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The impact of private and public investment on economic growth in Morocco: An empirical analysis

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Abstract

This study examines the impact of employment, private and public investments on Morocco's GDP, highlighting the central role of employment and human capital in economic growth. The empirical analysis reveals that employment is a key indicator, with a strong and consistent positive correlation with GDP, underscoring its importance as a driver of economic growth. Private investment, often associated with improvements in productivity and innovation, is also a significant factor for GDP, while public investment, though beneficial for infrastructure and services, seems to have a less direct effect on immediate economic growth. Human capital, represented by the levels of education and skills within the workforce, shows a strong correlation with GDP, indicating that investment in education and skills development is crucial for long-term economic prosperity. The study observes exponential growth in Morocco's real GDP, particularly notable after the year 2000, a period marked by a revitalization of public investment and a surge in private investment. These changes are the result of significant political reforms and market liberalization, which together have contributed to a profound economic transformation. For policymakers, these findings highlight the importance of strategies aimed at promoting employment and human capital development to ensure sustainable economic growth. They suggest the need to maintain a stable business climate and implement a more effective public investment strategy, oriented towards projects that can stimulate long-term economic growth. Furthermore, they confirm the crucial role of quality education and the alignment of skills with market needs, emphasizing the necessity of educational reforms to align training with labor market demands.

Keywords: Economic growth, Employment, Private investments, Public investments, Human capital.

1. Introduction

While there is a general consensus among economists and policy makers on the crucial importance of investment for economic progress, there is still no agreement on the relative importance of the components of public and private investment for economic growth. Knowing which component of investment best accelerates economic performance has important policy implications in establishing the appropriate economic system that can best grow the economy. This means that it is not just total investment that matters to policy makers, but also how it is split between public investment (gross fixed capital formation by central government, state- owned enterprises and statutory instruments) and private investment (gross fixed capital formation carried out by the private sector).

Although studies on the impact of investment on economic growth are numerous, most of these studies have focused solely on the public investment component or its sub-components (see for example: Aschauer, 1989a; Munnell, 1990; Cullison, 1993; Wylie, 1996; Ramirez and Nazmi, 2003; Pereira and Andraz, 2005). For the few empirical studies that have examined the relative importance of public and private investment on economic growth, contradictory arguments and results have been reported (Crowder and Himarios, 1997; Khan and Kumar, 1997; Nazmi and Ramirez, 1997). Existing empirical studies on the subject show that various studies have focused on different study periods, datasets, investment proxies, countries and country groupings, as well as econometric methodological approaches to examine the relative importance of the roles played by public and private investment in the economic growth process-leading to a mixed set of empirical results. The inconclusive nature of the results makes it difficult to formulate policy recommendations that can be uniformly prescribed to all economies.

The main contribution of the study lies in the dissociation of investment into its public and private components, and in the examination of the relative importance of each component on economic growth. This responds to the shortcomings of most previous studies on the subject, which have focused solely on the effect of the public investment component on economic growth (see Sturm et al., 1996; Romps and De Haan, 2005; Pereira and Andraz, 2013).

The empirical component of this research builds on these theoretical foundations, using econometric models to distil the essence of how investment translates into economic growth. The results echo the complexity and nuances presented in the literature: employment appears to be a primary factor, with its growth showing a strong correlation with GDP growth. Private investment, while influential, is of qualified importance, its impact depending on various economic and institutional factors. Public investment, on the other hand, presents a conundrum: its relationship with GDP growth is less pronounced and, at times, insignificant, which calls into question the conventional wisdom that it has primacy in development.

The remainder of the paper will proceed as follows: section 2 deals with the theoretical framework surrounding public and private investment and economic growth, providing a comprehensive understanding of the interaction between these variables. Following this, Section 3 critically reassesses development strategies, with particular emphasis on a shift towards the market preference in developing countries. Section 4 explores the impact of public and private investment on growth in developing countries, analysing the mechanisms by which such investment influences economic development. Section 5 focuses on data and trends in key variables, providing empirical information on how these factors change over time. Going further, section 6 presents empirical estimates specific to the case of Morocco, highlighting the dynamics of investment and growth in the country context. Section 7 then turns to a discussion, summarising the results and contextualising them within a broader economic discourse. Finally, Section 8 presents the conclusion, offering key insights from the analysis and outlining implications for policy and future research efforts.

