

Determinants of secular stagnation in high income countries

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Abstract

The reasons behind the secular stagnation phenomena that is happening in the developed economies have been an ongoing debate between researchers and the way out of the secular stagnation problem does not really exist. This is because of the failure of the traditional growth models to explain the slow or no growth happening the developed nations. Furthermore, this stagnation problem happening in the developed world is easily transmitted to the developing part of the world through the globalization and the international trade, which makes it an international problem. This paper aims at determining and quantifying the social, economic and political factors causing and affecting secular stagnation in the High Income Countries (82 countries) and the Euro Area countries using three different models. This is extremely essential in order to provide a clear picture of how to get out of the secular stagnation trap and prevent it from happening again in the future, in both the developed nations and the rising developing ones.

Keywords: developed countries, inflation, investments, labor force, macroeconomics, real interest rates, regime uncertainty, savings, secular stagnation, unemployment.

Jel Codes: B22, D8, E17, E21, E22, E31, J21

1. Introduction

According to Dufréno and Rhouzlane (2018), Dadush (2016), and Summers (2014), secular stagnation is a critical problem that the world is facing. Developed economies are suffering from no or so slow economic growth, which also affects the developing countries that trade with them, since globalization merged the world together and any problem that faces a set of countries reflects on the others.

Furthermore, this stagnation problem does not seem to be a short-term one. The structural changes happening due to the decreased growth patterns in the global economy may lead to change of the behavior of people and firms, since it led to a major rise in the propensity to save and a significant decrease in the propensity to consume or invest.

In addition, it is found that the worldwide real interest rates are affected from secular stagnation, as they are the price of savings. They are supposed to decrease until the demand and supply for money equate. However, the real short-term interest rates cannot decrease than zero because if this happened people will prefer having debt instruments that generate negative interest rate rather than holding money, which will for sure have an adverse effect on the economies (Summers, 2014).

One of the very interesting aspects about secular stagnation is the diversity of arguments about the concept, which are coming from the different schools of thought in economics. The Neo-Keynesian relates the durable market failure happening in the developed nations to the savings and investments unbalance over the years. So according to this school, the surplus in savings and shortage in investments are the reasons for having low long run interest rates. The Post-Keynesian-inspired research argued that the financial sector has a great role in the national income generation and in causing economic crisis such as creating a bubble or an excess in indebtedness (Dufrénot and Rhouzlane, 2018)

Furthermore, the Neo-classical school of economics referred the secular stagnation problem appearing in the advanced markets to the lower productivity achievements and aging population in those countries. However, the Schumpeterian school considered secular stagnation a temporary transitional stage in the industrialized markets that represent a stage of creative destruction. Afterwards, the New-Keynesian school claimed that the reason

behind the long-term stagnation is the inflexibilities of prices in the developed nations and the deficiencies in their financial markets (Dufrenot and Rhoulane, 2018).

Most of the previous empirical studies, such as: (Ferrero et al., 2019; Alexopoulos and Cohen, 2018; Caggese and Pérez-Orive, 2018; Acemoglu and Restrepo, 2017; Belke and Klose, 2017; Robbins et al., 2017; Storm, 2017; Eggertsson et al., 2016; Skott, 2016; Favero and Galasso, 2015; Kleczka, 2015; Eggertsson and Mehrotra, 2014; Summers, 2014), focused on presenting the secular stagnation phenomena experienced by some of developed countries and their respective adopted governmental policies. While constructing a comprehensive study that is able to capture the secular stagnation phenomena from all its different dimensions is extremely important, in order to achieve the desired economic growth in the developed countries (Hudecz, 2017).

Additionally, existing economic growth models fail to explain the economic growth of the developed nations nowadays. This creates an essential, and a rapid need for economic research that explains the determinants of economic growth in the developed nations, since studies concerned with determining economic growth in developed economies cease to exist. This can help them get out from the secular stagnation trap and prevent them from suffering from it again in the future.

In this research, the aim is to contribute to the growing body of empirical literature on secular stagnation by providing an empirical quantification for the effect of the suggested social, economic and political factors on secular stagnation in the developed countries. In order to accomplish this aim, the following research question will be studied: “What is the impact of claimed economic, political and social factors on secular stagnation?” and the following hypotheses will be investigated:

H1: The social factors have a significant impact on secular stagnation.

H2: The economic factors have a significant impact on secular stagnation.

H3: The political factor has a significant impact on secular stagnation.

