Assessment of Government Health Expenditure and Economic Growth in Kenya

Kelvin Mutira Misango, MA Economics[1], Dr. Richard Siele[2], Dr. Kipruto Kemboi[3]

[1,2,3] Department of Economics, School of Business and Economics, Moi University Kenya

ABSTRACT: Kenya's Vision projected an economic growth rate of 10 per cent per annum from 2008 to 2030 which has not been achieved to date. The purpose of this study was to assess the impact of Health Expenditure on economic growth in Kenya as one of the health indicator hindering growth rate. The study adopted the endogenous growth theory and incorporated key health expenditure into the model as a function of human capital. The research design employed was explanatory and relied on secondary data from World Bank from 1987 to 2018. Applying the regression model, the results revealed that the coefficient of healthcare expenditure was 0.3032, $p = 0.663 > 0.05$ which was positive and insignificant at a 5 per cent level. This implied that for every one per cent increase in the coefficient of health care expenditure, the GDP growth rate could increase by 0.3032 %. The Kenya government could put in place health policies promoting citizens' health under social pillar and also increase allocation to health care to promote economic growth.

KEYWORDS: Economic Growth, Health Expenditure, Health Policy.
JEL CLASSIFICATIONS: JEL I150 Health and Economic Development.

1. INTRODUCTION

Economic performance has experienced an improvement in growth rate since independence with strong government policy such as the Sessional papers and Vision 2030. The guidelines of the development goals has seen an improvement. In 1965 the growth rate was 2 per cent, in 1980 the growth rate had an increase to 5.592 per cent with a decline in 1985 it recorded 4.301 per cent. In 1995 the growth rate was 4.406 per cent with a decline in 2000 which was 0.6 per cent. Towards 2005 there was a rise in economic growth due to stable macroeconomic conditions and policies of about 5.907 per cent with the highest in 2010 of about 8.406 per cent. In 2018 Kenya recorded a growth rate of 6.32 from 4.86 in 2017 per cent due to political turmoil on the presidential election in 2017. It is projected by vision 2030, it would be recording an annual growth rate of 10 per cent.

According to (WHO, Global report 2020) high income countries spend on average 14.3 percent gross domestic product on health, upper middle income spend 11.6 percent , lower middle income spend 7.3 percent and low income countries spend on average 5.6 percent. It shows developed countries spend more on health care expenditure for an improved economic growth and a healthy population contributes socially and economic development of a society. Despite the developing nation to increase allocation to health expenditure for an improved economic development.

Globally, there has been efforts and commitments by developed nations to support and aid developing economies on health financing: Rome 2003, Paris 2005, Accra2008, Busan 2001 and Abuja declaration 2001 which aim was for donor support to low income countries on increased aid support for health financing (Kenya Health Policy 2014-2030). In Kenya the allocation to the health sector by the government is not sufficient. Most allocation about 70 percent of the MOH goes recurrent budget for salaries and 30 percent for supplies and other expenses (MOH, 2010). Disparity in allocation begs for donor support from international agencies to aid in implementation of the budget in every financial year.

Due to the limited allocation to health care expenditure as a share of gross domestic product , the government has align a long term development goal under vision 2030 on the social pillar which health is one of the component to attain a high standard of health under population. The allocation to the health sector by the government is therefore a vital factor and hence the need to strengthen the allocation of resources towards the health sector.

Assessment of Government Health Expenditure and Economic Growth in Kenya

Overview of Health Expenditure in Kenya

A healthy population transforms into greater progress in economic development because the population is productive (KIPPRA Policy Brief, 2018). Health financing is a fundamental in determining whether health services are available and affordable for all of them (Mid-term review of KHSSP July 2018- June 2023).