2. Public Investment, Private Investment and Economic Growth: A Theoretical Framework

The debate on the relative importance of public and private investment in the economic growth process has generally focused on two somewhat separate but related issues. (i) What is the differential impact of a unit of expenditure on public and private investment on economic growth; and (ii) does public investment expenditure displace or complement private investment in the process of economic growth? This means that the relative impact of public and private investment on economic growth depends largely on whether public investment crowds out or encourages private investment in the economic growth process.

Public investment spending can facilitate the formation of new private capital and thus stimulate economic growth through its impact on private sector economic activity (Eberts and Fogarty, 1987; Merriman, 1990). Public investment in infrastructure projects such as education, electricity generation and transmission, airports, motorways, roads, water supply and sewerage systems often increase the marginal productivity of private capital. The availability of these basic infrastructures reduces the costs faced by private sector companies. This arrangement creates a favourable environment for new private capital formation and output growth.

The catalytic effect of public investment spending on infrastructure on private sector capital formation can alternatively be interpreted in terms of cost adjustment, as postulated by Turnovsky (1996). The presence of a well-developed public infrastructure would reduce the start-up costs of private companies. For example, the presence of a rail network may reduce the cost of

transporting heavy equipment that might be needed to set up a new plant. The private company can continue to benefit from this advantage after the plant has been set up by reducing its marginal unit cost of production through rail transport of bulky raw materials and finished products, for example. As Cohen and Paul (2004) argue, this reduction in the unit cost of production and the resulting increase in the marginal productivity of private capital can be substantial in large economies.

Public investment can also hinder the growth path of private investment and slow economic growth rates when: (i) it is financed by debt; (ii) it produces goods and services in competition with the private sector; and (iii) it is concentrated in heavily subsidised but inefficient industries (Devarajan et al., 1996). The repression hypothesis underlines the need to privatise public enterprises in such sectors and to create a market economy.When increased public sector investment is financed by borrowing on external and internal financial markets, it can ultimately reduce the level of private sector capital formation (Khan and Kumar, 1997). Debt financing of public investment can constrain the growth of private investment through three channels. These are (i) the ensuing debt servicing may imply future tax increases that could reduce the expected return on new private capital. (ii) Debt servicing would also crowd out investable resources that could be made available for new private sector banking projects; and finally, (iii) as Serven and Solimano (1993) have pointed out, debt servicing in the future presents uncertainty for the private sector regarding the policies that might be implemented to raise funds - which could inhibit the formation of new capital. Thus, debt- financed public investment increases the cost of capital and reduces the expected after-tax rate of return on private capital. This slows the rate of growth of new private sector capital and the rate of economic growth.

According to Khan and Kumar (1997), public investment can also crowd out private investment when it produces goods and services in competition with the private sector. This is particularly the case when the state is actively involved in commercial sector projects where the private sector is recognised as being more efficient and has a higher and growing marginal productivity than its counterpart. This economic arrangement would stifle the growth of private investment by displacing it into the product market (Khan and Kumar, 1997).

In relation to the state's involvement in commercial sectors, there is the case where it undertakes projects in subsidised and inefficient industries. The perennial losses that are generally characteristic of these projects mean that the state would continue to provide subsidies to keep them afloat. This diverts investable resources away from more efficient and productive economic activities and, as a result, slows economic growth (Nazmi and Ramirez, 1997).

Table 1: Literature on the impact of public and private investment

Aspect	Public investment	Private Investment	Sources
Impact on economic growth	Can stimulate growth by increasing the marginal productivity of private capital.	Directly linked to increased production and the creation of new capital.	Eberts and Fogarty (1987); Merriman (1990); Cohen and Paul (2004)
Catalytic effect	Facilitates the formation of private capital by reducing initial and operating costs thanks to infrastructures developed.	Depends on the availability and efficiency of public infrastructure.	Turnovsky (1996); Cohen and Paul (2004)
Backflow effect (Crowding Out)	Can slow economic growth if financed by debt, by producing goods/services I competition with the inefficient industries.	Can be squeezed out by public debts that increase the costs and reduce private sector, or concentrated in expected returns.	Devarajan et al (1996); Khan and Kumar (1997); Serven and Solimano (1993)
Debt financing	Increases capital costs, reduces after-tax returns, creates uncertainty for the private sector.	Reduction in the formation of new private capital due to future tax increases and the eviction of investable resources.	Khan and Kumar (1997); Serven and Solimano (1993)
Competition with the private sector	Can crowd out private investment when it produces competing goods and services, particularly in commercial projects where the private sector is more dominant efficient.	Negatively affected by inefficient public competition that diverts resources.	Khan and Kumar (1997)
Inefficient subsidised industries	Ongoing subsidies to maintain inefficient projects, diverting resources from more productive activities.	Private investment limited by the lack of available resources due to the public subsidies.	Nazmi and Ramirez (1997)