Investigating these hypotheses will help in overseeing the currently applied stagnation policies in the developed nations, which will accordingly help in giving effective policies implications for the developed countries to achieve the long waited economic growth. This will not only boost the developed economies, but it will also save the entire world from the consequences of secular stagnation that can transmit through globalization to the rest of the world (the developing economies), which can hinder the global economic growth.

2. Literature Review

In 1938, Alvin Hansen (an Economist in Harvard University) was the first to introduce the concept of secular stagnation. His introduction to the concept was as a prediction for the U.S economy’s future after the great depression in the 1930s since he saw then that the American economy is an economy that has matured but is trapped in a hole that it couldn’t escape from (Hanke *et al.*, 2015; Eichengreen, 2015; W., 2014).

Hansen reasoned the slow or no growth of the American economy by the following; technological innovations have reached its limits, natural resources are exhausted, population is aging, and not facing lots of growth. Accordingly, Hansen expected investments to decrease due to scarce investment opportunities and recommended government interventions through fiscal policy to get out of this trap (Hanke *et al.*, 2015; Eichengreen, 2015; W., 2014).

Afterwards, Lawrence Summers – the former president of Harvard University and a U.S. treasury secretary- in 2013 after the great recession, revisited the concept. Summers as well said that the U.S. government is the way out of the stagnation that the American economy is facing, since he recommended –as Hansen did- that the government should step up and fill the investment gap caused by the insufficient private investments in the country (Summers, 2013; Summers, 2014)

In November 2013, Lawrence Summers gave a speech in the International Monetary Fund (IMF) conference where he stated that facing secular stagnation is probably “the defining issue of our age” (Summers, 2013). Since then, there has been an ongoing debate concerning the concept of secular stagnation between the Keynesian and the non-Keynesian schools economists, does it really exists? Is secular stagnation behind the failure of the governments to achieve economic growth? Or is it nothing but a phony justification for further government failure in the developed countries not only U.S.? (Summers, 2013; Hein, 2015; Hanke *et al.*, 2015).

Hanke *et al.* (2015) and Eichengreen (2015) define Secular stagnation as a condition in which there is continuous stagnation in the total output levels of a country and/or in its output per capita, which is accompanied by decreasing

real interest rates. In the secular stagnation, unemployment levels are increasing and chronic. In order to achieve full employment, economies facing secular stagnation needs to reach a negative real interest rate which they will not be able to achieve since the inflation rate is low.

So secular stagnation is a case where reaching full employment in the economies requires having an inflation rate that is higher than its nominal interest rate (to have a negative level of real interest rates). However, reaching high inflation rates is a challenge since one characteristic of secular stagnation is having low or no growth and accordingly low inflation rates (W., 2014; Summers, 2016).

Moreover, according to Dadush (2016), Secular stagnation is not a phenomenon facing the developed nations only; the developing nations can be affected as well. In case the strong decrease in the economic growth of the developed nations is proved to be persistent, this will surely affect the developing countries since there will be less chance for developing countries to produce and specialize in the products and services that developed countries want to import. Furthermore, the diminishing innovation at the production frontier will ultimately decrease the capability of developing nations to import new creative products and bound their growth chances as well since production of the developed nations will decrease which will open the doors for higher unemployment and more income inequality.

However, some economists claim that secular stagnation does not really exist and what the developed world is facing is just a “debt super cycle”. Since it is always hard to forecast future long run economic growth, debt super cycle seems a more logical term to find policy implications for. In addition, despite all of the other factors causing and affecting the stagnation, claiming that we are facing a debt super cycle caused by the intense financial crisis is always better for policy makers than claiming that the world is facing a long-term stagnation trap (Rogoff, 2016).

On the contrary, the performance of the economies of most of the developed countries has been disappointing the economic predictions forecasted years ago. If we examined the US’s GDP today, we will find that it is less than the predictions done before the financial crisis by more than 10%. Not only US, Japan as well, despite having a zero interest rate for several years, its GDP now is less than two third of what was predicted for it by researchers from generations (Summers, 2013; Summers, 2014).

Looking at the Eurozone, its GDP is less than what was expected by about 15%. The following figures (figure 1 and 2) will illustrate more the Eurozone’s, Japan’s and America’s GDP gaps. Also figure 2 shows that the European and Japanese decrease in GDP is almost similar to each other, since both were derived by the financial crisis (Teulings and Baldwin, 2014; Summers, 2014).