The health sector is one of the key components in addressing equity under the social pillar of vision 2030. The key objective include increasing equitable access to health services , improvement of quality and effectiveness of service delivery and improved financing of the health sector.
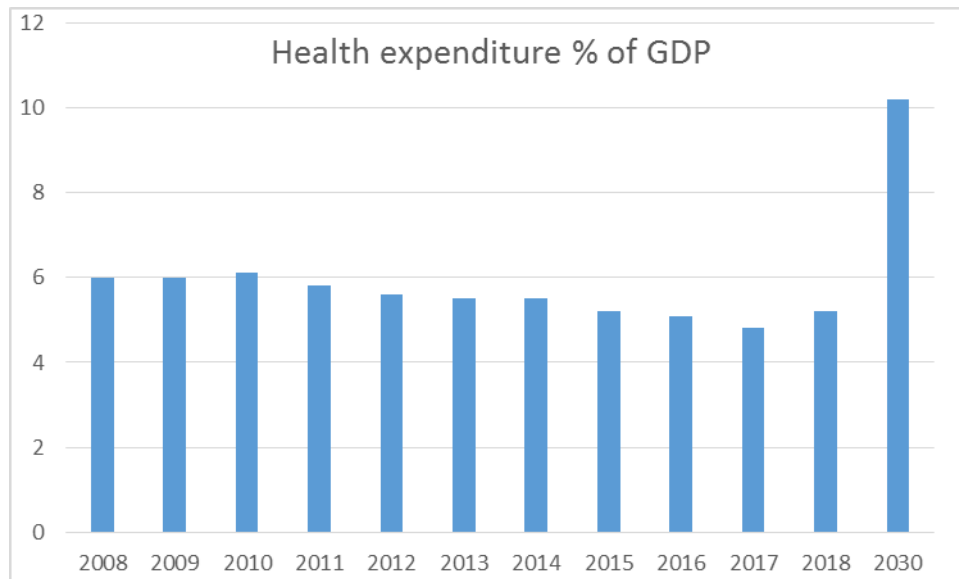

Figure 1: Health Care Expenditure

Healthcare expenditure shows the total of public and private health expenditure to cover the provision of health services. In 2008 the healthcare expenditure as a percentage of GDP was 6 percent and declined to 5.8 percent in 2011. Since then it has been constant in 2013 and 2014 at 5.5 percent to a further decline of 4.8 percent in 2017. The government in its commitment to focus on provision of healthcare services by 2030 saw a slight increase of 5.2 percent in 2018.

Despite studies that have been conducted on the impact of health expenditure on economic growth. The study problem is based on inadequate health expenditure and citizens are forced on out of pocket expenditure to access health services, making many household poor because most of their income is used on health care hence decrease their savings . In Kenya, few studies have been done on the impact of health care expenditure on economic growth. Due to the slow growth rate contributed by inadequate health care expenditure, this study will try to assess the impact health expenditure on economic growth in Kenya. This study aims to bridge this knowledge gap.

The general objective of the study was to assess the impact of health care expenditure on economic growth in Kenya. Specifically, the study sought to achieve
  (i) To assess the nature of the relationship between health care expenditure on economic growth hence improve policy measures in health care expenditure to improve economic growth.

The study postulated the following hypotheses:

Ho_1: Health care expenditure does not significantly affect economic growth in Kenya.

The study would help the National government, County government, and other stakeholders like International donors to put measures and improvement of health care expenditure. Furthermore, the study would be expected to benefit scholars and academicians who could want to use it as a reference to the findings of this study for further research and also fill the knowledge gap of this study. The study would add value to understanding the significant relationship between Gross Domestic Product and Health care expenditure.

Assessment of Government Health Expenditure and Economic Growth in Kenya

The research examined the extent to which the Health care expenditure will affect Economic Growth from 1987 to 2018 in Kenya. The study will investigate the long-run relationship of a period 31 years between the Gross Domestic Product as a Dependent variable and Health care Expenditure as an Independent variable.

2. LITERATURE REVIEW

2.1 Theoretical Literature

Baumol Effect

(Baumol, 1993) , Baumol effect or cost disease on public choice are considered to be in a slow productivity growth due to a high labour coefficient. Baumol effect on the health care sector with a view on the price –elastic demand causes wages in the healthcare to rise proportionally to productivity growth of the overall economy. Baumol pointed out that quality improvement through medical progress is not properly measured by current healthcare price indices. As a result, relative price increases would dampened if the prices were quality adjusted.

Baumol effect is the tendency for relative prices of some services to increase other than other goods and services in the economy reflecting a negative productivity of wages across sectors particularly prices of health services. The price in the healthcare will rise relative to other prices because wages in low productivity sectors must keep up with wages in high productivity sectors according to (Kea et al, 2011). The Baumol effect may also be an important factor for the growth of healthcare expenditure but not necessarily for their levels and assumes that the cost of healthcare which is a labour intensive good will be higher in high wage economies as with a price elastic demand and the share of healthcare expenditure in GDP would tend to increase overtime (Hartwig, 2008).