Source : authors

In fact, although there is no clear theoretical relationship between public and private investment and economic growth, the net effect of the two components of investment on economic growth remains an empirical question (see table above). If, on the one hand, the substitution effect of public investment for private investment outweighs the complementarity effect, the rate of economic growth will be retarded. However, on the other hand, if the complementarity effect is greater than the substitution effect, the rate of economic growth will accelerate.

3. Revisiting Development Strategies: Towards Market Preference in Developing Countries

The recent economic difficulties faced by many developing countries - widening current account and payments deficits, rising inflation rates, mounting external debts and, perhaps most importantly, falling growth rates that have sharply reduced living standards - have led to a fundamental re-examination of adjustment and development strategies. Specifically, sentiment in the profession and in policy-making circles has turned away from large-scale government intervention and towards greater reliance on the market for t h e allocation and use of resources. As a result, market-oriented reforms are now seen as an integral part of what has become known as growth-oriented adjustment. Conventional wisdom holds that the path to prosperity, represented by a higher rate of sustained economic growth, requires stable and conservative macroeconomic policies, liberalisation of goods and factor markets, greater flexibility in the financial system and a stronger role for the private sector in economic activity.

While the merits of a market-based economic system are well established in some countries, in others theyare not.

Theoretical conditions, much less is known about its empirical relevance in the developing world. Proponents of market-oriented adjustment strategies, which include major multilateral institutions such as the International Monetary Fund and the World Bank, point to the experiences of Korea and some other newly industrialised (Asian) countries, the recent performance of Turkey and Chile at certain periods. In addition, there is a substantial body of literature indicating that trade liberalisation encourages faster economic growth. Moreover, there is some support for a positive relationship between financial development - generally understood as freer interest rates - and growth performance. These relationships are generally seen to operate through increased private savings and investment. However, what is missing from all this discussion is any evidence of the relationship between private sector activity, particularly private investment, and growth in developing countries.

Popular growth models that link the rate of output growth to the rate of capital formation, among other factors such as labour force growth, imported inputs and technical progress, make no distinction between the private and public components of investment. Consequently, it is not possible to determine whether policies aimed at encouraging private investment at the expense of public investment will necessarily help the growth rate. They may well do so if the investment undertaken by the private sector is more efficient and productive, but this judgement has to be based on empirical evidence.

What is surprising is that despite the importance of this relationship for growth-oriented adjustment policies, there is virtually no empirical evidence that can be invoked to support or

refute the idea that private investment is somehow 'better' than public investment for long-term growth. As a result, proposals in favour of the private sector in this particular context appear to be based more on theory than evidence.

4. The impact of public and private investment on growth in developing countries

Investment, whether from the public or private sector, appears to be an essential catalyst for economic growth in developing countries, a subject that is widely studied in academic discourse.

- ***Public investment and economic growth***

Public investment channels resources into critical sectors such as infrastructure, education and health, which are essential for sustainable economic expansion. Ahamed (2021) highlights the significant positive correlation between public investment and economic growth in developing contexts. Analysing data from 39 developing countries covering the period 1990 to 2019, Ahamed's study reveals the consistent role of public investment alongside gross capital formation, labour growth and government final consumption expenditure in driving economic progress. However, concerns are emerging about the effectiveness o f public investment and its potential for crowding out private investment (Ahamed, 2021).

- ***Private investment and economic growth***

Motivated by profit motives and characterised by rigorous cost-benefit analyses, private investment emerges as a powerful force for economic progress. Turan, Yanıkkaya and Özer (2021) argue for the superior growth effects of private investment, especially in the development landscape. Using dynamic panel estimations, their results highlight the substantial positive impacts of both public and private investment on growth, with public investment often exerting a more pronounced influence.

- ***Public or private investment***

The literature presents a mixed picture of the comparative effectiveness of public and private investment in stimulating economic growth. Mofokeng, Alhassan and Zeka (2023) argue for the synergy generated by public-private partnerships, asserting that collaborative efforts between the two sectors hold promise for better growth outcomes in developing economies.

