	6390,31	0,08	0,36	0,10
Congo	(1974,1979]	0	0	1	0	0	0	0	6501,02	0,08	0,38	0,20
Congo	(1979,1984]	0	0	1	0	0	0	0	9717,32	0,08	0,73	0,28

Congo	(1984,1989]	0	0	1	0	0	0	0	9594,45	0,08	0,23	0,36
Congo	(1989,1994]	0	0	1	0	0	0	0	8482,38	0,08	0,33	0,42
Congo	(1994,1999]	0	0	1	0	0	0	0	7510,77	0,08	0,25	0,43
Congo	(1999,2004]	0	0	1	0	0	0	0	7385,12	0,08	0,23	0,43
Congo	(2004,2009]	0	0	1	0	0	0	0	7943,30	0,08	0,46	0,45
Congo	(2009,2014]	0	0	1	0	0	0	0	9240,70	0,07	0,56	0,48
Congo	(2014,2019]	0	0	1	0	0	0	0	7498,78	0,08	0,39	0,47
Costa Rica	(1969,1974]	0	1	0	0	0	1	0	14168,13	0,09	0,24	0,11
Costa Rica	(1974,1979]	0	1	0	0	0	1	0	15489,35	0,09	0,28	0,19
Costa Rica	(1979,1984]	0	1	0	0	0	1	0	14254,15	0,08	0,17	0,22
Costa Rica	(1984,1989]	0	1	0	0	0	1	0	14332,30	0,07	0,21	0,26
Costa Rica	(1989,1994]	0	1	0	0	0	1	0	15949,47	0,08	0,23	0,27
Costa Rica	(1994,1999]	0	1	0	0	0	1	0	17325,04	0,08	0,24	0,29
Costa Rica	(1999,2004]	0	1	0	0	0	1	0	18476,28	0,08	0,22	0,35
Costa Rica	(2004,2009]	0	1	0	0	0	1	0	20887,09	0,07	0,23	0,42
Costa Rica	(2009,2014]	0	1	0	0	0	1	0	23183,29	0,06	0,22	0,34
Costa Rica	(2014,2019]	0	1	0	0	0	1	0	26010,64	0,06	0,21	0,41
Côte d'Ivoire	(1969,1974]	0	0	1	0	0	0	0	7484,00	0,10	0,26	0,06
Côte d'Ivoire	(1974,1979]	0	0	1	0	0	0	0	8397,45	0,09	0,37	0,10
Côte d'Ivoire	(1979,1984]	0	0	1	0	0	0	0	6821,49	0,09	0,25	0,12
Côte d'Ivoire	(1984,1989]	0	0	1	0	0	0	0	5894,22	0,09	0,14	0,14
Côte d'Ivoire	(1989,1994]	0	0	1	0	0	0	0	5325,16	0,09	0,11	0,17
Côte d'Ivoire	(1994,1999]	0	0	1	0	0	0	0	5372,78	0,08	0,14	0,17
Côte d'Ivoire	(1999,2004]	0	0	1	0	0	0	0	4951,96	0,07	0,10	0,17
Côte d'Ivoire	(2004,2009]	0	0	1	0	0	0	0	4684,42	0,07	0,14	0,19
Côte d'Ivoire	(2009,2014]	0	0	1	0	0	0	0	5635,06	0,08	0,23	0,20
Côte d'Ivoire	(2014,2019]	0	0	1	0	0	0	0	8251,93	0,08	0,29	0,18
Cyprus	(1969,1974]	0	0	0	0	1	0	0	13309,55	0,07	0,82	0,30
Cyprus	(1974,1979]	0	0	0	0	1	0	0	11717,67	0,07	1,02	0,35
Cyprus	(1979,1984]	0	0	0	0	1	0	0	15748,22	0,05	0,93	0,41
Cyprus	(1984,1989]	0	0	0	0	1	0	0	20275,30	0,07	0,77	0,45
Cyprus	(1989,1994]	0	0	0	0	1	0	0	24590,65	0,07	0,66	0,49
Cyprus	(1994,1999]	0	0	0	0	1	0	0	27590,24	0,08	0,45	0,51
Cyprus	(1999,2004]	0	0	0	0	1	0	0	30384,52	0,07	0,42	0,54
Cyprus	(2004,2009]	0	0	0	0	1	0	0	33290,20	0,07	0,49	0,53
Cyprus	(2009,2014]	0	0	0	0	1	0	0	31100,55	0,06	0,30	0,56
Cyprus	(2014,2019]	0	0	0	0	1	0	0	32266,02	0,05	0,39	0,53
D.R. of the Congo	(1969,1974]	0	0	1	0	0	0	0	5117,81	0,08	0,09	0,04
D.R. of the Congo	(1974,1979]	0	0	1	0	0	0	0	4378,91	0,08	0,10	0,05
D.R. of the Congo	(1979,1984]	0	0	1	0	0	0	0	3906,03	0,07	0,17	0,10
D.R. of the Congo	(1984,1989]	0	0	1	0	0	0	0	3850,57	0,08	0,15	0,17
D.R. of the Congo	(1989,1994]	0	0	1	0	0	0	0	2580,62	0,09	0,07	0,21
D.R. of the Congo	(1994,1999]	0	0	1	0	0	0	0	1726,09	0,07	0,06	0,21

D.R. of the Congo	(1999,2004]	0	0	1	0	0	0	0	1358,77	0,08	0,08	0,22
D.R. of the Congo	(2004,2009]	0	0	1	0	0	0	0	1513,62	0,08	0,13	0,22
D.R. of the Congo	(2009,2014]	0	0	1	0	0	0	0	1758,14	0,08	0,25	0,23
D.R. of the Congo	(2014,2019]	0	0	1	0	0	0	0	2007,92	0,08	0,23	0,40
Denmark	(1969,1974]	0	1	0	0	1	0	0	40616,51	0,05	0,39	0,42
Denmark	(1974,1979]	0	1	0	0	1	0	0	43826,80	0,05	0,36	0,50
Denmark	(1979,1984]	0	1	0	0	1	0	0	46871,37	0,05	0,28	0,56
Denmark	(1984,1989]	0	1	0	0	1	0	0	52696,05	0,05	0,32	0,57
Denmark	(1989,1994]	0	1	0	0	1	0	0	55229,02	0,05	0,28	0,68
Denmark	(1994,1999]	0	1	0	0	1	0	0	62450,67	0,05	0,30	0,71
Denmark	(1999,2004]	0	1	0	0	1	0	0	68990,97	0,05	0,28	0,71
Denmark	(2004,2009]	0	1	0	0	1	0	0	73724,82	0,05	0,29	0,69
Denmark	(2009,2014]	0	1	0	0	1	0	0	73457,51	0,05	0,27	0,69
Denmark	(2014,2019]	0	1	0	0	1	0	0	80348,23	0,05	0,30	0,60
Dominican Republic	(1969,1974]	0	0	0	0	0	1	0	8580,83	0,09	0,93	0,17
Dominican Republic	(1974,1979]	0	0	0	0	0	1	0	9971,28	0,08	0,99	0,21
Dominican Republic	(1979,1984]	0	0	0	0	0	1	0	10626,34	0,08	0,74	0,25
Dominican Republic	(1984,1989]	0	0	0	0	0	1	0	10606,54	0,08	0,94	0,28
Dominican Republic	(1989,1994]	0	0	0	0	0	1	0	10826,18	0,07	0,18	0,30
Dominican Republic	(1994,1999]	0	0	0	0	0	1	0	13092,63	0,07	0,31	0,31
Dominican Republic	(1999,2004]	0	0	0	0	0	1	0	15077,61	0,07	0,31	0,32
Dominican Republic	(2004,2009]	0	0	0	0	0	1	0	17975,42	0,07	0,36	0,34
Dominican Republic	(2009,2014]	0	0	0	0	0	1	0	20763,05	0,07	0,33	0,50
Dominican Republic	(2014,2019]	0	0	0	0	0	1	0	25735,93	0,06	0,37	0,55
Ecuador	(1969,1974]	0	0	0	0	0	0	1	11618,45	0,08	0,75	0,14
Ecuador	(1974,1979]	0	0	0	0	0	0	1	14646,27	0,08	0,69	0,18
Ecuador	(1979,1984]	0	0	0	0	0	0	1	14793,45	0,08	0,51	0,26
Ecuador	(1984,1989]	0	0	0	0	0	0	1	14261,14	0,08	0,39	0,29
Ecuador	(1989,1994]	0	0	0	0	0	0	1	14256,92	0,08	0,34	0,32
Ecuador	(1994,1999]	0	0	0	0	0	0	1	14189,45	0,07	0,29	0,31
Ecuador	(1999,2004]	0	0	0	0	0	0	1	13887,47	0,07	0,35	0,31
Ecuador	(2004,2009]	0	0	0	0	0	0	1	15655,98	0,07	0,38	0,31
Ecuador	(2009,2014]	0	0	0	0	0	0	1	17505,52	0,07	0,45	0,34
Ecuador	(2014,2019]	0	0	0	0	0	0	1	17626,04	0,07	0,39	0,45
Egypt	(1969,1974]	0	0	1	0	0	0	0	5133,81	0,07	0,06	0,05
Egypt	(1974,1979]	0	0	1	0	0	0	0	6127,59	0,07	0,14	0,08

Egypt	(1979,1984]	0	0	1	0	0	0	0	8402,16	0,08	0,16	0,15
Egypt	(1984,1989]	0	0	1	0	0	0	0	10616,16	0,08	0,15	0,25
Egypt	(1989,1994]	0	0	1	0	0	0	0	12215,29	0,08	0,14	0,32
Egypt	(1994,1999]	0	0	1	0	0	0	0	13437,38	0,08	0,17	0,37
Egypt	(1999,2004]	0	0	1	0	0	0	0	14525,21	0,08	0,16	0,41
Egypt	(2004,2009]	0	0	1	0	0	0	0	16268,58	0,07	0,19	0,45
Egypt	(2009,2014]	0	0	1	0	0	0	0	18059,43	0,07	0,13	0,44
Egypt	(2014,2019]	0	0	1	0	0	0	0	19802,82	0,07	0,14	0,49
El Salvador	(1969,1974]	0	0	0	0	0	1	0	9437,72	0,08	0,30	0,09
El Salvador	(1974,1979]	0	0	0	0	0	1	0	10667,96	0,07	0,35	0,09
El Salvador	(1979,1984]	0	0	0	0	0	1	0	8441,07	0,07	0,24	0,11
El Salvador	(1984,1989]	0	0	0	0	0	1	0	7896,70	0,07	0,27	0,10
El Salvador	(1989,1994]	0	0	0	0	0	1	0	8515,71	0,07	0,32	0,13
El Salvador	(1994,1999]	0	0	0	0	0	1	0	10074,39	0,06	0,31	0,19
El Salvador	(1999,2004]	0	0	0	0	0	1	0	10939,28	0,06	0,31	0,28
El Salvador	(2004,2009]	0	0	0	0	0	1	0	11807,63	0,06	0,28	0,36
El Salvador	(2009,2014]	0	0	0	0	0	1	0	11733,36	0,06	0,27	0,42
El Salvador	(2014,2019]	0	0	0	0	0	1	0	12347,33	0,06	0,29	0,42
Eswatini	(1969,1974]	0	0	1	0	0	0	0	4990,81	0,07	0,48	0,11
Eswatini	(1974,1979]	0	0	1	0	0	0	0	8118,51	0,08	0,60	0,18
Eswatini	(1979,1984]	0	0	1	0	0	0	0	8058,34	0,08	0,79	0,23
Eswatini	(1984,1989]	0	0	1	0	0	0	0	9056,34	0,09	0,75	0,29
Eswatini	(1989,1994]	0	0	1	0	0	0	0	10375,87	0,08	0,68	0,30
Eswatini	(1994,1999]	0	0	1	0	0	0	0	10479,80	0,08	0,45	0,32
Eswatini	(1999,2004]	0	0	1	0	0	0	0	10498,33	0,06	0,28	0,26
Eswatini	(2004,2009]	0	0	1	0	0	0	0	12381,18	0,06	0,22	0,25
Eswatini	(2009,2014]	0	0	1	0	0	0	0	13720,75	0,06	0,17	0,30
Eswatini	(2014,2019]	0	0	1	0	0	0	0	14422,18	0,07	0,19	0,34
Fiji	(1969,1974]	0	0	0	0	0	0	0	11411,10	0,08	0,40	0,17
Fiji	(1974,1979]	0	0	0	0	0	0	0	12419,86	0,07	0,39	0,25
Fiji	(1979,1984]	0	0	0	0	0	0	0	12810,79	0,07	0,35	0,33
Fiji	(1984,1989]	0	0	0	0	0	0	0	12539,09	0,06	0,26	0,40
Fiji	(1989,1994]	0	0	0	0	0	0	0	14459,26	0,07	0,26	0,58
Fiji	(1994,1999]	0	0	0	0	0	0	0	15119,91	0,06	0,25	0,75
Fiji	(1999,2004]	0	0	0	0	0	0	0	15741,06	0,06	0,28	0,64
Fiji	(2004,2009]	0	0	0	0	0	0	0	16011,88	0,06	0,25	0,57
Fiji	(2009,2014]	0	0	0	0	0	0	0	16824,30	0,05	0,28	0,62
Fiji	(2014,2019]	0	0	0	0	0	0	0	20029,53	0,06	0,27	0,79
Finland	(1969,1974]	0	1	0	0	1	0	0	27285,71	0,06	0,44	0,27
Finland	(1974,1979]	0	1	0	0	1	0	0	30581,15	0,05	0,36	0,32
Finland	(1979,1984]	0	1	0	0	1	0	0	35508,49	0,06	0,36	0,39
Finland	(1984,1989]	0	1	0	0	1	0	0	41146,88	0,05	0,38	0,39
Finland	(1989,1994]	0	1	0	0	1	0	0	42107,06	0,05	0,27	0,43
Finland	(1994,1999]	0	1	0	0	1	0	0	47677,41	0,05	0,30	0,40
Finland	(1999,2004]	0	1	0	0	1	0	0	57374,73	0,05	0,29	0,41
Finland	(2004,2009]	0	1	0	0	1	0	0	64543,68	0,05	0,28	0,43
Finland	(2009,2014]	0	1	0	0	1	0	0	64758,44	0,05	0,27	0,45
Finland	(2014,2019]	0	1	0	0	1	0	0	69521,12	0,05	0,29	0,44