The Baumol effect explains why labour intensive services get more and more expensive as the economy grows and not only for the current economy but for the future economy. As for this studies in the developing nations Baumol effect may be irrelevant as the Baumol effect only affects the developed nations because labour intensive get expensive which causes the cost of healthcare to increase.

Endogenous Growth Theory

The Endogenous growth models, Lucas (1988) and (Romer P., 1989) were the key players in the development of the endogenous model. This theory assumed that the growth rate of a Nation is Endogenous and is determined within the model and gave much emphasis on productivity, efficiency, and improvement in Technology. The theory considers that if productivity increases, the labour force will be provided with resources such as physical capital, human capital, and technology. The school of thought of Endogenous growth believed that the Steady-state growth rate of a Nation is affected or assumed by the rate of Factors of Production which are accumulated over time with the constant return to scale in which steady-state will be influenced by the factors which are accumulated. The theory viewed that Economic actors and government policy will be able to affect the growth rate in the long run. In this regard, the Endogenous growth rate is seen among the differences in growth rate among countries that have a different level of savings rate and Investment in what is known as Conditional Convergence or Divergence. The neo-classical Solow growth model does not give sufficient evidence on how economic growth occurs and highlights that it happens by chance. In the endogenous model, the technical change does not happen by chance but is influenced by policy decisions which are included with labour and capital with government interventions. Government interventions like subsidies, tax policies promote economic growth.

2.2 Empirical Literature

Healthcare Expenditure and Economic Growth

Amaresh Das & Frank Martin (2010) determined the aggregate health care expenditure for the US using a time series data. The study used cointegration data to support the view that per capita income is the major determinant of aggregate health care expenditure is US. The result of the study found out that Age of the population, number of practicing doctors and share of public finance do not contribute significantly on health care spending. The study recommended that health expenditure policy should be increased in the supply of physicians or policies that promote competition but with the long run policies that promote human capital.

Narayan Sethi et al (2020) investigated the short term and the long term effect of health care expenditure, institutional quality, domestic and foreign investment on economic growth of South Asia Countries during the period 1996-2018.The study used OLS estimation with random effect model and cointegration to test the short term and long term relationship. The study found out that there runs a bidirectional causality from health expenditure to economic growth in the short run. The study recommends that

Assessment of Government Health Expenditure and Economic Growth in Kenya

South Asia nations require to strengthen the accessibility towards affordability, accountability of the health care services being provided by the population.

Nyamwage Mathew (2012) examined the effect of per capita GDP on public health care expenditure in Kenya using the OLS regression technique. The study used time series data and checked on cointegration on the long run relationship between PHCE and GDP per capita, The results showed that Healthcare in Kenya is a necessary good and has an elasticity of 0.024% to GDP per capita. In every 1% increase in GDP per capita, PHCE should increase by 0.024%.

Murray et al (1993) carried out a study on the impact of "Global Domestic Expenditures on Health" by categorizing expenditure into public and private sector expenditures. Public sector expenditures comprised of government and parastatal expenditures on health and private expenditure included private voluntary and household spending. The study found out that public health expenditures accounted for 44% of total expenditure in Africa. Capital expenditure accounted for about 17% of the total government health expenditures.

James Murunga et al (2019) investigated the effectiveness of public health spending on healthcare. The study used health production function in which infant mortality rate was used to measure health outcome. The study used time series data running from 1984 to 2016 and Error correction model to test for long run relationship. The results showed that public expenditure on average influences economic growth and found child immunization as another factor which is a determinant for health outcome. The study recommended the government should increase budgetary allocation to health sector and more resources to child immunization.

Oganda and Ong'olo (1999) carried out an analysis of government expenditure on basic social services in Kenya. The objectives of the study were to determine how much of the national budget and international aid flows were being spent on basic social services and the financial implications for basic social services in improving health status. They attributed the decline of public expenditure to the improved health services especially the increased emphasis on immunization. Life expectancy at birth also improved from 39 years in 1950's to over 60 in the 1993.They found that the proportion of healthcare spending on health care as a share of real GDP had been falling. The results further revealed that only 10% of the government budget in the recent times went to development activities while the rest went to recurrent items. These results revealed a decline in infant mortality rate and thus attributed its improvement to the increase.