- ***The dilemma facing public decision-makers***

Public and private investment have a considerable influence on economic growth trajectories. Policymakers are called upon to orchestrate an optimal mix of public and private investment, mindful of the imperatives of balance and efficiency in resource allocation (Ahamed, 2021; Turan et al., 2021; Mofokeng et al., 2023). This strategic calibration holds the key to unlocking maximum growth potential and fostering sustainable development in these contexts.

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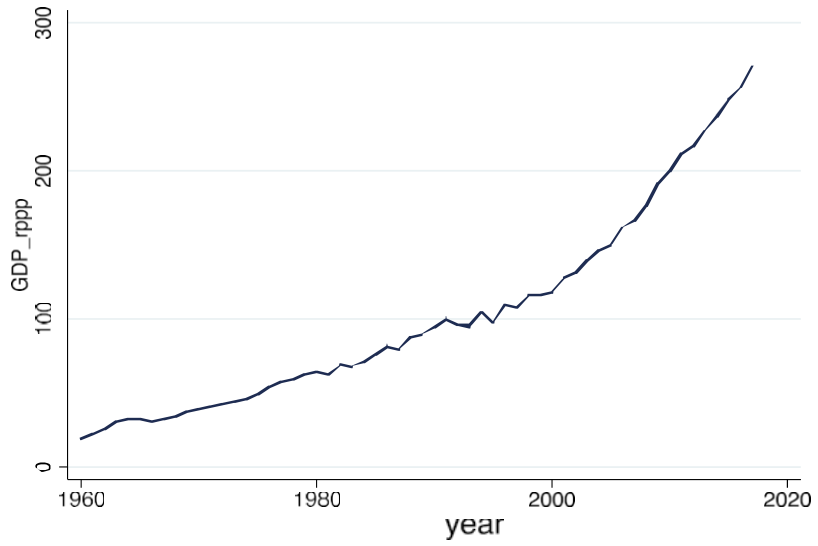
5. Data and trends in the main variables

In what follows, we analyse trends in the main variables used in the empirical strategy. All data from the International Monetary Fund (IMF).

Figure 1: GDP growth in Morocco



Source: author, IMF data

Figure 1 shows Morocco's real GDP from 1960 to 2020, indicating significant and steady economic growth over this period. GDP growth is exponential, especially after 2000, reflecting Morocco's economic development and expansion. This suggests that various economic policies and investments are likely to have contributed to this growth, enhancing the country's economic stability and overall prosperity.