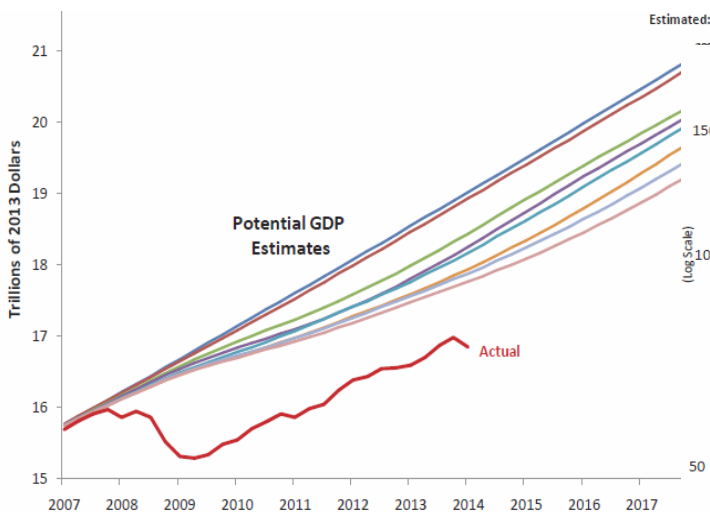


Figure 1. Actual and Potential GDP in the US
Source: (Summers, 2014)

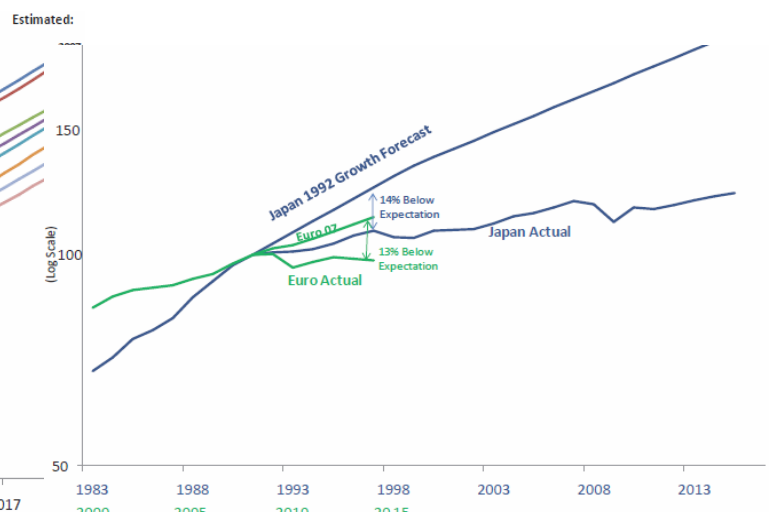


Figure 2. Japan and Eurozone, GDP Forecast VS Reality
Source: (Summers, 2014)

Since the low or stagnant growth in output is the most common worldwide, as the stagnation originally occurred in the developed nations and then transferred to the developing nations throughout the past years, some researchers tend to call it “the new normal”. This new normal is shown in figure 3, where the developed nations as well as the developing ones are shown to suffer from almost stagnant low parallel growth since 2011. In addition, the developing nations are shown to suffer from lower growth when compared to the developed nations (Chandrasekhar and Ghosh 2015; Summers, 2013; Pagano and Sbracia, 2014).

Besides, as concluded by Chandrasekhar and Ghosh (2015), when the annual growth rates of the major developed economies (United States, Japan, and Euro Zone) are analyzed together (as shown in figure 4), it is indicated that their pattern of growth is the same. Since all of them faced the maximum boom or recovery in year 2010, then they all fell into the slow or no growth trap.