2.3 Research Gap
Most studies used other methods in data analysis to determine the relationship between Health care expenditure and economic growth. On the empirical studies, there is shortcomings as studies differ on the results. Most studies find the results to be positive and insignificant while others find to be positive and significant with a few studies finding no effect health expenditure on economic growth. To bridge this gap, the study will adopt the OLS regression technique for data analysis from 1987 to 2018 by providing the nature of the relationship between health care expenditure and economic growth and also test for Integration, Vector Error correction and Unit root test to fill this knowledge gap.

3. RESEARCH METHODOLOGY
3.1 Area of Study
The study covered the entire country in which liaising with Kenya National Bureau of Statistics which collects data for the government, National Treasury, Central Bank of Kenya, Ministry of Health, World Bank Indicators and World Health Organization was done.

3.2 Empirical Model
The study employed an explanatory approach research design. The econometric model used was based on the Theoretical Framework using the Endogenous growth model. The study used GDP for Economic Growth as a Dependent variable while Health care expenditure as independent variables. The model was specified from the Theoretical framework as:

$$Y = \beta_0 + \beta_1 x_1 \tag{1}$$

Where y is GDP; x_1 is health care expenditure
The estimated model was then transformed into log-linear models reducing the equation as natural logs to avoid the problem of multicollinearity among the variables in the model and also helps to reduce the variability of data and enables direct estimation of elasticities.

$$\ln GDP_t = \beta_0 + \beta_1 \ln HCE_t + \varepsilon_t \tag{2}$$

Assessment of Government Health Expenditure and Economic Growth in Kenya

Where $lnGDP_t$ = Log of Gross Domestic Product (a proxy for economic growth) in period t

$lnLE_t$ =   Log of Health Care Expenditure in period t$lnLE_t$; ε_t = Error Term, which captures all factors that affect GDP but are not taken into account (Gujarati, 2004); β_0= Interceptβ_1,β_2,β_3, β_4 = Coefficient of the Independent Variables.

3.3 Data Source and Type

The sample of the study to be used was secondary annual time series data over a period (1985-2017) both the Dependent variable and Independent variable. The data will be obtained from Secondary data and extracted from various Institutions including KNBS, World Bank data, C.B.K and WHO, UNICEF and UNDP development Indicators.

4. RESULTS AND DISCUSSION

The study tested for multicollinearity and a rule of thumb and produces a VIF value of each explanatory variable in the model. The results depicted that, the null hypothesis of non-multicollinearity was acknowledged as the VIF were less than 10 or the tolerance (1/VIF) was more than 0.1 for all the variables.

Results of the Augmented Dickey Fuller unit root was presented in Table 1

Table 1: Augmented Dickey-Fuller after Differencing

Variable	ADF t-statistic	1% level	5% level	10% level	Conclusion
lnGDP	-5.850	-2.654	-1.950	-1.602	I(0) Stationary
lnHCE	-5.309	-2.652	-1.950	-1.602	I(0) Stationary

From the results in table 1, after differencing the ADF t-statistics log of GDP was -5.850 log of health care expenditure is -5.309, which were greater than the critical values at 5%. This implied that the variables were stationary after differencing at a 5% level of significance and concluded that there was no unit root.