France	(1969,1974]	0	1	0	0	1	0	0	34904,39	0,06	0,46	0,17
France	(1974,1979]	0	1	0	0	1	0	0	39607,25	0,06	0,38	0,23
France	(1979,1984]	0	1	0	0	1	0	0	42382,79	0,06	0,32	0,28
France	(1984,1989]	0	1	0	0	1	0	0	45062,72	0,06	0,33	0,37
France	(1989,1994]	0	1	0	0	1	0	0	49939,76	0,05	0,30	0,45
France	(1994,1999]	0	1	0	0	1	0	0	54025,73	0,05	0,29	0,52
France	(1999,2004]	0	1	0	0	1	0	0	59810,73	0,06	0,30	0,58
France	(2004,2009]	0	1	0	0	1	0	0	62688,27	0,05	0,30	0,65
France	(2009,2014]	0	1	0	0	1	0	0	64288,08	0,05	0,28	0,64
France	(2014,2019]	0	1	0	0	1	0	0	68844,06	0,05	0,29	0,44
Gabon	(1969,1974]	1	0	1	0	0	0	0	26419,38	0,06	0,47	0,07
Gabon	(1974,1979]	1	0	1	0	0	0	0	45668,31	0,07	0,44	0,11
Gabon	(1979,1984]	1	0	1	0	0	0	0	38185,66	0,07	0,42	0,14
Gabon	(1984,1989]	1	0	1	0	0	0	0	34486,40	0,08	0,28	0,20
Gabon	(1989,1994]	1	0	1	0	0	0	0	35522,59	0,08	0,21	0,25
Gabon	(1994,1999]	1	0	1	0	0	0	0	36195,38	0,08	0,23	0,30
Gabon	(1999,2004]	1	0	1	0	0	0	0	29906,73	0,08	0,21	0,35
Gabon	(2004,2009]	1	0	1	0	0	0	0	25717,80	0,09	0,25	0,40
Gabon	(2009,2014]	1	0	1	0	0	0	0	24987,64	0,09	0,38	0,48
Gabon	(2014,2019]	1	0	1	0	0	0	0	24978,15	0,07	0,29	0,51
Gambia	(1969,1974]	0	0	1	0	0	0	0	4567,58	0,08	0,07	0,05
Gambia	(1974,1979]	0	0	1	0	0	0	0	4690,84	0,08	0,12	0,06
Gambia	(1979,1984]	0	0	1	0	0	0	0	4802,48	0,08	0,08	0,07
Gambia	(1984,1989]	0	0	1	0	0	0	0	4598,95	0,10	0,14	0,10
Gambia	(1989,1994]	0	0	1	0	0	0	0	4473,18	0,08	0,18	0,12
Gambia	(1994,1999]	0	0	1	0	0	0	0	4418,15	0,08	0,16	0,16
Gambia	(1999,2004]	0	0	1	0	0	0	0	4738,62	0,09	0,25	0,21
Gambia	(2004,2009]	0	0	1	0	0	0	0	4512,49	0,08	0,12	0,27
Gambia	(2009,2014]	0	0	1	0	0	0	0	4336,03	0,08	0,12	0,33
Gambia	(2014,2019]	0	0	1	0	0	0	0	4213,55	0,08	0,20	0,36
Germany	(1969,1974]	0	1	0	0	1	0	0	36463,47	0,05	0,38	0,20
Germany	(1974,1979]	0	1	0	0	1	0	0	40859,86	0,06	0,33	0,19
Germany	(1979,1984]	0	1	0	0	1	0	0	43106,07	0,06	0,29	0,23
Germany	(1984,1989]	0	1	0	0	1	0	0	46361,73	0,05	0,28	0,28
Germany	(1989,1994]	0	1	0	0	1	0	0	53657,09	0,05	0,28	0,39
Germany	(1994,1999]	0	1	0	0	1	0	0	57309,48	0,05	0,27	0,48
Germany	(1999,2004]	0	1	0	0	1	0	0	62150,39	0,05	0,23	0,54
Germany	(2004,2009]	0	1	0	0	1	0	0	66858,80	0,05	0,23	0,71
Germany	(2009,2014]	0	1	0	0	1	0	0	72726,51	0,05	0,23	0,71
Germany	(2014,2019]	0	1	0	0	1	0	0	78152,59	0,05	0,23	0,71
Ghana	(1969,1974]	0	0	1	0	0	0	0	6110,22	0,08	0,36	0,29
Ghana	(1974,1979]	0	0	1	0	0	0	0	5272,14	0,07	0,34	0,35
Ghana	(1979,1984]	0	0	1	0	0	0	0	4470,16	0,09	0,24	0,39
Ghana	(1984,1989]	0	0	1	0	0	0	0	4361,29	0,08	0,28	0,44
Ghana	(1989,1994]	0	0	1	0	0	0	0	4642,67	0,08	0,30	0,46
Ghana	(1994,1999]	0	0	1	0	0	0	0	4915,36	0,08	0,32	0,46
Ghana	(1999,2004]	0	0	1	0	0	0	0	5317,95	0,08	0,35	0,48
Ghana	(2004,2009]	0	0	1	0	0	0	0	5937,68	0,08	0,40	0,56

Ghana	(2009,2014]	0	0	1	0	0	0	0	7558,22	0,08	0,26	0,60
Ghana	(2014,2019]	0	0	1	0	0	0	0	8592,70	0,08	0,22	0,62
Greece	(1969,1974]	0	1	0	0	1	0	0	27321,07	0,06	0,57	0,32
Greece	(1974,1979]	0	1	0	0	1	0	0	32200,01	0,06	0,51	0,30
Greece	(1979,1984]	0	1	0	0	1	0	0	32802,37	0,06	0,38	0,28
Greece	(1984,1989]	0	1	0	0	1	0	0	32629,85	0,06	0,36	0,35
Greece	(1989,1994]	0	1	0	0	1	0	0	33020,67	0,06	0,34	0,42
Greece	(1994,1999]	0	1	0	0	1	0	0	35277,71	0,06	0,38	0,47
Greece	(1999,2004]	0	1	0	0	1	0	0	42329,57	0,05	0,39	0,53
Greece	(2004,2009]	0	1	0	0	1	0	0	49630,60	0,05	0,37	0,49
Greece	(2009,2014]	0	1	0	0	1	0	0	41286,44	0,04	0,21	0,49
Greece	(2014,2019]	0	1	0	0	1	0	0	40629,65	0,05	0,21	0,56
Guatemala	(1969,1974]	0	0	0	0	0	1	0	9744,73	0,07	0,32	0,06
Guatemala	(1974,1979]	0	0	0	0	0	1	0	11527,52	0,07	0,39	0,07
Guatemala	(1979,1984]	0	0	0	0	0	1	0	11635,50	0,08	0,25	0,10
Guatemala	(1984,1989]	0	0	0	0	0	1	0	10287,36	0,08	0,23	0,11
Guatemala	(1989,1994]	0	0	0	0	0	1	0	10648,81	0,08	0,26	0,14
Guatemala	(1994,1999]	0	0	0	0	0	1	0	11394,25	0,08	0,31	0,15
Guatemala	(1999,2004]	0	0	0	0	0	1	0	11828,02	0,08	0,28	0,18
Guatemala	(2004,2009]	0	0	0	0	0	1	0	12379,70	0,08	0,26	0,17
Guatemala	(2009,2014]	0	0	0	0	0	1	0	12565,01	0,08	0,22	0,28
Guatemala	(2014,2019]	0	0	0	0	0	1	0	13148,46	0,07	0,20	0,29
Haiti	(1969,1974]	0	0	0	0	0	1	0	4030,17	0,07	0,11	0,05
Haiti	(1974,1979]	0	0	0	0	0	1	0	4480,81	0,07	0,16	0,08
Haiti	(1979,1984]	0	0	0	0	0	1	0	4665,21	0,07	0,17	0,11
Haiti	(1984,1989]	0	0	0	0	0	1	0	4232,69	0,07	0,17	0,15
Haiti	(1989,1994]	0	0	0	0	0	1	0	3627,05	0,07	0,16	0,19
Haiti	(1994,1999]	0	0	0	0	0	1	0	3214,22	0,08	0,27	0,22
Haiti	(1999,2004]	0	0	0	0	0	1	0	2969,45	0,07	0,34	0,26
Haiti	(2004,2009]	0	0	0	0	0	1	0	2745,57	0,07	0,35	0,29
Haiti	(2009,2014]	0	0	0	0	0	1	0	2656,69	0,07	0,39	0,29
Haiti	(2014,2019]	0	0	0	0	0	1	0	2679,10	0,07	0,39	0,29
Honduras	(1969,1974]	0	0	0	0	0	1	0	6782,17	0,08	0,40	0,06
Honduras	(1974,1979]	0	0	0	0	0	1	0	7668,74	0,08	0,48	0,08
Honduras	(1979,1984]	0	0	0	0	0	1	0	7774,74	0,08	0,35	0,13
Honduras	(1984,1989]	0	0	0	0	0	1	0	7552,71	0,08	0,32	0,18
Honduras	(1989,1994]	0	0	0	0	0	1	0	7574,99	0,08	0,44	0,20
Honduras	(1994,1999]	0	0	0	0	0	1	0	7507,41	0,08	0,49	0,23
Honduras	(1999,2004]	0	0	0	0	0	1	0	7441,03	0,08	0,44	0,26
Honduras	(2004,2009]	0	0	0	0	0	1	0	8139,43	0,08	0,46	0,30
Honduras	(2009,2014]	0	0	0	0	0	1	0	8088,93	0,08	0,39	0,37
Honduras	(2014,2019]	0	0	0	0	0	1	0	8429,13	0,07	0,36	0,38
Iceland	(1969,1974]	0	1	0	0	1	0	0	30194,43	0,07	0,68	0,27
Iceland	(1974,1979]	0	1	0	0	1	0	0	36014,12	0,07	0,57	0,30
Iceland	(1979,1984]	0	1	0	0	1	0	0	41418,29	0,06	0,47	0,34
Iceland	(1984,1989]	0	1	0	0	1	0	0	45804,44	0,06	0,42	0,37
Iceland	(1989,1994]	0	1	0	0	1	0	0	45149,56	0,06	0,36	0,40
Iceland	(1994,1999]	0	1	0	0	1	0	0	49100,89	0,06	0,42	0,41