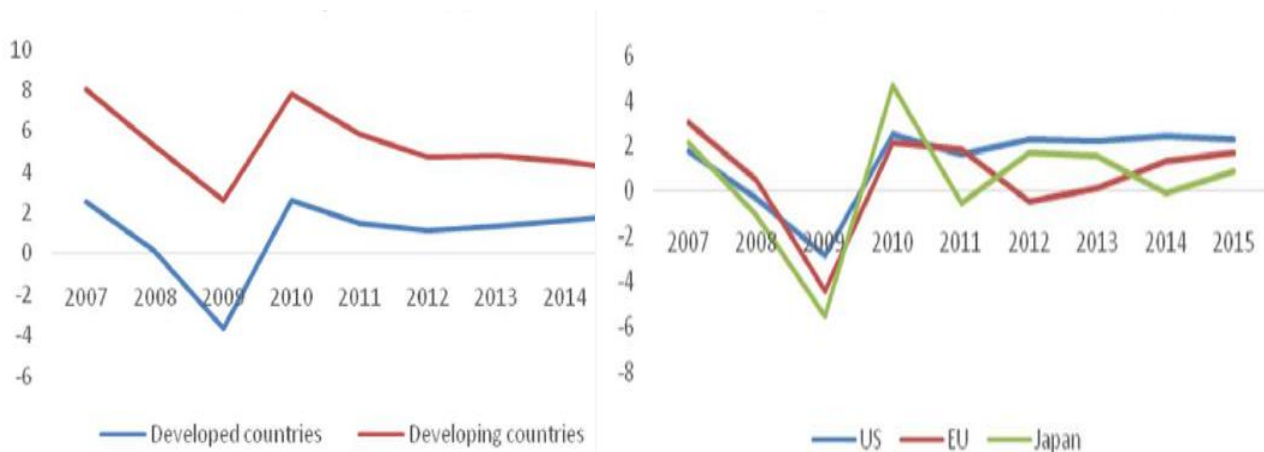


Figure 3. Annual GDP Growth Rates in Developed and Developing Nations (%)

Figure 3. Annual GDP Growth Rates in The Developed Nations (%)

Source: UNCTAD Trade and Development Report 2015

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One of the main reasons of the stagnation in the developed economies, especially in the U.S., is recommended to be the regime uncertainty. Regime uncertainty means that investors and the public are not trusting the government policies (taxes and investments regulations for example), and whether it those policies in their favor or not. Which decreases the investment and the demand in the nation, since people tend more to save their money instead of spending it on consumption or investment. It is found that as the degree of regime uncertainty increases, the degree of investment diminishes (Kleczka, 2015; Hanke *et al.*, 2015)

Accordingly, regime policies are found to be part of the secular stagnation problem (which is shown in the below figure, figure 5). Fiscal and monetary policy tools should not only be used to reach the economy’s equilibrium, but also to decrease the level of the uncertainty and accordingly achieve the desired level of economic growth again (Kleczka, 2015; Hanke *et al.*, 2015).

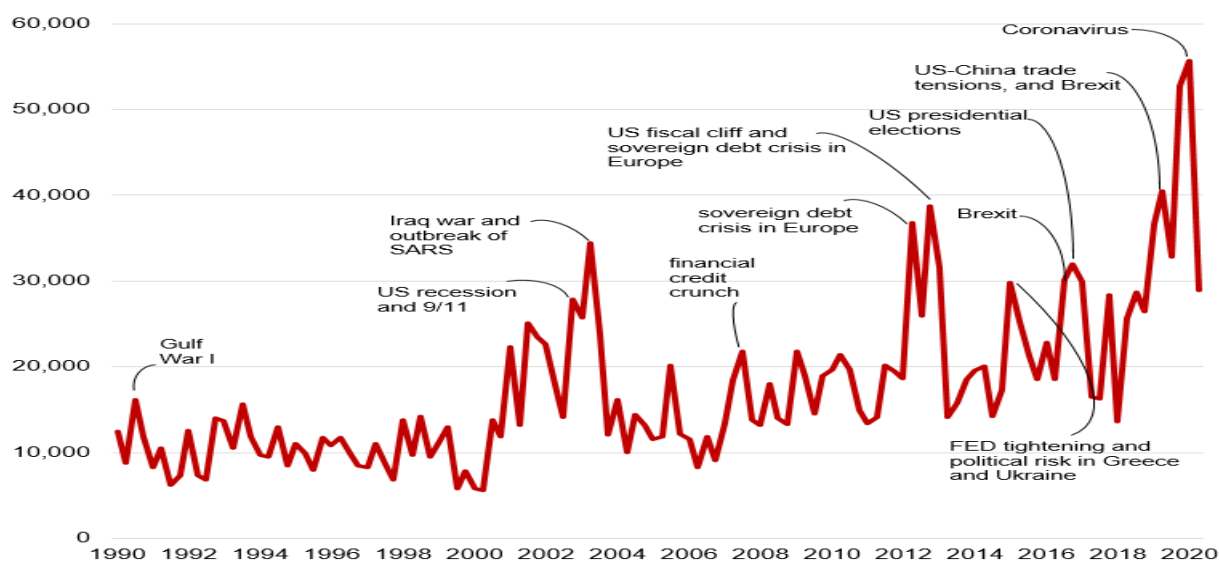


Figure 5. World Uncertainty Index in advanced economies (1990-2020)