Figure 2: trends in public investment. **Source:** author, IMF data

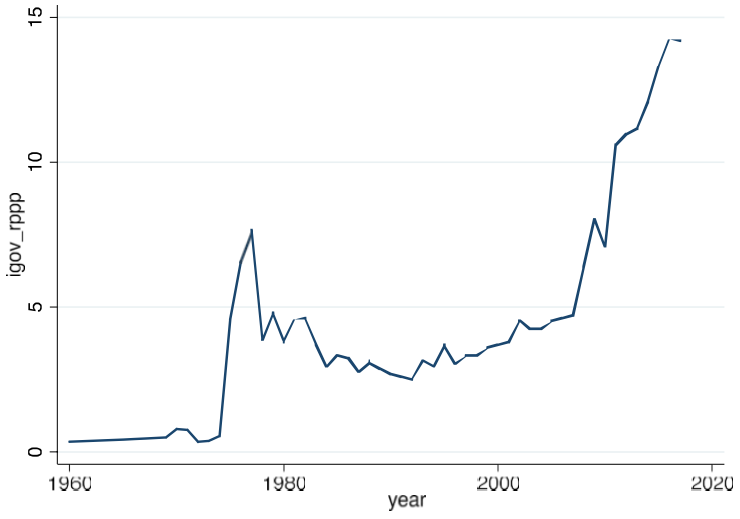


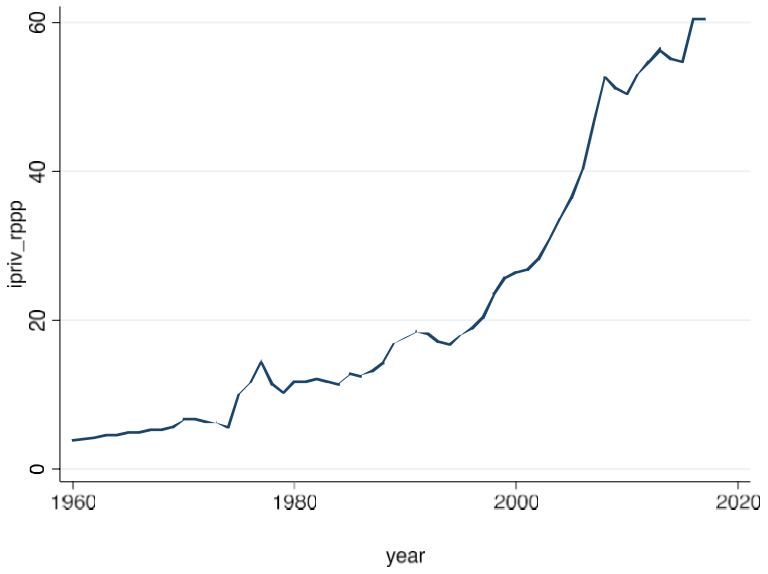
Figure 2 shows the evolution of public investment in Morocco from 1960 to 2020 in billions of dollars.

Table 1: Main trends in public investment in Morocco

Period	Description
1960 à ~1980	There has been a sharp increase in public investment, which could be associated with to the country's efforts to build infrastructure and stimulate economic growth.
~1980 à ~2000	A significant decline followed by a period of stagnation is visible. This could reflect policy changes, economic challenges or changes in investment priorities.
Après 2000	A notable upward trend indicates a resurgence in public investment, perhaps due to renewed interest in development projects or economic reforms.

Source: author

Figure 3: Trends in private investment in Morocco from 1960 to 2020.



Source: author, IMF data

Private investment in Morocco declined during the 1980s. In 2021, private equity investment in Morocco reached a record level, reflecting a growing number of companies receiving investment and a maturing of the sector. The European Investment Bank notes that the emergence of a dynamic private sector in Morocco can boost job creation and economic resilience (European Investment Bank, 2021).

Morocco's real GDP has shown a consistent upward trajectory from 1960 to 2020, signalling sustained long-term economic growth. Notably, there was a significant acceleration in growth rates after 2000, indicating the implementation of impactful economic reforms or increased integration into the global market.

As far as public investment is concerned, trends over the same period show different phases distinct. Initially, there was substantial growth in public investment until around 1980, followed

by a period of decline and stagnation. This change could be attributed to changes in economic policy or to external economic shocks. However, after 2000, there was a resurgence in public investment, suggesting a strategic focus on the development of infrastructure or social services. In contrast, private investment in Morocco showed more modest growth before 2000, indicating a cautious business environment or limited opportunities in the private sector. However, there was a strong increase in private investment after 2000, probably stimulated by improvements in the business climate, economic liberalisation or an increase in foreign direct investment.

Synthesising these trends, Morocco's economic trajectory from 1960 to 2020 reflects a pattern of steadily increasing growth and investment. The turn of the millennium marked a notable change, with both public and private investment growing significantly, in line with the country's efforts to modernise its economy, attract foreign investment and improve its global economic position. These trends underline Morocco's changing economic landscape, characterised by greater openness, diversification and a transition to a more dynamic market economy.

6. Empirical estimates for Morocco

Table 2: The influence of private investment on GDP

Source	SS	df	MS	Number of obs	=	58
				F(1, 56)	=	2099.59
Model	27.4299094	1	27.4299094	Prob > F	=	0.0000
Residual	.731606515	56	.013064402	R-squared	=	0.9740
				Adj R-squared	=	0.9736
Total	28.1615159	57	.494061683	Root MSE	=	.1143

log_gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_ipriv	.8073477	.0176195	45.82	0.000	.7720516	.8426438
_cons	2.182063	.0505852	43.14	0.000	2.080729	2.283397

Source: author's estimate using Stata

As regards the coefficients, the "log_priv" variable has a coefficient of 0.807, with a standard error of 0.018. This coefficient is statistically significant (t = 45.82, P > t = 0.000), indicating a strong relationship between private investment ("log_priv") and GDP ("log_gdp"). In addition, the 95% confidence interval for this coefficient is between 0.772 and 0.843, which reinforces its reliability.

Similarly, the constant term has a value of 2.182, with a standard error of 0.051. This constant term is also statistically significant (t = 43.14, P > t = 0.000), with a 95% confidence interval ranging from 2.081 to 2.283. This underlines the robustness of the model's underpinnings.

The regression model is highly significant and has substantial explanatory power. The two predictor variables, private investment ("log_priv") and GDP ("log_gdp"), show statistically

significant associations. In particular, the coefficient suggests that increases in private investment correspond to proportional expansions in GDP, underlining the positive relationship between these economic variables.