Iceland	(1999,2004]	0	1	0	0	1	0	0	56510,80	0,06	0,41	0,44
Iceland	(2004,2009]	0	1	0	0	1	0	0	65340,90	0,07	0,38	0,38
Iceland	(2009,2014]	0	1	0	0	1	0	0	63264,35	0,05	0,21	0,36
Iceland	(2014,2019]	0	1	0	0	1	0	0	72972,75	0,07	0,28	0,31
India	(1969,1974]	0	0	0	1	0	0	0	2158,64	0,08	0,32	0,06
India	(1974,1979]	0	0	0	1	0	0	0	2284,89	0,08	0,34	0,12
India	(1979,1984]	0	0	0	1	0	0	0	2436,46	0,07	0,32	0,20
India	(1984,1989]	0	0	0	1	0	0	0	2796,18	0,07	0,34	0,23
India	(1989,1994]	0	0	0	1	0	0	0	3192,16	0,07	0,32	0,27
India	(1994,1999]	0	0	0	1	0	0	0	3828,32	0,07	0,34	0,29
India	(1999,2004]	0	0	0	1	0	0	0	4503,64	0,07	0,39	0,34
India	(2004,2009]	0	0	0	1	0	0	0	5704,89	0,07	0,47	0,39
India	(2009,2014]	0	0	0	1	0	0	0	7129,17	0,07	0,49	0,44
India	(2014,2019]	0	0	0	1	0	0	0	9226,86	0,06	0,45	0,46
Indonesia	(1969,1974]	0	0	0	0	0	0	0	3575,64	0,08	0,33	0,08
Indonesia	(1974,1979]	0	0	0	0	0	0	0	4466,96	0,08	0,42	0,10
Indonesia	(1979,1984]	0	0	0	0	0	0	0	5503,13	0,08	0,46	0,13
Indonesia	(1984,1989]	0	0	0	0	0	0	0	6225,38	0,08	0,50	0,19
Indonesia	(1989,1994]	0	0	0	0	0	0	0	7938,81	0,07	0,58	0,26
Indonesia	(1994,1999]	0	0	0	0	0	0	0	9137,16	0,07	0,51	0,22
Indonesia	(1999,2004]	0	0	0	0	0	0	0	9029,98	0,07	0,47	0,20
Indonesia	(2004,2009]	0	0	0	0	0	0	0	10812,99	0,07	0,53	0,32
Indonesia	(2009,2014]	0	0	0	0	0	0	0	13236,48	0,07	0,57	0,45
Indonesia	(2014,2019]	0	0	0	0	0	0	0	15813,53	0,06	0,57	0,51
Iran (Islamic Republic of)	(1969,1974]	1	0	0	1	0	0	0	28307,67	0,08	0,39	0,12
Iran (Islamic Republic of)	(1974,1979]	1	0	0	1	0	0	0	29675,32	0,08	0,51	0,17
Iran (Islamic Republic of)	(1979,1984]	1	0	0	1	0	0	0	18498,55	0,08	0,55	0,22
Iran (Islamic Republic of)	(1984,1989]	1	0	0	1	0	0	0	15625,86	0,08	0,40	0,27
Iran (Islamic Republic of)	(1989,1994]	1	0	0	1	0	0	0	16527,81	0,08	0,39	0,31
Iran (Islamic Republic of)	(1994,1999]	1	0	0	1	0	0	0	15856,74	0,09	0,38	0,37
Iran (Islamic Republic of)	(1999,2004]	1	0	0	1	0	0	0	16196,23	0,08	0,48	0,45
Iran (Islamic Republic of)	(2004,2009]	1	0	0	1	0	0	0	17804,38	0,07	0,49	0,52
Iran (Islamic Republic of)	(2009,2014]	1	0	0	1	0	0	0	18080,41	0,06	0,43	0,51
Iran (Islamic Republic of)	(2014,2019]	1	0	0	1	0	0	0	18714,19	0,06	0,32	0,42
Iraq	(1969,1974]	1	0	0	1	0	0	0	13128,84	0,08	0,20	0,07
Iraq	(1974,1979]	1	0	0	1	0	0	0	20496,99	0,08	0,29	0,10
Iraq	(1979,1984]	1	0	0	1	0	0	0	19934,84	0,08	0,36	0,15
Iraq	(1984,1989]	1	0	0	1	0	0	0	18477,41	0,07	0,23	0,21
Iraq	(1989,1994]	1	0	0	1	0	0	0	9907,29	0,09	0,14	0,24
Iraq	(1994,1999]	1	0	0	1	0	0	0	12792,16	0,09	0,05	0,25

Iraq	(1999,2004]	1	0	0	1	0	0	0	15326,46	0,08	0,15	0,29
Iraq	(2004,2009]	1	0	0	1	0	0	0	16047,19	0,07	0,23	0,30
Iraq	(2009,2014]	1	0	0	1	0	0	0	18885,70	0,10	0,33	0,33
Iraq	(2014,2019]	1	0	0	1	0	0	0	19940,40	0,08	0,22	0,40
Ireland	(1969,1974]	0	1	0	0	1	0	0	28009,09	0,07	0,45	0,39
Ireland	(1974,1979]	0	1	0	0	1	0	0	32985,78	0,06	0,45	0,46
Ireland	(1979,1984]	0	1	0	0	1	0	0	36829,90	0,06	0,40	0,53
Ireland	(1984,1989]	0	1	0	0	1	0	0	40837,10	0,05	0,31	0,56
Ireland	(1989,1994]	0	1	0	0	1	0	0	48831,90	0,07	0,28	0,57
Ireland	(1994,1999]	0	1	0	0	1	0	0	63223,60	0,07	0,36	0,55
Ireland	(1999,2004]	0	1	0	0	1	0	0	82693,84	0,07	0,36	0,55
Ireland	(2004,2009]	0	1	0	0	1	0	0	90716,72	0,07	0,34	0,55
Ireland	(2009,2014]	0	1	0	0	1	0	0	89083,20	0,05	0,31	0,45
Ireland	(2014,2019]	0	1	0	0	1	0	0	133088,42	0,06	0,53	0,51
Israel	(1969,1974]	0	1	0	1	0	0	0	26506,63	0,08	0,49	0,41
Israel	(1974,1979]	0	1	0	1	0	0	0	29658,72	0,07	0,33	0,44
Israel	(1979,1984]	0	1	0	1	0	0	0	31991,23	0,07	0,28	0,49
Israel	(1984,1989]	0	1	0	1	0	0	0	34596,16	0,07	0,24	0,46
Israel	(1989,1994]	0	1	0	1	0	0	0	37877,92	0,09	0,38	0,43
Israel	(1994,1999]	0	1	0	1	0	0	0	43491,70	0,08	0,35	0,39
Israel	(1999,2004]	0	1	0	1	0	0	0	45875,92	0,07	0,26	0,38
Israel	(2004,2009]	0	1	0	1	0	0	0	49888,38	0,07	0,25	0,41
Israel	(2009,2014]	0	1	0	1	0	0	0	55467,45	0,06	0,27	0,55
Israel	(2014,2019]	0	1	0	1	0	0	0	61036,21	0,07	0,28	0,54
Italy	(1969,1974]	0	1	0	0	1	0	0	33875,94	0,05	0,53	0,28
Italy	(1974,1979]	0	1	0	0	1	0	0	39338,70	0,06	0,46	0,35
Italy	(1979,1984]	0	1	0	0	1	0	0	43459,26	0,06	0,40	0,45
Italy	(1984,1989]	0	1	0	0	1	0	0	47671,13	0,05	0,40	0,51
Italy	(1989,1994]	0	1	0	0	1	0	0	52540,55	0,05	0,36	0,58
Italy	(1994,1999]	0	1	0	0	1	0	0	57122,69	0,05	0,36	0,64
Italy	(1999,2004]	0	1	0	0	1	0	0	63297,09	0,05	0,37	0,71
Italy	(2004,2009]	0	1	0	0	1	0	0	65004,79	0,05	0,36	0,74
Italy	(2009,2014]	0	1	0	0	1	0	0	61694,13	0,05	0,30	0,77
Italy	(2014,2019]	0	1	0	0	1	0	0	62687,05	0,04	0,30	0,78
Jamaica	(1969,1974]	0	0	0	0	0	1	0	18060,13	0,07	0,41	0,13
Jamaica	(1974,1979]	0	0	0	0	0	1	0	15020,00	0,08	0,22	0,20
Jamaica	(1979,1984]	0	0	0	0	0	1	0	12425,62	0,08	0,21	0,31
Jamaica	(1984,1989]	0	0	0	0	0	1	0	11818,02	0,06	0,24	0,39
Jamaica	(1989,1994]	0	0	0	0	0	1	0	13972,83	0,06	0,29	0,46
Jamaica	(1994,1999]	0	0	0	0	0	1	0	13932,60	0,06	0,27	0,54
Jamaica	(1999,2004]	0	0	0	0	0	1	0	13563,12	0,06	0,30	0,61
Jamaica	(2004,2009]	0	0	0	0	0	1	0	13575,96	0,06	0,27	0,66
Jamaica	(2009,2014]	0	0	0	0	0	1	0	12306,55	0,06	0,25	0,68
Jamaica	(2014,2019]	0	0	0	0	0	1	0	12236,18	0,06	0,25	0,67
Japan	(1969,1974]	0	1	0	1	0	0	0	24491,07	0,06	0,51	0,44
Japan	(1974,1979]	0	1	0	1	0	0	0	28445,72	0,06	0,45	0,47
Japan	(1979,1984]	0	1	0	1	0	0	0	33317,38	0,06	0,39	0,49
Japan	(1984,1989]	0	1	0	1	0	0	0	39646,07	0,06	0,41	0,51