Source: World Uncertainty Index Report (2020)

In addition, neoclassical economists are associating the stagnant long-term economic growth that developed nations are facing to the diminishing marginal productivity of capital and labor. During the times after the Great Depression, some "stagnationist" economists believed that economic growth could stay small for a long era if the natural interest rate - that stabilizes savings and investment - is negative, while the interest rates in the money market was very small but stagnant above zero. Some economists, like Klein (1947) sustained this explanation by saying that the real interest rate is inelastic with respect to investment and savings (Dufréno and Rhouzlane, 2018; Klein, 1947).

On the other hand, Schumpeter disagreed with these arguments. Since he argued that through creative constructions and the collaboration between innovations and inventions, structural and fruitful conversions can upsurge to new investments that stop the growth engines from stopping, in addition to the importance of the strategic use of the fiscal and monetary tools (Dufréno and Rhouzlane, 2018; Summers, 2013).

Furthermore, Bob Gordon's analysis for the reasons behind the stagnation in US has stated four main structural reasons for the country's stagnation other than the technology, since he believed that the progress in technology has not stop, it just went back to its regular slow norm. So other than technology, he believes that there are four main reasons for the stagnation trap that caused the economic growth to be a "turtle", which are; (1) The demographic factor which is the aging population and decrease in the labor force participation rate. (2) The educational factor, which is that the surge in education enrollment in US has ended since the 1970s, now the rates of high school completion are decreasing with no increase to be expected. (3) The inequality factor which is that the country's income distribution has been unequal since 1980 where the highest portion of income is received by the top people only who represent 10% of the population. (4) The public debt since the government debt ratio out of the GDP is rising as the economic growth is slowing down and the government revenues are diminishing (Gordon, 2012; Hudecz, 2017; Teulings and Baldwin, 2014).

According to (Hefnawi and Ghoniem, 2020), Solow Growth Model has become one of the most essential models in the macroeconomic field, since it is now the standard model used in explaining the economic growth of the countries as it provides a more realistic representation for the production and output levels. Additionally, the model allowed the economists to describe and study the growth patterns in current economies, specially the developing ones (Hefnawi and Ghoniem, 2020).

Solow Growth Model -which is centralized on the neoclassical production function, more specifically the Cobb-Douglas type- replaced Harrod-Domar model by adding factors to the production function that contribute to the total output level in the economies; those factors are labor and technology. Moreover, the model concludes diminishing marginal returns to capital and labor independently. However, it shows that there are constant returns to scale to labor and capital together. Furthermore, it considers the technological progress the residual factor that

is explaining the long-term growth. Solow and the other theorists considers the value of the technological progress to be exogenous, as it does not depend on any of the other factors in the model (Acemoglu, 2008; Todaro and Smith, 2011; Mankiw et al., 1992).

The standard form of the neoclassical Solow growth model is the following:

$$Y(t) = K(t)^\alpha (A(t)L(t))^{1-\alpha}$$

Where Y (the output level) is function of K (the human & physical capital), L (the labor force) and A (the labor productivity based on the level of technology used, which increases in an exogenous rate). As for α , it is the elasticity of output with regards to capital; the percentage change in the gross domestic product caused by a 1% increase in human and physical capital, where ($0 < \alpha < 1$) (Todaro and Smith, 2011; Mankiw et al., 1992; Solow, 1956; Swan, 1956).

However, economists have always considered human capital an essential factor for the growth of the countries. According to the estimation of Kendrick in 1979, more than 50% of the US capital stock in 1969 was human capital. As for Lucas (1988), he found that physical capital accumulation shows decreasing returns to scale when human capital is held constant, while it shows constant returns to scale when both human capital and physical capital are included. That is why Mankiw thought that disregarding the human capital factor from the model can lead to wrong and misleading conclusions (Mankiw et al., 1992).

Accordingly, In 1992 David Romer, David Weil and Mankiw created an augmented version of Solow growth model. This augmented version is mainly about adding human capital to the growth model, it describes the reason behind the failure of global investment to occur in poor countries. In this augmented model, output (Y) and marginal product of capital (MPK) are shown to be less in poor countries as poor countries were proved to have less human capital than rich countries (Mankiw et al., 1992).