Plot for variables after Differencing

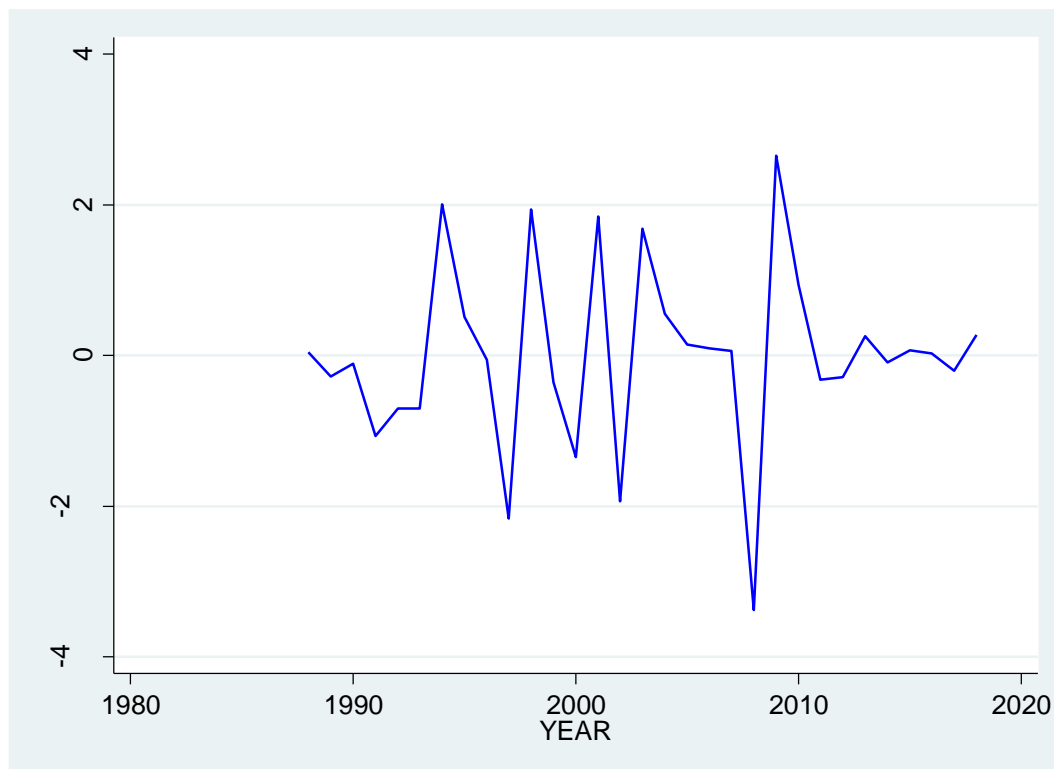The plot of log of In GDP after first differencing is shown below 4.7

Figure 2: Plot for Log of GDP after first differencing
Source: Author (2022)

Assessment of Government Health Expenditure and Economic Growth in Kenya

The first differenced variable was stationary around a trend or mean. The variable GDP was integrated of order 1 since it became stationary after being differenced once.

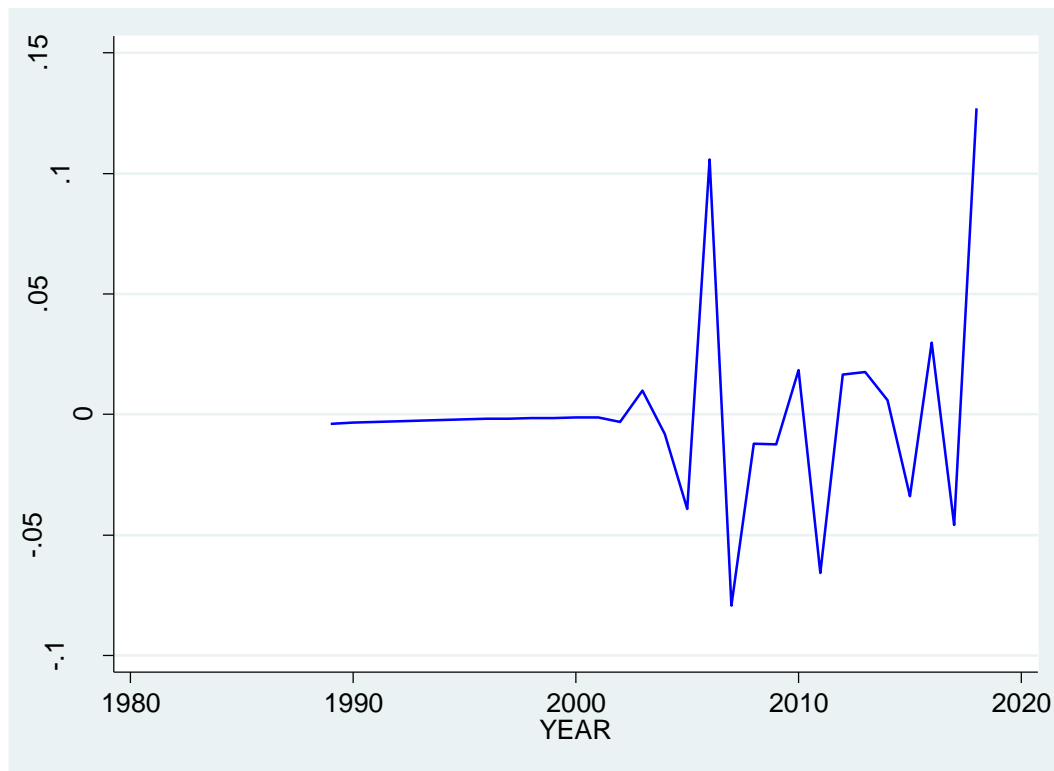The plot of log of HE (lnHE) after second differencing is shown below in figure 4.8

Figure 3: Plot for Log of HE after second differencing

Source: Author (2022)

The second differenced variable was stationary around a trend or mean. The variable HE was integrated of order 2 since it became stationary after being differenced twice.