Japan	(1989,1994]	0	1	0	1	0	0	0	45983,99	0,05	0,37	0,53
Japan	(1994,1999]	0	1	0	1	0	0	0	49033,81	0,05	0,33	0,55
Japan	(1999,2004]	0	1	0	1	0	0	0	51748,31	0,05	0,27	0,55
Japan	(2004,2009]	0	1	0	1	0	0	0	55741,94	0,04	0,24	0,54
Japan	(2009,2014]	0	1	0	1	0	0	0	59323,70	0,04	0,23	0,54
Japan	(2014,2019]	0	1	0	1	0	0	0	65798,76	0,04	0,23	0,48
Jordan	(1969,1974]	0	0	0	1	0	0	0	14179,85	0,08	0,18	0,21
Jordan	(1974,1979]	0	0	0	1	0	0	0	15848,46	0,07	0,34	0,22
Jordan	(1979,1984]	0	0	0	1	0	0	0	23442,49	0,10	0,27	0,28
Jordan	(1984,1989]	0	0	0	1	0	0	0	20402,66	0,10	0,21	0,34
Jordan	(1989,1994]	0	0	0	1	0	0	0	15960,88	0,12	0,28	0,44
Jordan	(1994,1999]	0	0	0	1	0	0	0	15631,05	0,08	0,22	0,50
Jordan	(1999,2004]	0	0	0	1	0	0	0	17131,08	0,08	0,21	0,57
Jordan	(2004,2009]	0	0	0	1	0	0	0	20318,73	0,10	0,27	0,62
Jordan	(2009,2014]	0	0	0	1	0	0	0	19168,04	0,10	0,25	0,69
Jordan	(2014,2019]	0	0	0	1	0	0	0	17335,15	0,08	0,26	0,71
Kenya	(1969,1974]	0	0	1	0	0	0	0	5818,13	0,09	0,30	0,05
Kenya	(1974,1979]	0	0	1	0	0	0	0	6076,51	0,09	0,27	0,08
Kenya	(1979,1984]	0	0	1	0	0	0	0	6364,96	0,09	0,18	0,12
Kenya	(1984,1989]	0	0	1	0	0	0	0	6438,29	0,09	0,16	0,14
Kenya	(1989,1994]	0	0	1	0	0	0	0	6186,68	0,09	0,14	0,17
Kenya	(1994,1999]	0	0	1	0	0	0	0	5726,43	0,09	0,17	0,20
Kenya	(1999,2004]	0	0	1	0	0	0	0	5408,95	0,08	0,19	0,23
Kenya	(2004,2009]	0	0	1	0	0	0	0	5763,04	0,08	0,23	0,27
Kenya	(2009,2014]	0	0	1	0	0	0	0	6364,24	0,08	0,28	0,24
Kenya	(2014,2019]	0	0	1	0	0	0	0	7087,38	0,08	0,25	0,26
Lesotho	(1969,1974]	0	0	1	0	0	0	0	1693,67	0,07	0,21	0,04
Lesotho	(1974,1979]	0	0	1	0	0	0	0	2267,21	0,08	0,42	0,07
Lesotho	(1979,1984]	0	0	1	0	0	0	0	2123,07	0,08	0,49	0,10
Lesotho	(1984,1989]	0	0	1	0	0	0	0	2232,89	0,07	0,48	0,14
Lesotho	(1989,1994]	0	0	1	0	0	0	0	2581,04	0,08	0,64	0,18
Lesotho	(1994,1999]	0	0	1	0	0	0	0	2786,20	0,07	0,52	0,23
Lesotho	(1999,2004]	0	0	1	0	0	0	0	3004,99	0,06	0,31	0,29
Lesotho	(2004,2009]	0	0	1	0	0	0	0	3555,24	0,06	0,27	0,37
Lesotho	(2009,2014]	0	0	1	0	0	0	0	4471,61	0,06	0,34	0,23
Lesotho	(2014,2019]	0	0	1	0	0	0	0	4863,06	0,06	0,32	0,29
Liberia	(1969,1974]	0	0	1	0	0	0	0	4985,67	0,07	0,21	0,06
Liberia	(1974,1979]	0	0	1	0	0	0	0	4903,70	0,08	0,28	0,11
Liberia	(1979,1984]	0	0	1	0	0	0	0	4171,47	0,08	0,21	0,14
Liberia	(1984,1989]	0	0	1	0	0	0	0	3765,53	0,04	0,11	0,17
Liberia	(1989,1994]	0	0	1	0	0	0	0	1230,96	0,05	0,11	0,17
Liberia	(1994,1999]	0	0	1	0	0	0	0	1008,65	0,12	0,62	0,17
Liberia	(1999,2004]	0	0	1	0	0	0	0	1596,84	0,07	0,27	0,18
Liberia	(2004,2009]	0	0	1	0	0	0	0	1722,91	0,09	0,28	0,20
Liberia	(2009,2014]	0	0	1	0	0	0	0	2304,18	0,08	0,49	0,21
Liberia	(2014,2019]	0	0	1	0	0	0	0	2471,01	0,08	0,38	0,24
Luxembourg	(1969,1974]	0	1	0	0	1	0	0	48152,48	0,06	0,60	0,32
Luxembourg	(1974,1979]	0	1	0	0	1	0	0	49789,02	0,06	0,47	0,37

Luxembourg	(1979,1984]	0	1	0	0	1	0	0	52421,47	0,06	0,37	0,41
Luxembourg	(1984,1989]	0	1	0	0	1	0	0	65207,59	0,06	0,40	0,44
Luxembourg	(1989,1994]	0	1	0	0	1	0	0	85119,92	0,06	0,35	0,46
Luxembourg	(1994,1999]	0	1	0	0	1	0	0	96970,30	0,06	0,35	0,48
Luxembourg	(1999,2004]	0	1	0	0	1	0	0	118632,75	0,06	0,31	0,52
Luxembourg	(2004,2009]	0	1	0	0	1	0	0	128612,58	0,07	0,30	0,51
Luxembourg	(2009,2014]	0	1	0	0	1	0	0	124507,24	0,08	0,35	0,48
Luxembourg	(2014,2019]	0	1	0	0	1	0	0	129190,64	0,07	0,32	0,55
Malawi	(1969,1974]	0	0	1	0	0	0	0	1549,59	0,07	0,24	0,02
Malawi	(1974,1979]	0	0	1	0	0	0	0	1836,32	0,08	0,32	0,03
Malawi	(1979,1984]	0	0	1	0	0	0	0	1845,21	0,08	0,15	0,04
Malawi	(1984,1989]	0	0	1	0	0	0	0	1672,59	0,11	0,11	0,05
Malawi	(1989,1994]	0	0	1	0	0	0	0	1576,73	0,06	0,11	0,06
Malawi	(1994,1999]	0	0	1	0	0	0	0	1706,30	0,07	0,08	0,07
Malawi	(1999,2004]	0	0	1	0	0	0	0	1634,35	0,08	0,09	0,09
Malawi	(2004,2009]	0	0	1	0	0	0	0	1832,25	0,08	0,18	0,15
Malawi	(2009,2014]	0	0	1	0	0	0	0	2096,54	0,08	0,10	0,18
Malawi	(2014,2019]	0	0	1	0	0	0	0	2162,72	0,09	0,10	0,22
Malaysia	(1969,1974]	0	0	0	1	0	0	0	8497,93	0,08	0,48	0,20
Malaysia	(1974,1979]	0	0	0	1	0	0	0	10637,69	0,08	0,50	0,26
Malaysia	(1979,1984]	0	0	0	1	0	0	0	13017,72	0,08	0,60	0,34
Malaysia	(1984,1989]	0	0	0	1	0	0	0	13859,46	0,08	0,45	0,40
Malaysia	(1989,1994]	0	0	0	1	0	0	0	17806,47	0,08	0,72	0,47
Malaysia	(1994,1999]	0	0	0	1	0	0	0	22127,10	0,08	0,59	0,53
Malaysia	(1999,2004]	0	0	0	1	0	0	0	23371,44	0,08	0,41	0,59
Malaysia	(2004,2009]	0	0	0	1	0	0	0	26418,13	0,07	0,39	0,59
Malaysia	(2009,2014]	0	0	0	1	0	0	0	29526,10	0,07	0,45	0,59
Malaysia	(2014,2019]	0	0	0	1	0	0	0	34809,65	0,06	0,43	0,59
Mali	(1969,1974]	0	0	1	0	0	0	0	501,43	0,06	0,21	0,01
Mali	(1974,1979]	0	0	1	0	0	0	0	617,89	0,06	0,23	0,01
Mali	(1979,1984]	0	0	1	0	0	0	0	653,99	0,06	0,23	0,02
Mali	(1984,1989]	0	0	1	0	0	0	0	761,86	0,06	0,26	0,02
Mali	(1989,1994]	0	0	1	0	0	0	0	891,19	0,08	0,28	0,03
Mali	(1994,1999]	0	0	1	0	0	0	0	1544,61	0,08	0,27	0,03
Mali	(1999,2004]	0	0	1	0	0	0	0	2089,52	0,08	0,22	0,05
Mali	(2004,2009]	0	0	1	0	0	0	0	2615,51	0,08	0,26	0,08
Mali	(2009,2014]	0	0	1	0	0	0	0	3592,13	0,08	0,22	0,14
Mali	(2014,2019]	0	0	1	0	0	0	0	4485,28	0,08	0,21	0,17
Malta	(1969,1974]	0	0	0	0	1	0	0	7624,28	0,06	0,39	0,26
Malta	(1974,1979]	0	0	0	0	1	0	0	12913,61	0,06	0,36	0,33
Malta	(1979,1984]	0	0	0	0	1	0	0	16609,77	0,06	0,37	0,41
Malta	(1984,1989]	0	0	0	0	1	0	0	18261,11	0,06	0,39	0,48
Malta	(1989,1994]	0	0	0	0	1	0	0	23074,16	0,06	0,40	0,54
Malta	(1994,1999]	0	0	0	0	1	0	0	28090,76	0,06	0,41	0,61
Malta	(1999,2004]	0	0	0	0	1	0	0	32354,23	0,06	0,37	0,63
Malta	(2004,2009]	0	0	0	0	1	0	0	34671,74	0,06	0,39	0,67
Malta	(2009,2014]	0	0	0	0	1	0	0	38159,47	0,06	0,36	0,68
Malta	(2014,2019]	0	0	0	0	1	0	0	49719,74	0,08	0,37	0,69

Mauritania	(1969,1974]	0	0	1	0	0	0	0	9857,40	0,08	0,49	0,02
Mauritania	(1974,1979]	0	0	1	0	0	0	0	10332,18	0,08	0,42	0,02
Mauritania	(1979,1984]	0	0	1	0	0	0	0	9210,02	0,08	0,39	0,04
Mauritania	(1984,1989]	0	0	1	0	0	0	0	8593,21	0,08	0,27	0,06
Mauritania	(1989,1994]	0	0	1	0	0	0	0	8509,56	0,08	0,25	0,08
Mauritania	(1994,1999]	0	0	1	0	0	0	0	8616,49	0,08	0,20	0,09
Mauritania	(1999,2004]	0	0	1	0	0	0	0	7754,71	0,08	0,35	0,11
Mauritania	(2004,2009]	0	0	1	0	0	0	0	8752,47	0,08	0,37	0,14
Mauritania	(2009,2014]	0	0	1	0	0	0	0	8498,94	0,08	0,36	0,16
Mauritania	(2014,2019]	0	0	1	0	0	0	0	8749,48	0,08	0,29	0,16
Mauritius	(1969,1974]	0	0	1	0	0	0	0	6895,17	0,08	0,30	0,22
Mauritius	(1974,1979]	0	0	1	0	0	0	0	8884,75	0,08	0,34	0,26
Mauritius	(1979,1984]	0	0	1	0	0	0	0	8689,37	0,07	0,22	0,28
Mauritius	(1984,1989]	0	0	1	0	0	0	0	10807,58	0,06	0,30	0,33
Mauritius	(1989,1994]	0	0	1	0	0	0	0	13482,39	0,06	0,32	0,42
Mauritius	(1994,1999]	0	0	1	0	0	0	0	16029,79	0,06	0,31	0,44
Mauritius	(1999,2004]	0	0	1	0	0	0	0	19091,94	0,06	0,29	0,47
Mauritius	(2004,2009]	0	0	1	0	0	0	0	22305,82	0,06	0,32	0,53
Mauritius	(2009,2014]	0	0	1	0	0	0	0	26507,43	0,05	0,27	0,62
Mauritius	(2014,2019]	0	0	1	0	0	0	0	31518,70	0,05	0,23	0,65
Mexico	(1969,1974]	0	1	0	0	0	1	0	21724,96	0,08	0,40	0,11
Mexico	(1974,1979]	0	1	0	0	0	1	0	25030,11	0,08	0,40	0,15
Mexico	(1979,1984]	0	1	0	0	0	1	0	28077,89	0,08	0,33	0,21
Mexico	(1984,1989]	0	1	0	0	0	1	0	24870,06	0,08	0,26	0,29
Mexico	(1989,1994]	0	1	0	0	0	1	0	25613,51	0,08	0,29	0,37
Mexico	(1994,1999]	0	1	0	0	0	1	0	26049,64	0,07	0,28	0,41
Mexico	(1999,2004]	0	1	0	0	0	1	0	27200,27	0,07	0,25	0,44
Mexico	(2004,2009]	0	1	0	0	0	1	0	27311,02	0,07	0,27	0,50
Mexico	(2009,2014]	0	1	0	0	0	1	0	27170,41	0,07	0,27	0,51
Mexico	(2014,2019]	0	1	0	0	0	1	0	28520,82	0,06	0,25	0,57
Morocco	(1969,1974]	0	0	1	0	0	0	0	4996,74	0,08	0,36	0,07
Morocco	(1974,1979]	0	0	1	0	0	0	0	5762,15	0,08	0,59	0,08
Morocco	(1979,1984]	0	0	1	0	0	0	0	5836,50	0,08	0,44	0,10
Morocco	(1984,1989]	0	0	1	0	0	0	0	6312,11	0,07	0,40	0,11
Morocco	(1989,1994]	0	0	1	0	0	0	0	6623,75	0,07	0,39	0,13
Morocco	(1994,1999]	0	0	1	0	0	0	0	6593,68	0,07	0,43	0,15
Morocco	(1999,2004]	0	0	1	0	0	0	0	7167,19	0,07	0,47	0,18
Morocco	(2004,2009]	0	0	1	0	0	0	0	8397,56	0,07	0,54	0,20
Morocco	(2009,2014]	0	0	1	0	0	0	0	9956,07	0,07	0,51	0,23
Morocco	(2014,2019]	0	0	1	0	0	0	0	11471,82	0,06	0,47	0,23
Mozambique	(1969,1974]	0	0	1	0	0	0	0	972,42	0,07	0,23	0,01
Mozambique	(1974,1979]	0	0	1	0	0	0	0	1029,57	0,08	0,23	0,01
Mozambique	(1979,1984]	0	0	1	0	0	0	0	935,17	0,07	0,17	0,02
Mozambique	(1984,1989]	0	0	1	0	0	0	0	831,24	0,04	0,18	0,02
Mozambique	(1989,1994]	0	0	1	0	0	0	0	902,78	0,10	0,15	0,02
Mozambique	(1994,1999]	0	0	1	0	0	0	0	1041,40	0,08	0,18	0,02
Mozambique	(1999,2004]	0	0	1	0	0	0	0	1368,31	0,08	0,17	0,03
Mozambique	(2004,2009]	0	0	1	0	0	0	0	1754,08	0,08	0,19	0,04