The augmented Solow-Swan model that studies economic growth is the following:

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

In this model; Y (t) which is the economic growth in a certain time period is function of, H (t) denoting the human capital stock at the same time period, K (t) denoting the physical stock in the time period, L (t) is the labor force available in the market along the same time period, A (t) representing the labor productivity based on the technology used, α is the elasticity of output with regards to physical capital, and β is the elasticity of output with regards to human capital. In this model, A and L are expected to grow in an exogenous rate (Gundlach, 1995; Mankiw et al., 1992).

Solow growth model claims that quality education, good health care system, physical capital accumulation, labor force, and technology are the key factors to achieve economic growth in any country. Yet, developed countries they have the previously stated factors and still experiencing the slow or no growth. Additionally, it is argued by Storm (2017) that the “Solow residual” is not successful in measuring the variation in the economic growth. It was concluded that ever since Solow growth model have introduced the “Solow residual”, the economic growth started to be an unobservable variable that is quantified only but cannot be properly measured. This is because any variation in the measurement in the total factor productivity (TFP) growth was returned back to the “Solow residual”, which turned to be a measure of researchers’ ignorance (Storm, 2017).

Accordingly, the time has come to stop depending on the Solow residual, because it is now proven to be a fallacy that justifies the researchers’ failure in finding the real reason of the gap between the economic growth estimations and its actual numbers (Shaikh 1974; Rada and Taylor 2006; Felipe and McCombie 2012). This raises the questions of; How to explain the economic growth in developed nations? And how to achieve the long waited economic growth in developed countries?

The problem of not having a comprehensive model that is able to explain the economic growth of the developed economies is the research gap that this study aims to fulfil, through studying the determinants of secular stagnation in the developed economies. Thus, this paper aims at studying and explaining the reasons behind the economic growth struggle in the developed nations. By this, we form a potential path or a recipe that describes for the current

developed nations how to get out of the secular stagnation trap and how to maintain economic growth after achieving it.

Based on this research gap, the research question that this research will attempt to answer is: “What is the impact of claimed economic, political and social factors on Secular Stagnation?”. As for the hypothesis that this research will investigate, they are the following:

H1: The social factors have a significant impact on secular stagnation

H2: The economic factors have a significant impact on secular stagnation.

H3: The political factor has a significant impact on secular stagnation.

By this, we form a clear image of the magnitude of the effect caused by each of those factors on secular stagnation. This will help in overseeing the currently applied stagnation policies in the developed nations, which will accordingly help in giving effective policy implications that can help the developed countries achieve the long waited economic growth.

This will not only boost the developed economies, but will also have positive effect on the developing nations as well since the developed nations status is almost automatically transmitted to the developing ones through the international trade between them.

3. Data and Methodology

In order to determine the effect of the different social, economic and political factors on secular stagnation in the developed countries, number of sophisticated econometric models are regressed, through running time series data analysis in the ordinary least squares regression method.

Starting with the database used to study the research variables; the annual GDP (in dollars) is used as an index for the economic performance, which is the dependent variable representing secular stagnation in the regressed models. As for the independent variables, they are divided into three main groups: the social factors, the economic factors, and the political factor.

First, the database used for the social factors; the dependency ratio is used as the index for the aging population variable, the annual population growth (%) is the index representing the population growth variable, and the school enrollment in tertiary education is the index for the education variable. Secondly, the economic factors' indexes; the number of people in the labor force is the proxy used for the labor productivity variable, the gross capital formation (percentage from GDP) is the proxy representing the capital productivity variable, the inflation rate is the proxy reflecting the deflation variable, the net investment in nonfinancial assets (percentage from GDP) is the proxy used to the investments variable, and the gross domestic savings (percentage of GDP) is the proxy reflecting the savings variable. Finally, the political factor which is the regime uncertainty, it is measured in this research using the world uncertainty index (WUI).

All the previously stated indexes (except for the WUI) are retrieved from the World Bank covering the time-period from 1960 to 2019. Those years are particularly chosen as it is the longest period of available data for the High Income Countries. The indexes are retrieved on the High Income Countries category according to the World Bank classification, this category is chosen since it shows a reflection on the average of the requested measures in 82 different developed countries, which allows us to successfully determine the effect of the studied variables on the economic performance of most of the developed countries.

As for the world uncertainty index (WUI), it is retrieved from the World Uncertainty Index Reports. The data collected from there is quarter data covering the time-period from 1990 (1st quarter) to 2021 (2nd quarter) and representing the Euro Area only. In order to regress this quarter data and study its effect on the economic performance of the Euro Area, other GDP quarter data are collected from the Organization of Economic Co-operation and Development (OECD) statistics reflecting the quarter GDP performance in the Euro Area from 1990 (1st quarter) to 2021 (2nd quarter) as well.