Table 3: The influence of public investment on GDP

Source	SS	df	MS	Number of obs	=	58
				F(1, 56)	=	192.51
Model	21.8154867	1	21.8154867	Prob > F	=	0.0000
Residual	6.34602924	56	.113321951	R-squared	=	0.7747
				Adj R-squared	=	0.7706
Total	28.1615159	57	.494061683	Root MSE	=	.33663

log_gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_igov	.5489148	.0395621	13.87	0.000	.4696624	.6281672
_cons	3.877422	.0578659	67.01	0.000	3.761503	3.993342

Source: author's estimate using Stata

The R-squared value of 0.775 implies that around 77.5% of GDP variability can be elucidated by the model. This substantial proportion underlines the model's effectiveness in elucidating the nuances of GDP fluctuations. The adjusted R-squared value of 0.771 further strengthens confidence in the adequacy of the model, considering the number of predictors and reaffirming its robustness.

In terms of interpreting the coefficients, the coefficient for public investment (log_igov) is 0.549, indicating a significant positive relationship with GDP. Specifically, a 1% increase in public investment is associated with an expected increase in GDP of around 0.55%. Similarly, the highly significant constant term underlines the robustness of the model, suggesting that in the absence of public investment, the logarithm of GDP would be around 3.88.

Table 4: The influence of employment on GDP

Source	SS	df	MS	Number of obs	3008.76
				F(1, 56)	0.0000
Model	27.6469423	1	27.6469423	Prob > F	0.9817
Residual	.514573619	56	.009188815	R-squared	0.9814
				Adj R-squared	
Total	28.1615159	57	.494061683	Root MSE	.09586

log_gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_emp	1.375421	.025075	54.85	0.000	1.325189	1.425652
_cons	2.000845	.0454361	44.04	0.000	1.909825	2.091864

Source: author's estimate using Stata

In addition, the narrow 95% confidence intervals for both public investment and the constant term confirm the accuracy of the estimates and reinforce confidence in the model's predictive

capacity.

Thus, the regression model highlights the central role of public investment as a significant predictor of GDP, with a notable positive effect. The high explanatory power, highlighted by the high R-squared value, associated with the significant F-statistic, reaffirms the fit of the model to the data, thus contributing to our understanding of the economic interaction between public investment and GDP dynamics.

The coefficient on employment (log_emp) is 1.375 and is statistically significant (P>t = 0.000), indicating a robust positive association with GDP. This means that an increase of 1

% increase in employment is correlated with a 1.375% increase in GDP. Indeed, the model highlights that employment is a highly significant predictor of GDP, with a substantial positive impact. The extremely high R-squared value demonstrates that the model elucidates almost all of the variance in GDP, while the significant F-statistic corroborates the excellent fit of the model to the data.

Table 5: The influence of human capital on GDP

Source	SS	df	MS	Number of obs	=	58
				F(1, 56)	=	912.98
Model	26.5339813	1	26.5339813	Prob > F	=	0.0000
Residual	1.62753468	56	.029063119	R-squared	=	0.9422
				Adj R-squared	=	0.9412
Total	28.1615159	57	.494061683	Root MSE	=	.17048

log_gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_hc	3.478933	.1151373	30.22	0.000	3.248285	3.70958
_cons	3.368664	.0406958	82.78	0.000	3.28714	3.450187

Source: author's estimate using Stata

The coefficient on human capital is 3.479, highly significant (P>t = 0.000), indicating a robust positive relationship with GDP. This suggests that a 1% increase in human capital is associated with a 3.479% increase in GDP. The narrow 95% confidence intervals for log_hc and the constant underline the precision of the estimates.

The model highlights that human capital is a very important predictor of GDP, with a substantial positive impact. The high R-squared value suggests that human capital explains a significant part of the variation in GDP, and the significant F-statistic confirms the excellent fit of the model to the data.