Mozambique	(2009,2014]	0	0	1	0	0	0	0	2154,23	0,08	0,39	0,08
Mozambique	(2014,2019]	0	0	1	0	0	0	0	2417,16	0,08	0,38	0,16
Myanmar	(1969,1974]	0	0	0	1	0	0	0	1010,06	0,07	0,05	0,12
Myanmar	(1974,1979]	0	0	0	1	0	0	0	1091,97	0,08	0,08	0,14
Myanmar	(1979,1984]	0	0	0	1	0	0	0	1275,66	0,08	0,08	0,16
Myanmar	(1984,1989]	0	0	0	1	0	0	0	1149,35	0,07	0,06	0,19
Myanmar	(1989,1994]	0	0	0	1	0	0	0	1126,25	0,07	0,09	0,10
Myanmar	(1994,1999]	0	0	0	1	0	0	0	1420,09	0,07	0,14	0,11
Myanmar	(1999,2004]	0	0	0	1	0	0	0	2227,42	0,06	0,16	0,11
Myanmar	(2004,2009]	0	0	0	1	0	0	0	3792,92	0,06	0,29	0,13
Myanmar	(2009,2014]	0	0	0	1	0	0	0	5424,67	0,06	0,48	0,15
Myanmar	(2014,2019]	0	0	0	1	0	0	0	7035,61	0,06	0,47	0,19
Nepal	(1969,1974]	0	0	0	1	0	0	0	2071,35	0,07	0,12	0,04
Nepal	(1974,1979]	0	0	0	1	0	0	0	2162,19	0,07	0,19	0,05
Nepal	(1979,1984]	0	0	0	1	0	0	0	2234,43	0,07	0,23	0,07
Nepal	(1984,1989]	0	0	0	1	0	0	0	2539,71	0,07	0,22	0,13
Nepal	(1989,1994]	0	0	0	1	0	0	0	2867,18	0,08	0,25	0,20
Nepal	(1994,1999]	0	0	0	1	0	0	0	3186,73	0,07	0,26	0,20
Nepal	(1999,2004]	0	0	0	1	0	0	0	3547,16	0,07	0,25	0,22
Nepal	(2004,2009]	0	0	0	1	0	0	0	3884,16	0,07	0,25	0,27
Nepal	(2009,2014]	0	0	0	1	0	0	0	4558,63	0,06	0,26	0,31
Nepal	(2014,2019]	0	0	0	1	0	0	0	5233,71	0,08	0,36	0,37
Netherlands	(1969,1974]	0	1	0	0	1	0	0	40708,32	0,06	0,44	0,60
Netherlands	(1974,1979]	0	1	0	0	1	0	0	44038,54	0,06	0,36	0,63
Netherlands	(1979,1984]	0	1	0	0	1	0	0	44477,06	0,06	0,30	0,66
Netherlands	(1984,1989]	0	1	0	0	1	0	0	47355,29	0,06	0,33	0,66
Netherlands	(1989,1994]	0	1	0	0	1	0	0	53126,59	0,06	0,30	0,65
Netherlands	(1994,1999]	0	1	0	0	1	0	0	60844,53	0,05	0,31	0,64
Netherlands	(1999,2004]	0	1	0	0	1	0	0	69257,72	0,05	0,28	0,66
Netherlands	(2004,2009]	0	1	0	0	1	0	0	75178,68	0,05	0,28	0,63
Netherlands	(2009,2014]	0	1	0	0	1	0	0	76736,55	0,05	0,26	0,64
Netherlands	(2014,2019]	0	1	0	0	1	0	0	82800,58	0,05	0,28	0,62
New Zealand	(1969,1974]	0	1	0	0	0	0	0	36472,98	0,07	0,22	0,62
New Zealand	(1974,1979]	0	1	0	0	0	0	0	36382,04	0,06	0,16	0,65
New Zealand	(1979,1984]	0	1	0	0	0	0	0	37610,60	0,06	0,19	0,50
New Zealand	(1984,1989]	0	1	0	0	0	0	0	38964,29	0,06	0,20	0,39
New Zealand	(1989,1994]	0	1	0	0	0	0	0	37700,58	0,07	0,18	0,31
New Zealand	(1994,1999]	0	1	0	0	0	0	0	42310,96	0,06	0,20	0,30
New Zealand	(1999,2004]	0	1	0	0	0	0	0	47448,52	0,07	0,21	0,31
New Zealand	(2004,2009]	0	1	0	0	0	0	0	51306,52	0,06	0,20	0,31
New Zealand	(2009,2014]	0	1	0	0	0	0	0	53830,14	0,06	0,20	0,34
New Zealand	(2014,2019]	0	1	0	0	0	0	0	59480,65	0,07	0,21	0,38
Nicaragua	(1969,1974]	0	0	0	0	0	1	0	12980,51	0,09	0,24	0,08
Nicaragua	(1974,1979]	0	0	0	0	0	1	0	12987,35	0,08	0,19	0,09
Nicaragua	(1979,1984]	0	0	0	0	0	1	0	9477,44	0,08	0,26	0,11
Nicaragua	(1984,1989]	0	0	0	0	0	1	0	7672,16	0,08	0,23	0,14
Nicaragua	(1989,1994]	0	0	0	0	0	1	0	6046,01	0,08	0,21	0,17
Nicaragua	(1994,1999]	0	0	0	0	0	1	0	6240,37	0,08	0,28	0,24

Nicaragua	(1999,2004]	0	0	0	0	0	1	0	6589,10	0,07	0,25	0,27
Nicaragua	(2004,2009]	0	0	0	0	0	1	0	6991,74	0,07	0,24	0,33
Nicaragua	(2009,2014]	0	0	0	0	0	1	0	7545,34	0,07	0,28	0,37
Nicaragua	(2014,2019]	0	0	0	0	0	1	0	8355,06	0,07	0,24	0,42
Niger	(1969,1974]	0	0	1	0	0	0	0	3272,12	0,08	0,35	0,01
Niger	(1974,1979]	0	0	1	0	0	0	0	2902,57	0,08	0,48	0,01
Niger	(1979,1984]	0	0	1	0	0	0	0	2796,69	0,08	0,32	0,02
Niger	(1984,1989]	0	0	1	0	0	0	0	2196,50	0,08	0,24	0,03
Niger	(1989,1994]	0	0	1	0	0	0	0	1928,61	0,09	0,20	0,03
Niger	(1994,1999]	0	0	1	0	0	0	0	1886,93	0,08	0,20	0,04
Niger	(1999,2004]	0	0	1	0	0	0	0	1881,90	0,08	0,24	0,04
Niger	(2004,2009]	0	0	1	0	0	0	0	1983,84	0,08	0,37	0,05
Niger	(2009,2014]	0	0	1	0	0	0	0	2181,73	0,09	0,44	0,07
Niger	(2014,2019]	0	0	1	0	0	0	0	2402,36	0,09	0,40	0,09
Norway	(1969,1974]	0	1	0	0	1	0	0	42986,96	0,06	0,52	0,26
Norway	(1974,1979]	0	1	0	0	1	0	0	52524,30	0,06	0,48	0,30
Norway	(1979,1984]	0	1	0	0	1	0	0	60296,33	0,06	0,38	0,35
Norway	(1984,1989]	0	1	0	0	1	0	0	69282,10	0,06	0,29	0,46
Norway	(1989,1994]	0	1	0	0	1	0	0	75240,14	0,05	0,23	0,55
Norway	(1994,1999]	0	1	0	0	1	0	0	89660,06	0,06	0,25	0,57
Norway	(1999,2004]	0	1	0	0	1	0	0	98254,72	0,06	0,22	0,60
Norway	(2004,2009]	0	1	0	0	1	0	0	103892,30	0,06	0,26	0,69
Norway	(2009,2014]	0	1	0	0	1	0	0	101915,58	0,06	0,27	0,65
Norway	(2014,2019]	0	1	0	0	1	0	0	106341,96	0,06	0,27	0,62
Pakistan	(1969,1974]	0	0	0	1	0	0	0	3634,43	0,08	0,30	0,10
Pakistan	(1974,1979]	0	0	0	1	0	0	0	3933,70	0,08	0,35	0,12
Pakistan	(1979,1984]	0	0	0	1	0	0	0	4588,92	0,08	0,29	0,15
Pakistan	(1984,1989]	0	0	0	1	0	0	0	5323,20	0,08	0,28	0,17
Pakistan	(1989,1994]	0	0	0	1	0	0	0	6002,02	0,08	0,26	0,20
Pakistan	(1994,1999]	0	0	0	1	0	0	0	6259,79	0,08	0,23	0,21
Pakistan	(1999,2004]	0	0	0	1	0	0	0	6310,64	0,08	0,20	0,22
Pakistan	(2004,2009]	0	0	0	1	0	0	0	7057,07	0,08	0,20	0,32
Pakistan	(2009,2014]	0	0	0	1	0	0	0	7083,13	0,08	0,16	0,33
Pakistan	(2014,2019]	0	0	0	1	0	0	0	7862,71	0,07	0,18	0,36
Panama	(1969,1974]	0	0	0	0	0	1	0	16117,64	0,08	0,41	0,22
Panama	(1974,1979]	0	0	0	0	0	1	0	16272,92	0,08	0,30	0,27
Panama	(1979,1984]	0	0	0	0	0	1	0	19330,22	0,08	0,25	0,34
Panama	(1984,1989]	0	0	0	0	0	1	0	18460,15	0,08	0,14	0,37
Panama	(1989,1994]	0	0	0	0	0	1	0	19420,18	0,08	0,24	0,41
Panama	(1994,1999]	0	0	0	0	0	1	0	21192,02	0,07	0,29	0,42
Panama	(1999,2004]	0	0	0	0	0	1	0	22562,70	0,07	0,22	0,43
Panama	(2004,2009]	0	0	0	0	0	1	0	28511,07	0,07	0,32	0,42
Panama	(2009,2014]	0	0	0	0	0	1	0	37223,39	0,07	0,47	0,42
Panama	(2014,2019]	0	0	0	0	0	1	0	45020,64	0,07	0,48	0,45
Paraguay	(1969,1974]	0	0	0	0	0	0	1	8772,67	0,08	0,26	0,15
Paraguay	(1974,1979]	0	0	0	0	0	0	1	11191,70	0,08	0,42	0,18
Paraguay	(1979,1984]	0	0	0	0	0	0	1	13769,56	0,08	0,38	0,23
Paraguay	(1984,1989]	0	0	0	0	0	0	1	13325,44	0,08	0,34	0,25