Finally yet importantly, the regression process in this research is divided into three main models. The first model is concerned with regressing the annual social factors on the annual GDP of HIC, while the second model is mainly about regressing the annual economic factors on the annual GDP of HIC, and finally the third model aims at regressing the political factor measured quarterly on the quarter GDP of the Eurozone.

Additionally, each of the three functions is examined using the robustness tests separately (heteroscedasticity, autocorrelation and multi-collinearity) and actions are taken in order to fix for any problem that showed evidence of happening in any of functions or between the variables used in any of the models.⁴

4. Empirical Findings

As mentioned above in the methodology, the regression phase is divided into three models. Accordingly, the results and findings are also divided into three main parts. A part discussing the social factors (population growth, school enrollment and dependency ratio) effect on secular stagnation, then another part discussing the impact of the economic factors (gross capital formation, inflation rate, gross domestic savings, net investment in nonfinancial assets and labor force) on secular stagnation, and then the last part discussing the impact of the political factor (uncertainty) on secular stagnation. The results of each model will be discussed separately in this section and are represented collectively in the following table (table 1).

Table 1. Impact of the social, economic and political factors on the economic performance of HIC

Variables	Model (1)	Model (2)	Model (3) – Euro Area
Annual Population Growth	1.72 (0.9709)		
Age Dependency Ratio	2.72 (0.2678)		
School Enrollment (tertiary education)	9.76*** (0.0000)		
Inflation Rate		2.75 (0.4528)	
Gross Capital Formation		-1.78* (0.0670)	
Labor Force		61245.60** (0.0337)	
Gross Domestic Saving		5.022*** (0.0000)	
Net Investment in Non-Financial Assets		3.55** (0.0181)	
World Uncertainty Index (WUI)			44.91982*** (0.0000)
Constant	-3.85*** (0.0036)	-3.00** (0.0267)	972973.9*** (0.0014)
Number of Observations	49	27	126
R-Squared	0.981777	0.994664	0.302708
Prob. (F-statistic)	0.000000	0.000000	0.000000
Prob(Wald F-statistic)	0.000000	0.000000	0.000002

This table reports the results regarding the impact of the factors regressed in the table on the GDP of the High Income Countries. The models used are time series OLS model, with heteroskedasticity and autocorrelation correction method (Newey-west standard errors method (HAC)).

P-values are given between the parentheses.

***Means statistically significant at 99% confidence level.

** Means statistically significant at 95% confidence level.

* Means statistically significant at 90% confidence level.

In the first model (the one including the social factors), the R-squared is approximately equal to 0.982, which means that the results are successful in predicting 98.2% of the annual GDP in the high-income countries. Additionally, the model F statistic and the Wald F statistic are significant at 99% confidence level, which shows that the model is accurate.

The social factors model have shown that there is positive but insignificant relationship between the GDP of HIC and their population annual growth rates, which means that the slow population growth is not affecting their GDP growth, since the relation is insignificant. This challenges the findings of Hudecz (2017) who argued that the slow growth in the population of the developed countries is one of the reasons behind their slow economic growth.

Likewise, the age dependency ratio have also shown positive insignificant relationship with the GDP of HIC, this means that it is also not one of the factors contributing in the secular stagnation. This goes along with the findings of Acemoglu and Restrepo (2017) who found that there is no negative relationship between the aging population and economic growth in the Penn World Tables countries and OECD countries. On the other hand, the model have proved that there is positive and highly significant relation between the school enrollment in tertiary education and the economic performance of the high-income countries. Accordingly, the decreasing rate of high school completion in the developed nations is one of the factors causing secular stagnation. This supports Gordon (2012) argument about the education factor, since he argued that educational stagnation in most of the developed countries is decreasing the productivity of their labor force and accordingly affecting their economic growth.

As for the second model (the one including the economic factors), the R-squared is approximately equal to 0.995, which means that the results are successful in explaining 99.5% of the annual GDP in the high-income countries. Moreover, the model F statistic and the Wald F statistic are significant at 99% confidence level, which shows that the model is trustworthy. This model have shown that the deflation or low inflation rate problem facing the HIC has positive but insignificant relation with their economic performance, which again challenges the argument of Hudecz (2017) that “disinflation” is one of the factors causing secular stagnation. This can be because the low inflation rate is part of the secular stagnation problem, as it can be considered a consequence of the slow or no economic growth, not one of the reasons behind it.