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Multiple regression

Table 6: Determinants of GDP

Source	SS	df	MS	Number of obs =	58
				F(4, 53) =	955.78
Model	27.7764515	4	6.94411287	Prob > F =	0.0000
Residual	.38506446	53	.007265367	R-squared =	0.9863
				Adj R-squared =	0.9853
Total	28.1615159	57	.494061683	Root MSE =	.08524

log_gdp	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
log_ipriv	.2286862	.1229192	1.86	0.068	-.0178585	.4752308
log_igov	.0225134	.0338046	0.67	0.508	-.04529	.0903168
log_emp	.823502	.1348131	6.11	0.000	.5531012	1.093903
log_hc	.3355203	.4163721	0.81	0.424	-.4996163	1.170657
_cons	2.214503	.207136	10.69	0.000	1.799041	2.629965

Source: author's estimate using Stata

The inclusion of four predictor variables considerably improves the explanatory power of the model compared to a model without these variables. This suggests that factors such as private investment, government/public investment, employment and human capital play a crucial role in shaping economic output.

Private investment appears to be a potentially influential factor, showing a positive relationship with GDP, even if its importance is marginal. This implies that although increased private investment may contribute to economic growth, this relationship is not firmly established and may be subject to other contextual factors.

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Private investment appears to be a potentially influential factor, showing a positive relationship with GDP, even if its importance is marginal. This implies that although increased private investment may contribute to economic growth, this relationship is not firmly established and may be subject to other contextual factors.

In contrast, government/public investment does not show a statistically significant relationship with GDP. This finding challenge conventional wisdom about the effectiveness of public spending in stimulating economic growth, underlining the need for nuanced policy approaches tailored to specific economic contexts. Employment emerges as the most influential predictor of GDP, demonstrating both a high coefficient and statistical significance. This underlines the

fundamental importance of labour market dynamics in stimulating economic activity and overall prosperity. A robust labour market not only improves consumer spending, but also fosters productivity and innovation, fuelling sustainable economic growth.

Human capital, represented by factors such as education and skills, has a relatively high coefficient but lacks statistical significance in this analysis. Although human capital is widely recognised as a key determinant of long-term economic development, its impact within this specific model remains unclear. Further research may be required to elucidate the complex relationship between human capital accumulation and economic growth.

Indeed, the analysis highlights the multifaceted nature of economic growth and the interaction of various factors that shape GDP dynamics. While employment emerges as the main driver of economic activity, the roles of private investment, government/public investment and human capital warrant further investigation to inform evidence-based policy-making and promote sustainable development.

7. Discussion

Employment systematically shows a strong positive relationship with GDP in the different models. It is the most significant predictor of GDP growth, indicating that an increase in employment is associated with a substantial increase in GDP. Private investment has a positive impact on GDP, but the relationship is not always statistically significant. When it is significant, the effect is positive, suggesting that private investment contributes to GDP growth, albeit to a lesser extent than employment.

The relationship with GDP is weak and often not statistically significant. This suggests that government/public investment may not be a good indicator of GDP in the context of these models. Human capital has a strong positive relationship with GDP. The models generally have high R-squared values, indicating that they explain much of the variability in GDP. The F-statistics are highly significant, confirming the overall significance of the models.

The negative coefficient for human capital in the GDP growth model is counter-intuitive and suggests that there may be measurement problems, omitted variables or other econometric issues that need to be resolved. Employment growth appears to be the most critical factor for GDP and its growth. The impact of private and government/public investment on GDP is less clear and appears to be context dependent.

Conclusion

This work aims to shed light on Morocco's economic trajectory by using empirical analysis to examine the relationship between GDP, employment, and private and public investment. Theoretical frameworks and empirical literature highlight the key roles of human capital and investment in shaping economic outcomes, in particular the robust predictive power of employment on GDP growth.

The empirical results highlight employment as the most significant predictor of GDP growth, systematically demonstrating a strong positive relationship across various models. Similarly, private investment has a positive influence on GDP. In contrast, public investment shows a weak and often insignificant relationship with GDP, indicating limited predictive power in the Moroccan context. Human capital emerges as a critical determinant, maintaining a strong positive correlation with GDP.

Analysis of the main trends in Morocco reveals an exponential increase in real GDP, a resurgence in public investment and a sharp rise in private investment after 2000. These trends signal a crucial change in the country's economic landscape, reflecting major policy reform and market liberalisation efforts.

Morocco's economic evolution demonstrates a robust interaction between employment, investment and GDP growth. Empirical evidence argues for targeted policies that prioritise job creation and skills development, ensuring a resilient and prosperous economic future for the country.

On the basis of the results obtained, it is recommended that Morocco's political decision-makers adopt targeted economic policies. By prioritizing job creation and human capital development, governments can significantly stimulate economic growth. It is essential to invest in programmes to improve access to quality education and to align workers' skills with market needs. In addition, a stable and favorable business environment needs to be maintained to encourage private investment. As far as public investment is concerned, a strategic allocation of resources and improved efficiency are needed to maximize its impact on economic growth.