Paraguay	(1989,1994]	0	0	0	0	0	0	1	13939,93	0,08	0,33	0,27
Paraguay	(1994,1999]	0	0	0	0	0	0	1	13873,12	0,08	0,25	0,22
Paraguay	(1999,2004]	0	0	0	0	0	0	1	13275,89	0,08	0,20	0,21
Paraguay	(2004,2009]	0	0	0	0	0	0	1	14785,29	0,07	0,22	0,50
Paraguay	(2009,2014]	0	0	0	0	0	0	1	17040,35	0,07	0,23	0,41
Paraguay	(2014,2019]	0	0	0	0	0	0	1	19034,64	0,06	0,22	0,41
Peru	(1969,1974]	0	0	0	0	0	0	1	12725,48	0,08	0,28	0,21
Peru	(1974,1979]	0	0	0	0	0	0	1	13143,19	0,08	0,26	0,26
Peru	(1979,1984]	0	0	0	0	0	0	1	12277,04	0,08	0,27	0,32
Peru	(1984,1989]	0	0	0	0	0	0	1	11258,92	0,08	0,21	0,34
Peru	(1989,1994]	0	0	0	0	0	0	1	8887,73	0,08	0,25	0,33
Peru	(1994,1999]	0	0	0	0	0	0	1	10160,90	0,07	0,28	0,37
Peru	(1999,2004]	0	0	0	0	0	0	1	10407,83	0,07	0,22	0,39
Peru	(2004,2009]	0	0	0	0	0	0	1	13007,93	0,06	0,31	0,41
Peru	(2009,2014]	0	0	0	0	0	0	1	16527,43	0,06	0,37	0,51
Peru	(2014,2019]	0	0	0	0	0	0	1	18245,94	0,07	0,31	0,57
Philippines	(1969,1974]	0	0	0	1	0	0	0	7041,78	0,08	0,23	0,19
Philippines	(1974,1979]	0	0	0	1	0	0	0	8030,11	0,08	0,32	0,24
Philippines	(1979,1984]	0	0	0	1	0	0	0	8381,85	0,08	0,30	0,27
Philippines	(1984,1989]	0	0	0	1	0	0	0	7066,15	0,08	0,23	0,31
Philippines	(1989,1994]	0	0	0	1	0	0	0	7132,62	0,08	0,27	0,35
Philippines	(1994,1999]	0	0	0	1	0	0	0	7384,67	0,08	0,29	0,36
Philippines	(1999,2004]	0	0	0	1	0	0	0	7728,07	0,07	0,25	0,36
Philippines	(2004,2009]	0	0	0	1	0	0	0	8746,95	0,08	0,24	0,43
Philippines	(2009,2014]	0	0	0	1	0	0	0	9994,13	0,07	0,26	0,48
Philippines	(2014,2019]	0	0	0	1	0	0	0	12337,21	0,07	0,35	0,48
Portugal	(1969,1974]	0	1	0	0	1	0	0	21385,82	0,06	0,69	0,08
Portugal	(1974,1979]	0	1	0	0	1	0	0	23328,89	0,07	0,57	0,14
Portugal	(1979,1984]	0	1	0	0	1	0	0	25642,91	0,06	0,48	0,19
Portugal	(1984,1989]	0	1	0	0	1	0	0	28360,96	0,05	0,48	0,22
Portugal	(1989,1994]	0	1	0	0	1	0	0	33805,97	0,06	0,47	0,25
Portugal	(1994,1999]	0	1	0	0	1	0	0	37406,05	0,06	0,54	0,29
Portugal	(1999,2004]	0	1	0	0	1	0	0	41717,59	0,05	0,48	0,35
Portugal	(2004,2009]	0	1	0	0	1	0	0	43564,20	0,05	0,42	0,37
Portugal	(2009,2014]	0	1	0	0	1	0	0	42909,84	0,04	0,30	0,42
Portugal	(2014,2019]	0	1	0	0	1	0	0	46826,74	0,05	0,33	0,44
Republic of Korea	(1969,1974]	0	0	0	1	0	0	0	5585,28	0,08	0,36	0,32
Republic of Korea	(1974,1979]	0	0	0	1	0	0	0	8000,77	0,08	0,54	0,42
Republic of Korea	(1979,1984]	0	0	0	1	0	0	0	9964,45	0,07	0,50	0,52
Republic of Korea	(1984,1989]	0	0	0	1	0	0	0	14610,81	0,07	0,58	0,57
Republic of Korea	(1989,1994]	0	0	0	1	0	0	0	20717,36	0,06	0,68	0,62
Republic of Korea	(1994,1999]	0	0	0	1	0	0	0	27310,29	0,06	0,57	0,61
Republic of	(1999,2004]	0	0	0	1	0	0	0	34670,88	0,06	0,49	0,56

Korea Republic of	(2004,2009]	0	0	0	1	0	0	0	42311,31	0,06	0,45	0,57
Korea Republic of	(2009,2014]	0	0	0	1	0	0	0	48960,84	0,06	0,40	0,47
Korea Republic of	(2014,2019]	0	0	0	1	0	0	0	55690,18	0,05	0,43	0,47
Rwanda	(1969,1974]	0	0	1	0	0	0	0	1449,83	0,08	0,08	0,02
Rwanda	(1974,1979]	0	0	1	0	0	0	0	1571,03	0,08	0,10	0,03
Rwanda	(1979,1984]	0	0	1	0	0	0	0	1890,08	0,08	0,13	0,03
Rwanda	(1984,1989]	0	0	1	0	0	0	0	1754,58	0,09	0,14	0,04
Rwanda	(1989,1994]	0	0	1	0	0	0	0	1497,14	0,03	0,10	0,05
Rwanda	(1994,1999]	0	0	1	0	0	0	0	1457,24	0,10	0,12	0,06
Rwanda	(1999,2004]	0	0	1	0	0	0	0	1915,26	0,08	0,12	0,08
Rwanda	(2004,2009]	0	0	1	0	0	0	0	2456,56	0,08	0,19	0,10
Rwanda	(2009,2014]	0	0	1	0	0	0	0	3082,10	0,08	0,23	0,13
Rwanda	(2014,2019]	0	0	1	0	0	0	0	3721,61	0,08	0,23	0,17
Saudi Arabia	(1969,1974]	1	0	0	1	0	0	0	136095,58	0,10	0,13	0,12
Saudi Arabia	(1974,1979]	1	0	0	1	0	0	0	161422,53	0,11	0,26	0,15
Saudi Arabia	(1979,1984]	1	0	0	1	0	0	0	119121,22	0,12	0,24	0,18
Saudi Arabia	(1984,1989]	1	0	0	1	0	0	0	70037,17	0,09	0,22	0,23
Saudi Arabia	(1989,1994]	1	0	0	1	0	0	0	82932,41	0,08	0,19	0,27
Saudi Arabia	(1994,1999]	1	0	0	1	0	0	0	76553,46	0,08	0,18	0,31
Saudi Arabia	(1999,2004]	1	0	0	1	0	0	0	69377,48	0,09	0,24	0,37
Saudi Arabia	(2004,2009]	1	0	0	1	0	0	0	69796,54	0,09	0,39	0,46
Saudi Arabia	(2009,2014]	1	0	0	1	0	0	0	69735,16	0,09	0,47	0,52
Saudi Arabia	(2014,2019]	1	0	0	1	0	0	0	68657,75	0,07	0,39	0,48
Senegal	(1969,1974]	0	0	1	0	0	0	0	4586,59	0,08	0,17	0,04
Senegal	(1974,1979]	0	0	1	0	0	0	0	4678,11	0,07	0,15	0,06
Senegal	(1979,1984]	0	0	1	0	0	0	0	4591,31	0,08	0,15	0,06
Senegal	(1984,1989]	0	0	1	0	0	0	0	4624,69	0,08	0,17	0,07
Senegal	(1989,1994]	0	0	1	0	0	0	0	4305,44	0,08	0,17	0,08
Senegal	(1994,1999]	0	0	1	0	0	0	0	4370,01	0,08	0,20	0,08
Senegal	(1999,2004]	0	0	1	0	0	0	0	4660,44	0,08	0,21	0,07
Senegal	(2004,2009]	0	0	1	0	0	0	0	5032,83	0,08	0,24	0,07
Senegal	(2009,2014]	0	0	1	0	0	0	0	5167,74	0,08	0,26	0,11
Senegal	(2014,2019]	0	0	1	0	0	0	0	5807,41	0,08	0,33	0,18
Sierra Leone	(1969,1974]	0	0	1	0	0	0	0	3677,84	0,07	0,08	0,04
Sierra Leone	(1974,1979]	0	0	1	0	0	0	0	3654,48	0,07	0,08	0,05
Sierra Leone	(1979,1984]	0	0	1	0	0	0	0	3829,25	0,07	0,08	0,07
Sierra Leone	(1984,1989]	0	0	1	0	0	0	0	3852,01	0,07	0,06	0,09
Sierra Leone	(1989,1994]	0	0	1	0	0	0	0	3526,37	0,05	0,05	0,10
Sierra Leone	(1994,1999]	0	0	1	0	0	0	0	2171,98	0,06	0,04	0,11
Sierra Leone	(1999,2004]	0	0	1	0	0	0	0	2168,74	0,09	0,07	0,14
Sierra Leone	(2004,2009]	0	0	1	0	0	0	0	2594,48	0,08	0,10	0,18
Sierra Leone	(2009,2014]	0	0	1	0	0	0	0	3296,48	0,08	0,17	0,27
Sierra Leone	(2014,2019]	0	0	1	0	0	0	0	3104,84	0,08	0,10	0,25
Singapore	(1969,1974]	0	0	0	1	0	0	0	19752,52	0,09	0,64	0,36