Additionally, the economic factors model have shown that there is significant negative relationship between the gross capital formation and the GDP of the HIC. This means that developed countries are already abundant of capital and that they have reached their saturation of it, so they are in the diminishing marginal productivity phase of capital accumulation. This goes along with the assumption of the neoclassical economists. However, the model have also shown a large, positive, and very significant relationship between the number of people in the labor force and the GDP of the HIC. This shows that the developed countries need more people to join the labor force (with the needed qualifications, which adds up to the need for achieving high education as concluded from the first model) and that the marginal productivity of labor is still in the increasing phase. This finding challenges the assumption of the neoclassical economists, since they referred the stagnant economic growth happening in the developed nations to the diminishing marginal productivity of capital and labor, not only capital (Dufréno and Rhouzlane, 2018).

Furthermore, the savings and the investments in non-financial assets are found to have positive and significant relationship with the economic performance of HIC, which shows that higher levels of savings and investments can contribute to achieving the desired economic growth in the developed countries. However, it is important to highlight that the needed investments are not in form of capital (since capital is found to be in the diminishing MPK phase). The needed investments in the developed countries are in form of R&D, innovation and technological investments. Those are the types of investment needed in order to move the economic growth engine again, which is consistent with the Schumpeterian argument and the results of Gordon (2012).

Regarding the third model in this research (the one including the political factor), the R-squared is approximately equal to 0.303, which means that the results are successful in presenting 30.3% of the quarter GDP in the Eurozone. Moreover, the model F statistic and the Wald F statistic are significant at 99% confidence level, which shows that the model is reliable as well. This model have verified the relationship between the regime uncertainty and the economic performance in the Eurozone, since it showed that there is positive and highly significant relationship between them. This proves that the government policies is actually part of the secular stagnation problem, since regime uncertainty decreases the investment and consumption expenditures in the economies, and accordingly causes the economic growth to struggle (Kleczka, 2015; Hanke *et al.*, 2015).

5. Discussion and Conclusion

In conclusion, the model studying the relationship between the social factors and the economic performance of the high-income countries has concluded that achieving high levels of education is an important factor that can help developed countries achieve economic growth. Both the low population growth rate and the increasing age dependency burden are found to be insignificant to the economic performance of the developed nations, which means that those factors are not pressuring their economic growth yet. Accordingly, the first hypothesis of this research is not rejected, since one of the social factors is found to have a highly significant impact on secular stagnation.

Moreover, the model investigating the relationship between the economic factors and the performance of the high-income countries has shown that capital formation is having a significant negative relation with the economic performance of the developed countries which stresses on the idea that developed countries are already capital abundant. Furthermore, this was confirmed with the relationship between the savings, investments, and the economic performance of HIC. Since there are positive significant relations between the savings and investments in the high-income countries and their national income, which stresses on the importance of the technological investments that is directed towards innovation, technology and R&D in order to get out from the secular stagnation trap.

In addition, the labor force is found to be one of the important contributors to the economic growth in the developed countries. The only insignificant economic factor is found to be the low inflation rate, since it is one of the consequences of secular stagnation, not a cause. Therefore, the second hypothesis of this research is not rejected as well, since the economic factors are found to have very significant impact on secular stagnation.

Furthermore, the model examining the relationship between the political factor, which is the regime uncertainty, and the economic performance of the Eurozone has found that there is positive highly significant relationship between the regime uncertainty and the national income of the Eurozone. This emphasizes that the governments' policies to solve the secular stagnation problem are now part of the secular stagnation problem, which requires the governments to prioritize regaining their public and investors' trust before applying any other policies. Gaining the public trust can actually be the key to apply successful fiscal and monetary policies. Hence, the third hypothesis of this research is also not rejected, since the political factor is found to have a highly significant and essential impact on secular stagnation.

As for the limitations of this research, this research was limited by the unavailability of some collective indexes that represent the high-income countries all together or the Eurozone area. Those missing indexes are; The Gini index to measure the effect of income inequality on the economic performance of the developed countries. The central government debt to study the relationship between the countries' public debt and their economic performance. And the real interest rates in order to quantify the relationship between the low interest rates in the developed countries and their economic performance. That is why it is planned for the future research continuing on this topic to study those three missing variables' effects on secular stagnation using panel data that include a representative set of developed countries.

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