It is important to recognise that this study has certain limitations. Firstly, the analysis focuses on empirical data specific to the Moroccan economic context and may not be generalisable to other countries or regions. In addition, the results are based on econometric models that may be sensitive to certain assumptions and specifications. Finally, this study has not examined in depth other factors that could influence economic growth, such as global macroeconomic fluctuations or sector-specific policies. These limitations highlight the need for further research to obtain a more complete understanding of the determinants of economic growth in Morocco.

References

Ahamed, F. (2022). *Impact of Public and Private Investments on Economic Growth of Developing Countries* (Doctoral dissertation, Northern Illinois University).

Turan, T., Yanikkaya, H., & Özer, H. A. (2021). Economic growth effects of public and private investment: Evidence from dynamic panel estimation for developed and developing countries. Prague Economic Papers, 30(5), 613-631.

Aschauer, D. (1989a). Is Public Expenditure Productive? Journal of Monetary Economics, 23, pp. 167-200.

Cohen, J.P. & Paul, J.M. (2004). Public Infrastructure Investment, Interstate Spatial Spillovers, and Manufacturing Costs, Review of Economics and Statistics, 86, pp.551-560.

Crowder, W. & Himarios, D. (1997). Balanced Growth and Public Capital: An Empirical Analy[1]sis, Applied Economics, 29(8), pp.1045-1053.

Cullison, W. (1993). Public Investment and Economic Growth", Federal Reserve Bank of Richmond Economic Quarterly, 79(4), pp.19-33.

Devarajan, S., Swaroop, V. & Heng-fuZou (1996). The Composition of Public Expenditure and Economic Growth, Journal of Monetary Economics, 37, pp.313- 344.

Eberts, R. & Fogarty, M. (1987). Estimating the Relationship between Local Public and Private Investment, Working Paper No. 9004, Federal Reserve Bank of Cleveland, Cleveland, May. Accessed 20 November 2015

Khan, M.S. & Kumar, M.S. (1997). Public and Private Investment and the Growth Process in Developing Countries, Oxford Bulletin of Economics and Statistics, 59(1), pp.69-88.

Merriman, D. (1990). Public Capital and Regional Output: Another Look at some Japanese and American Data, Regional Science and Urban Economics, 20(4), pp.437-458.

Mofokeng, M., Alhassan, A. L., & Zeka, B. (2023). Public-private partnerships and economic growth: a sectoral analysis from developing countries. International Journal of Construction Management, 1-9.

Munnell, A. (1992). Policy Watch, Infrastructure Investment and Economic Growth, Journal of Economic Perspectives, 6(4), pp.189-198.

Nazmi, N. & Ramirez, M.D. (1997). Public and Private Investment and Economic Growth in Mexico, Contemporary Economic Policy, 15(1), pp.65-75.

Pereira, A. & Andraz, J. (2005). Public Investment in Transportation Infrastructures and Economic Performance in Portugal, Review of Development Economics, 9(2), pp.177-196.

Pereira, A. & Andraz, J. (2013). On the Economic Effects of Public Infrastructure Investment: A Survey of the International Evidence, Journal of Economic Development, 38(4), 1-37.

Ramirez, M.D. (1996). Public and Private Investment in Mexico and Chile: An Empirical Test of the Complementarity Hypothesis, AEJ, 24(4), pp.301- 320.

Romps, W. & De Haan, J. (2005). Public Capital and Economic Growth: A Critical Survey, European Investment Bank Papers, 10(1), pp.40-70

Serven, L. & Solimano, A. 1993. Economic Adjustment and Investment Performance in Devel[1]oping Countries: The Experience of the 1980s, in Striving for Structural Adjustment: The Role of Capital Formation by Serven, L. and Solimano. A, Eds, The World Bank: Washington D.C., 147-180.

Sturm, J., Kuper, G.H. & De Haan, J. (1996). Modelling Government Investment and Economic Growth on a Macro Level: A Review, Department of Economics, University of Groningen, CCSO Series No. 29. Accessed 12 October 2015

Turnovsky, S.J. (1996). Optimal Tax, Debt and Expenditures Policies in Growing Economy, Journal of Public Economy, 60, pp.21-44.

Wylie, P. (1996). Infrastructure and Canadian Economic Growth 1946- 1991, The Canadian Journal of Economics, 29(1), pp.S350-S355.

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