Singapore	(1974,1979]	0	0	0	1	0	0	0	24180,17	0,08	0,58	0,31
Singapore	(1979,1984]	0	0	0	1	0	0	0	31189,46	0,08	0,73	0,30
Singapore	(1984,1989]	0	0	0	1	0	0	0	37631,62	0,08	0,51	0,34
Singapore	(1989,1994]	0	0	0	1	0	0	0	49210,21	0,08	0,54	0,39
Singapore	(1994,1999]	0	0	0	1	0	0	0	59935,43	0,08	0,60	0,48
Singapore	(1999,2004]	0	0	0	1	0	0	0	67097,70	0,06	0,42	0,59
Singapore	(2004,2009]	0	0	0	1	0	0	0	80208,39	0,09	0,42	0,47
Singapore	(2009,2014]	0	0	0	1	0	0	0	92456,91	0,07	0,43	0,47
Singapore	(2014,2019]	0	0	0	1	0	0	0	106689,83	0,05	0,40	0,45
South Africa	(1969,1974]	0	0	1	0	0	0	0	19810,75	0,08	0,38	0,28
South Africa	(1974,1979]	0	0	1	0	0	0	0	19969,39	0,08	0,35	0,28
South Africa	(1979,1984]	0	0	1	0	0	0	0	20462,87	0,08	0,33	0,29
South Africa	(1984,1989]	0	0	1	0	0	0	0	19031,80	0,08	0,23	0,30
South Africa	(1989,1994]	0	0	1	0	0	0	0	17149,99	0,08	0,21	0,38
South Africa	(1994,1999]	0	0	1	0	0	0	0	16399,15	0,08	0,23	0,48
South Africa	(1999,2004]	0	0	1	0	0	0	0	16738,28	0,07	0,23	0,56
South Africa	(2004,2009]	0	0	1	0	0	0	0	18701,96	0,07	0,29	0,65
South Africa	(2009,2014]	0	0	1	0	0	0	0	19432,12	0,07	0,29	0,74
South Africa	(2014,2019]	0	0	1	0	0	0	0	19355,01	0,06	0,28	0,76
Spain	(1969,1974]	0	1	0	0	1	0	0	29223,59	0,06	0,47	0,12
Spain	(1974,1979]	0	1	0	0	1	0	0	33055,25	0,06	0,38	0,20
Spain	(1979,1984]	0	1	0	0	1	0	0	33303,67	0,06	0,32	0,30
Spain	(1984,1989]	0	1	0	0	1	0	0	36549,24	0,06	0,38	0,35
Spain	(1989,1994]	0	1	0	0	1	0	0	41083,53	0,06	0,36	0,42
Spain	(1994,1999]	0	1	0	0	1	0	0	44492,32	0,06	0,37	0,46
Spain	(1999,2004]	0	1	0	0	1	0	0	51813,76	0,07	0,40	0,50
Spain	(2004,2009]	0	1	0	0	1	0	0	55394,82	0,06	0,38	0,53
Spain	(2009,2014]	0	1	0	0	1	0	0	53024,67	0,04	0,29	0,53
Spain	(2014,2019]	0	1	0	0	1	0	0	58601,58	0,05	0,30	0,52
Sri Lanka	(1969,1974]	0	0	0	1	0	0	0	4083,14	0,08	0,27	0,46
Sri Lanka	(1974,1979]	0	0	0	1	0	0	0	4377,45	0,07	0,35	0,45
Sri Lanka	(1979,1984]	0	0	0	1	0	0	0	5235,12	0,07	0,37	0,43
Sri Lanka	(1984,1989]	0	0	0	1	0	0	0	5852,29	0,07	0,28	0,49
Sri Lanka	(1989,1994]	0	0	0	1	0	0	0	6592,67	0,07	0,26	0,55
Sri Lanka	(1994,1999]	0	0	0	1	0	0	0	7909,10	0,06	0,26	0,61
Sri Lanka	(1999,2004]	0	0	0	1	0	0	0	9067,70	0,06	0,26	0,66
Sri Lanka	(2004,2009]	0	0	0	1	0	0	0	11534,84	0,06	0,32	0,65
Sri Lanka	(2009,2014]	0	0	0	1	0	0	0	15588,12	0,05	0,36	0,67
Sri Lanka	(2014,2019]	0	0	0	1	0	0	0	19091,53	0,06	0,34	0,80
Sudan	(1969,1974]	0	0	1	0	0	0	0	3864,26	0,08	0,17	0,02
Sudan	(1974,1979]	0	0	1	0	0	0	0	4833,12	0,09	0,18	0,03
Sudan	(1979,1984]	0	0	1	0	0	0	0	4246,73	0,09	0,13	0,04
Sudan	(1984,1989]	0	0	1	0	0	0	0	4014,66	0,09	0,13	0,07
Sudan	(1989,1994]	0	0	1	0	0	0	0	4079,77	0,09	0,17	0,10
Sudan	(1994,1999]	0	0	1	0	0	0	0	4528,24	0,08	0,16	0,11
Sudan	(1999,2004]	0	0	1	0	0	0	0	5337,36	0,08	0,19	0,12
Sudan	(2004,2009]	0	0	1	0	0	0	0	6395,72	0,07	0,21	0,11
Sudan	(2009,2014]	0	0	1	0	0	0	0	7136,75	0,08	0,15	0,10

Sudan	(2014,2019]	0	0	1	0	0	0	0	7630,29	0,08	0,11	0,15
Sweden	(1969,1974]	0	1	0	0	1	0	0	37950,32	0,05	0,50	0,44
Sweden	(1974,1979]	0	1	0	0	1	0	0	41680,07	0,05	0,42	0,49
Sweden	(1979,1984]	0	1	0	0	1	0	0	44559,97	0,05	0,38	0,55
Sweden	(1984,1989]	0	1	0	0	1	0	0	50002,58	0,05	0,42	0,58
Sweden	(1989,1994]	0	1	0	0	1	0	0	51175,14	0,05	0,30	0,60
Sweden	(1994,1999]	0	1	0	0	1	0	0	55916,26	0,05	0,28	0,64
Sweden	(1999,2004]	0	1	0	0	1	0	0	64156,70	0,06	0,27	0,65
Sweden	(2004,2009]	0	1	0	0	1	0	0	70867,95	0,06	0,27	0,69
Sweden	(2009,2014]	0	1	0	0	1	0	0	74291,23	0,05	0,27	0,68
Sweden	(2014,2019]	0	1	0	0	1	0	0	81672,71	0,06	0,28	0,60
Switzerland	(1969,1974]	0	1	0	0	1	0	0	75250,82	0,05	0,40	0,42
Switzerland	(1974,1979]	0	1	0	0	1	0	0	73114,47	0,05	0,34	0,52
Switzerland	(1979,1984]	0	1	0	0	1	0	0	76665,39	0,06	0,34	0,62
Switzerland	(1984,1989]	0	1	0	0	1	0	0	81569,88	0,06	0,37	0,56
Switzerland	(1989,1994]	0	1	0	0	1	0	0	85803,47	0,06	0,33	0,52
Switzerland	(1994,1999]	0	1	0	0	1	0	0	87770,68	0,05	0,34	0,49
Switzerland	(1999,2004]	0	1	0	0	1	0	0	94115,45	0,06	0,32	0,47
Switzerland	(2004,2009]	0	1	0	0	1	0	0	100834,39	0,06	0,32	0,48
Switzerland	(2009,2014]	0	1	0	0	1	0	0	104815,03	0,06	0,31	0,64
Switzerland	(2014,2019]	0	1	0	0	1	0	0	111029,69	0,05	0,31	0,48
Syrian Arab Republic	(1969,1974]	0	0	0	1	0	0	0	12318,90	0,08	0,16	0,10
Syrian Arab Republic	(1974,1979]	0	0	0	1	0	0	0	17508,52	0,08	0,21	0,13
Syrian Arab Republic	(1979,1984]	0	0	0	1	0	0	0	19751,88	0,09	0,21	0,17
Syrian Arab Republic	(1984,1989]	0	0	0	1	0	0	0	17220,86	0,09	0,13	0,22
Syrian Arab Republic	(1989,1994]	0	0	0	1	0	0	0	16288,95	0,09	0,15	0,22
Syrian Arab Republic	(1994,1999]	0	0	0	1	0	0	0	18827,82	0,09	0,12	0,20
Syrian Arab Republic	(1999,2004]	0	0	0	1	0	0	0	18538,02	0,08	0,14	0,18
Syrian Arab Republic	(2004,2009]	0	0	0	1	0	0	0	20062,37	0,09	0,15	0,28
Syrian Arab Republic	(2009,2014]	0	0	0	1	0	0	0	16610,12	0,03	0,12	0,38
Syrian Arab Republic	(2014,2019]	0	0	0	1	0	0	0	10686,21	0,05	0,18	0,39
Thailand	(1969,1974]	0	0	0	1	0	0	0	5013,36	0,08	0,84	0,07
Thailand	(1974,1979]	0	0	0	1	0	0	0	5986,71	0,08	0,87	0,10
Thailand	(1979,1984]	0	0	0	1	0	0	0	6920,55	0,08	0,80	0,13
Thailand	(1984,1989]	0	0	0	1	0	0	0	8176,60	0,08	0,84	0,14
Thailand	(1989,1994]	0	0	0	1	0	0	0	11788,32	0,07	1,00	0,14
Thailand	(1994,1999]	0	0	0	1	0	0	0	13816,83	0,07	0,60	0,23
Thailand	(1999,2004]	0	0	0	1	0	0	0	14648,11	0,06	0,43	0,24
Thailand	(2004,2009]	0	0	0	1	0	0	0	17635,28	0,06	0,42	0,32
Thailand	(2009,2014]	0	0	0	1	0	0	0	20283,97	0,05	0,40	0,39

Thailand	(2014,2019]	0	0	0	1	0	0	0	23421,37	0,05	0,37	0,37
Togo	(1969,1974]	0	0	1	0	0	0	0	3602,02	0,07	0,30	0,02
Togo	(1974,1979]	0	0	1	0	0	0	0	3629,90	0,07	0,56	0,10
Togo	(1979,1984]	0	0	1	0	0	0	0	3162,33	0,09	0,27	0,18
Togo	(1984,1989]	0	0	1	0	0	0	0	2870,52	0,08	0,29	0,21
Togo	(1989,1994]	0	0	1	0	0	0	0	2712,64	0,08	0,15	0,23
Togo	(1994,1999]	0	0	1	0	0	0	0	2621,24	0,09	0,17	0,24
Togo	(1999,2004]	0	0	1	0	0	0	0	2383,57	0,08	0,20	0,27
Togo	(2004,2009]	0	0	1	0	0	0	0	2164,78	0,08	0,23	0,31
Togo	(2009,2014]	0	0	1	0	0	0	0	2689,25	0,08	0,28	0,39
Togo	(2014,2019]	0	0	1	0	0	0	0	3667,93	0,08	0,22	0,44
Trinidad and Tobago	(1969,1974]	0	0	0	0	0	1	0	20570,10	0,08	0,14	0,25
Trinidad and Tobago	(1974,1979]	0	0	0	0	0	1	0	22812,63	0,07	0,21	0,29
Trinidad and Tobago	(1979,1984]	0	0	0	0	0	1	0	26032,46	0,06	0,17	0,36
Trinidad and Tobago	(1984,1989]	0	0	0	0	0	1	0	20057,00	0,06	0,10	0,41
Trinidad and Tobago	(1989,1994]	0	0	0	0	0	1	0	18344,45	0,06	0,08	0,49
Trinidad and Tobago	(1994,1999]	0	0	0	0	0	1	0	20934,91	0,07	0,10	0,55
Trinidad and Tobago	(1999,2004]	0	0	0	0	0	1	0	27965,54	0,06	0,10	0,60
Trinidad and Tobago	(2004,2009]	0	0	0	0	0	1	0	38531,82	0,05	0,08	0,62
Trinidad and Tobago	(2009,2014]	0	0	0	0	0	1	0	40574,44	0,05	0,15	0,63
Trinidad and Tobago	(2014,2019]	0	0	0	0	0	1	0	38626,22	0,05	0,17	0,66
Tunisia	(1969,1974]	0	0	1	0	0	0	0	7095,10	0,08	0,34	0,10
Tunisia	(1974,1979]	0	0	1	0	0	0	0	8525,54	0,08	0,40	0,13
Tunisia	(1979,1984]	0	0	1	0	0	0	0	9369,08	0,09	0,40	0,16
Tunisia	(1984,1989]	0	0	1	0	0	0	0	9350,53	0,08	0,25	0,20
Tunisia	(1989,1994]	0	0	1	0	0	0	0	9976,87	0,08	0,25	0,24
Tunisia	(1994,1999]	0	0	1	0	0	0	0	10843,92	0,07	0,24	0,29
Tunisia	(1999,2004]	0	0	1	0	0	0	0	12204,76	0,07	0,23	0,33
Tunisia	(2004,2009]	0	0	1	0	0	0	0	13995,34	0,07	0,22	0,37
Tunisia	(2009,2014]	0	0	1	0	0	0	0	15149,92	0,06	0,18	0,40
Tunisia	(2014,2019]	0	0	1	0	0	0	0	16122,15	0,06	0,17	0,43
Turkey	(1969,1974]	0	1	0	0	1	0	0	14612,89	0,08	0,31	0,09
Turkey	(1974,1979]	0	1	0	0	1	0	0	16989,78	0,08	0,28	0,12
Turkey	(1979,1984]	0	1	0	0	1	0	0	16482,61	0,08	0,24	0,15
Turkey	(1984,1989]	0	1	0	0	1	0	0	18683,86	0,08	0,31	0,09
Turkey	(1989,1994]	0	1	0	0	1	0	0	20448,44	0,07	0,35	0,15
Turkey	(1994,1999]	0	1	0	0	1	0	0	22341,40	0,07	0,36	0,21
Turkey	(1999,2004]	0	1	0	0	1	0	0	23114,14	0,07	0,36	0,28
Turkey	(2004,2009]	0	1	0	0	1	0	0	28122,73	0,07	0,44	0,37
Turkey	(2009,2014]	0	1	0	0	1	0	0	32716,24	0,07	0,49	0,42