4.1 Regression results

Table 2: The results of OLS Regression,

The dependent variable is In GDP

Variable	Coefficient	Standard Error	t-value	Probability
In HCE	0.3032228	0.6890811	0.44	0.663

The Durbin Watson of 1.11419 is greater than the values R-Squared R^2=0.0066 and Adjusted R^2=-0.0276 meaning the results can be used for analysis because the problem of correlation has been handled. The coefficient of determination (R2) of 0.0066 means that 0.66 per cent of the variation in the dependent variable, GDP growth rate is explained by the independent variables, health care expenditure. Therefore, it indicates that 99.34 per cent of the variation in GDP growth rate is due to error, other factors were not included in the model.
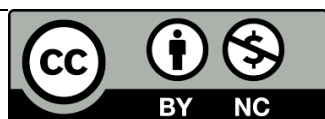
5. CONCLUSION AND POLICY IMPLICATION

From the study findings, this paper concludes that there is no relationship between economic growth and health care expenditure since the coefficient of health care expenditure was insignificant.

This relate with most developing nations like Kenya where healthcare is not much a priory because Kenya has not reached the Abuja declaration of 15%. Recently, there has been major strikes by medical personnel due to low wages and poor medical equipment in the health sector based to inadequate funding hence the disconnect of healthcare expenditure on economic growth. Currently, Kenya spends 6.5 percent of its budget towards health sector and an increase in budget in the health sector will accelerate economic growth because a healthy population which is productive will increase output and hence economic growth.

Assessment of Government Health Expenditure and Economic Growth in Kenya

REFERENCES

1) Anupam Basu, E. C. (2006). Adjustment and Growth in Sub-Saharan Africa. IMF working paper No.99/51. Retrieved from Calamitsis, Evangelos and Basu, Anupam and Ghura, Dhaneshwar, Adjustment and Growth in https://ssrn.com/abstract=880578

2) IMF. (n.d.). Africa Economic Outlook update, 2017.

3) James Murunga, E. G. (2019). Public health spending and health outcome in Kenya. European Scientific Journal

4) Kenya, G. o. (2001). Government of Kenya, Economic Survey, Nairobi: Government Printer.

5) KIPPRA. (2018). KIPPRA Policy Brief.

6) Martin, A. D. (2010). An Econometric Analysis of the US Healthcare Expenditure. Global Journal of Health Science.

7) Mathew, N. (2012). Economic Growth and Public Healthcare Expenditure in Kenya (1982-2012). MPRA PAPER.

8) McDonald, e. a. (2004). Aids and Economic Growth: A Human Capital Approach. Department of Economics, University of Sheffield ISSN 1749-8368.

9) MoH (2010), Public Expenditure Review, Nairobi, Government Printers.

10) Murray C. J. L. R. Govindraj, and Chellaraj, (1993), "Global domestic expenditure on health", the World Bank,Washington D. C.

11) Narayan Sethi, S. ,. (2020). Health Expenditure and Economic Growth Nexus: Empirical evidence from South Asian Countries. Sage Journals.

12) Narayan Sethi, S. ,. (2020). Health Expenditure and Economic Growth Nexus: Empirical evidence from South Asian Countries. Sage Journals.

13) Nganda B. M. and D. O'ongolo (1999), "Public Expenditures on Basic Social Services in Kenya" Consultancy Report prepared for social Dimensions of Development Secretariat, Office of the president, UNDP (Kenya) and UNICEF.

14) Organization for Economic Cooperation and Development. Paris declaration on aid effectiveness. Paris: OECD; 2005

15) Organization for Economic Cooperation and Development. Rome declaration on harmonisation [Internet]. Paris: OECD; 2003 https://www.oecd.org/dac/effectiveness/31451637.pdf

16) Romer, P. (1989). Capital Accumulation in the Theory of the long run.