Turkey	(2014,2019]	0	1	0	0	1	0	0	39064,41	0,07	0,47	0,45
U.R. of Tanzania: Mainland	(1969,1974]	0	0	1	0	0	0	0	2236,50	0,08	0,30	0,01
U.R. of Tanzania: Mainland	(1974,1979]	0	0	1	0	0	0	0	2323,26	0,08	0,28	0,02
U.R. of Tanzania: Mainland	(1979,1984]	0	0	1	0	0	0	0	2143,83	0,08	0,14	0,03
U.R. of Tanzania: Mainland	(1984,1989]	0	0	1	0	0	0	0	2073,87	0,08	0,16	0,03
U.R. of Tanzania: Mainland	(1989,1994]	0	0	1	0	0	0	0	2164,98	0,08	0,20	0,04
U.R. of Tanzania: Mainland	(1994,1999]	0	0	1	0	0	0	0	2230,55	0,08	0,16	0,04
U.R. of Tanzania: Mainland	(1999,2004]	0	0	1	0	0	0	0	2530,19	0,08	0,19	0,05
U.R. of Tanzania: Mainland	(2004,2009]	0	0	1	0	0	0	0	3052,48	0,08	0,25	0,08
U.R. of Tanzania: Mainland	(2009,2014]	0	0	1	0	0	0	0	3591,50	0,08	0,31	0,13
U.R. of Tanzania: Mainland	(2014,2019]	0	0	1	0	0	0	0	4216,68	0,08	0,39	0,18
Uganda	(1969,1974]	0	0	1	0	0	0	0	2301,30	0,08	0,12	0,04
Uganda	(1974,1979]	0	0	1	0	0	0	0	1935,10	0,08	0,12	0,05
Uganda	(1979,1984]	0	0	1	0	0	0	0	1548,89	0,08	0,12	0,07
Uganda	(1984,1989]	0	0	1	0	0	0	0	1501,78	0,08	0,17	0,10
Uganda	(1989,1994]	0	0	1	0	0	0	0	1744,43	0,08	0,16	0,13
Uganda	(1994,1999]	0	0	1	0	0	0	0	2197,38	0,08	0,17	0,10
Uganda	(1999,2004]	0	0	1	0	0	0	0	2627,39	0,08	0,18	0,08
Uganda	(2004,2009]	0	0	1	0	0	0	0	3232,96	0,09	0,22	0,16
Uganda	(2009,2014]	0	0	1	0	0	0	0	3754,66	0,09	0,22	0,26
Uganda	(2014,2019]	0	0	1	0	0	0	0	3871,79	0,09	0,22	0,21
United Arab Emirates	(1969,1974]	1	0	0	1	0	0	0	281759,76	0,26	0,64	0,15
United Arab Emirates	(1974,1979]	1	0	0	1	0	0	0	217110,90	0,18	1,01	0,19
United Arab Emirates	(1979,1984]	1	0	0	1	0	0	0	220474,75	0,10	0,68	0,24
United Arab Emirates	(1984,1989]	1	0	0	1	0	0	0	145432,47	0,11	0,61	0,30
United Arab Emirates	(1989,1994]	1	0	0	1	0	0	0	138192,34	0,12	0,49	0,37

United Arab Emirates	(1994,1999]	1	0	0	1	0	0	0	133965,17	0,11	0,42	0,44
United Arab Emirates	(1999,2004]	1	0	0	1	0	0	0	127126,59	0,15	0,40	0,48
United Arab Emirates	(2004,2009]	1	0	0	1	0	0	0	90348,08	0,20	0,55	0,51
United Arab Emirates	(2009,2014]	1	0	0	1	0	0	0	67104,88	0,06	0,52	0,54
United Arab Emirates	(2014,2019]	1	0	0	1	0	0	0	77894,28	0,06	0,45	0,34
United Kingdom	(1969,1974]	0	1	0	0	1	0	0	31745,15	0,05	0,39	0,37
United Kingdom	(1974,1979]	0	1	0	0	1	0	0	34282,19	0,06	0,34	0,41
United Kingdom	(1979,1984]	0	1	0	0	1	0	0	35825,49	0,06	0,30	0,46
United Kingdom	(1984,1989]	0	1	0	0	1	0	0	41793,54	0,05	0,35	0,49
United Kingdom	(1989,1994]	0	1	0	0	1	0	0	45905,00	0,05	0,31	0,49
United Kingdom	(1994,1999]	0	1	0	0	1	0	0	52303,54	0,05	0,30	0,48
United Kingdom	(1999,2004]	0	1	0	0	1	0	0	59517,42	0,06	0,28	0,51
United Kingdom	(2004,2009]	0	1	0	0	1	0	0	63508,54	0,06	0,26	0,57
United Kingdom	(2009,2014]	0	1	0	0	1	0	0	63903,44	0,05	0,25	0,60
United Kingdom	(2014,2019]	0	1	0	0	1	0	0	69341,37	0,05	0,27	0,53
United States	(1969,1974]	0	1	0	0	0	1	0	43793,75	0,07	0,25	0,65
United States	(1974,1979]	0	1	0	0	0	1	0	46887,78	0,06	0,25	0,64
United States	(1979,1984]	0	1	0	0	0	1	0	49609,49	0,06	0,25	0,64
United States	(1984,1989]	0	1	0	0	0	1	0	57515,83	0,06	0,24	0,54
United States	(1989,1994]	0	1	0	0	0	1	0	62508,09	0,06	0,22	0,47
United States	(1994,1999]	0	1	0	0	0	1	0	69700,81	0,06	0,24	0,50
United States	(1999,2004]	0	1	0	0	0	1	0	77009,65	0,06	0,23	0,46
United States	(2004,2009]	0	1	0	0	0	1	0	82065,31	0,06	0,20	0,46
United States	(2009,2014]	0	1	0	0	0	1	0	83526,57	0,06	0,20	0,41
United States	(2014,2019]	0	1	0	0	0	1	0	91933,50	0,05	0,20	0,53
Uruguay	(1969,1974]	0	0	0	0	0	0	1	12526,82	0,05	0,22	0,23
Uruguay	(1974,1979]	0	0	0	0	0	0	1	14435,07	0,06	0,39	0,27
Uruguay	(1979,1984]	0	0	0	0	0	0	1	15184,32	0,06	0,26	0,32
Uruguay	(1984,1989]	0	0	0	0	0	0	1	15485,33	0,06	0,18	0,38
Uruguay	(1989,1994]	0	0	0	0	0	0	1	17688,42	0,06	0,27	0,40
Uruguay	(1994,1999]	0	0	0	0	0	0	1	20492,68	0,06	0,28	0,42
Uruguay	(1999,2004]	0	0	0	0	0	0	1	19256,58	0,05	0,21	0,45
Uruguay	(2004,2009]	0	0	0	0	0	0	1	22811,82	0,06	0,29	0,49
Uruguay	(2009,2014]	0	0	0	0	0	0	1	28969,98	0,06	0,31	0,50
Uruguay	(2014,2019]	0	0	0	0	0	0	1	31742,79	0,05	0,23	0,47

Venezuela (Bolivarian Republic of)	(1969,1974]	0	0	0	0	0	0	1	1160,27	0,09	1,07	0,18
Venezuela (Bolivarian Republic of)	(1974,1979]	0	0	0	0	0	0	1	1280,75	0,09	1,44	0,25
Venezuela (Bolivarian Republic of)	(1979,1984]	0	0	0	0	0	0	1	1107,84	0,08	0,94	0,32
Venezuela (Bolivarian Republic of)	(1984,1989]	0	0	0	0	0	0	1	980,73	0,08	0,74	0,24
Venezuela (Bolivarian Republic of)	(1989,1994]	0	0	0	0	0	0	1	998,04	0,08	0,76	0,16
Venezuela (Bolivarian Republic of)	(1994,1999]	0	0	0	0	0	0	1	954,15	0,08	0,68	0,21
Venezuela (Bolivarian Republic of)	(1999,2004]	0	0	0	0	0	0	1	833,74	0,07	0,64	0,29
Venezuela (Bolivarian Republic of)	(2004,2009]	0	0	0	0	0	0	1	1002,76	0,07	0,84	0,36
Venezuela (Bolivarian Republic of)	(2009,2014]	0	0	0	0	0	0	1	1019,05	0,06	0,77	0,49
Venezuela (Bolivarian Republic of)	(2014,2019]	0	0	0	0	0	0	1	656,34	0,04	0,26	0,46
Zambia	(1969,1974]	0	0	1	0	0	0	0	6277,07	0,08	1,33	0,03
Zambia	(1974,1979]	0	0	1	0	0	0	0	5593,28	0,08	0,60	0,10
Zambia	(1979,1984]	0	0	1	0	0	0	0	4752,62	0,09	0,37	0,17
Zambia	(1984,1989]	0	0	1	0	0	0	0	4270,20	0,08	0,20	0,21
Zambia	(1989,1994]	0	0	1	0	0	0	0	3771,23	0,08	0,13	0,24
Zambia	(1994,1999]	0	0	1	0	0	0	0	3492,38	0,08	0,22	0,26
Zambia	(1999,2004]	0	0	1	0	0	0	0	3757,28	0,07	0,41	0,29
Zambia	(2004,2009]	0	0	1	0	0	0	0	4711,02	0,08	0,43	0,33
Zambia	(2009,2014]	0	0	1	0	0	0	0	5880,40	0,09	0,45	0,49
Zambia	(2014,2019]	0	0	1	0	0	0	0	6009,42	0,09	0,51	0,59
Zimbabwe	(1969,1974]	0	0	1	0	0	0	0	4296,73	0,08	0,20	0,10
Zimbabwe	(1974,1979]	0	0	1	0	0	0	0	3852,80	0,08	0,13	0,12
Zimbabwe	(1979,1984]	0	0	1	0	0	0	0	3931,66	0,09	0,13	0,17
Zimbabwe	(1984,1989]	0	0	1	0	0	0	0	3701,47	0,09	0,10	0,25
Zimbabwe	(1989,1994]	0	0	1	0	0	0	0	3722,84	0,08	0,14	0,36
Zimbabwe	(1994,1999]	0	0	1	0	0	0	0	3779,30	0,06	0,10	0,47
Zimbabwe	(1999,2004]	0	0	1	0	0	0	0	3066,46	0,06	0,10	0,56
Zimbabwe	(2004,2009]	0	0	1	0	0	0	0	2664,11	0,06	0,09	0,57
Zimbabwe	(2009,2014]	0	0	1	0	0	0	0	5105,17	0,06	0,12	0,58
Zimbabwe	(2014,2019]	0	0	1	0	0	0	0	5603,65	0,07	0,11	0,48

Notes: The following countries: Cote d'Ivoire, Democratic Republic of Congo, Myanmar and Eswatini report in MRW's dataset as: Ivory Coast,Zaire, Burma and Swaziland, respectively.