MEASURING THE EFFECT OF PUBLIC SPORTS SPENDING ON ECONOMIC GROWTH IN MOROCCO

DOI : 10.5281/zenodo.7064944

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SOCIAL AND MEDIA STUDIES INSTITUTE

ISSN : 2820-6991
DEPOT LEGAL: 2022PE0021

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REVUE ECONOMIE ET SOCIETE
N° 2 JUILLET / SEPTEMBRE 2022

ABSTRACT

In this work, we examine the link that may exist between public sports spending and economic growth. In this paper, we adopt time series to measure using Vector Error Correction Models **(VMCE)** by Johansen's one-step approach, the functional relationship between public budget spending on sport and growth in sport. The results of the estimation of the three **VMCE** models, we noted the existence of a long-term relationship between public sports expenditure and the Real Gross Domestic Product **(RGDP)** in Morocco. In fact, general expenses **(DGS),** operations **(DFS)** and investments **(DIS)** in sports have a significant long-term effect on the national RGDP. As for the short-term relationship, we note that all the sports expenditure variables **(DGS, DFS and DIS)** have no significant short-term effect on Moroccan **RGDP.**

Keywords: *Sport Public expenditure, economic growth, GDP, Error Correction Model*

Introduction

After its independence in **1956**, Morocco faced a deteriorating economic situation. But it adopted economic liberalism that is based on private initiative and openness to the outside to start its development.
Morocco has succeeded in unloading attempts at structural adjustment on the ground, reducing the size of public investments and delaying new investments. However, the sports sector was not in favor of these policies. But it was until the year 2000, in the legislative elections (2011**),** that the political parties have brought the sport to their electoral programs whose goal was to achieve strong economic growth with the participation of sports sector.

State sports policies converge on the main objectives set by the public authorities: Give citizens access to a wide range of sports, be among the best in high-level sports, make sport a factor of development, create economic wealth and employment, as well as the welfare benefits and education of those practicing it

To achieve these objectives, the legal and regulatory framework, in particular Law No. 30.09 should be improved by consulting the stakeholders concerned, in order to identify all the factors which currently hamper the implementation process or which pose a problem. Procedural problems, and to develop the information system at national level. We must adopt the support and development of all components of the sports economy and the development of the necessary systems to promote the sports economy.

Morocco is the first country in Africa in terms of investments in sport. The State is a major player in financing and organizing different sports activities. From **2008** to the present day, the state has increased its public sports expenditure to **1,029.957 MAD**[1]**.**

A set of macroeconomic indicators are significantly lower generating a ranking among the world's least developed countries with a **GDP** per capita that has risen to **30,509** dirham in **2017** and **HDI 0.67** to occupy the **123** th rank in the World (IMF, April 2019).

However, the most pressing concerns in terms of health, education and food security, the interest of public authorities underlines the importance of knowing whether public sports expenditure plays a " productive " role in economic growth and the creation of jobs in Morocco.

The goal of this work is to research and verify the relationship between public sports spending and economic growth in Morocco over the period **1990** to **2017**. In order to carry out this study, we will present a methodology using econometrics on time series. To analyze in a direct way the resources of the State to the sport sector in the form of two categories of expenditure important for the improvement of sport in Morocco:

- **The expenditure on human capital (Romer, 1986; Lucas 1988)** ;
- **Investment in public infrastructure capital (Barro, 1990)**.

[1] AFD, (2021), « économie de sport au Maroc : Un potentiel sous-exploité» webinaire

I. PROOF OF THE PRODUCTIVITY OF PUBLIC SPORTS SPENDING - DEFINITION OF CONCEPTS

As part of our analysis is based on a different set of work of economists researchers have developed models economic **(Romer, Mankiw and Weil 1992),** whose study was focused on the study of the function of **C OBB -** Douglas. The latter highlighted the relationship of public spending and increased economic growth in human capital. In this article we will we focus on an explanation of spending on human capital and public infrastructure capital filled in the field of sport, and that in order to measure its impact on the economic growth of Morocco .

1-1. The Human Capital

According to the new theories of economic growth, with which the names of Romer **(1986),** Lucas **(1988)** and Barro **(1996)** are associated, human capital is a determining factor of economic growth . Human capital is usually managed by the human resources **(HR)** department of an organization. This ministry oversees the acquisition, management and optimization of workforce. Its other guidelines include workforce planning and strategy, recruiting, training and development of employees, as well as reporting and analysis.

1-2. Public infrastructure capital

Public capital is the set of government owned goods that are used as a means of productivity. These assets cover a wide range of components, including highways, airports, roads, mass transit systems and railways ; local and municipal components, such as public education, public hospitals, police and fire protection. Jails and courts; and essentials, including water and sewer systems, electric utilities, gas and telecommunications. Often, public capital is defined as being government spending, in terms of money, and as physical stock, according Tatom **(1993: 391)** in terms of social infrastructure is equally important

1-3. Public spending

It refers to the sums committed by the State, Social Security, collective territorials and by all the organizations attached to them. Financed by compulsory deductions **(taxes, duties and social contributions)**, by own resources **(dividends from public companies, income from fines, income from lottery companies, etc.)** and by loans, they constitute the main instrument of collective action.

1-4. Economic Growth

Economic growth is a quantitative phenomenon. It is defined according to François Perroux, as " the sustained increase during one or more long periods of a dimension indicator, for a nation, the net global product in real terms " It represents the increase of wealth, expressed in monetary form . Growth is measured by the increase in **GDP (Gross Domestic Product).**

II. REVIEW OF LITERATURE

Since the work of classical economists (Smith**, (1776);** Ricardo, **(1817);** Malthus, **(1920); etc.),** the economic literature has considered that the quality of the workforce plays an important role in competitiveness and long-term growth.

Schultz's Work (TW , 1975) and Becker (GS, 1994) consider that human capital is like physical capital and one can invest in this sector through education, health and training in order to increase production and contribute to economic growth. In short, the accumulation of human capital is an instrument for improving productivity.

In the same vein, (Denison, 1964)in his research to determine the main explanatory factors of growth in the United States, found that a high value of total factor productivity is explained by the improvement in the quality of the labor force. Work, which in turn results from an increase in the level of education.

Frankel (M, 19662) underlined that the product per capita increases in a regular way and this is explained by the contribution of different factors such as technological evolution, improvement in the organization and improvement of the human factor.

Other works which have been interested in the theories of endogenous growth such as those initiated by Romer **(1986)** Lucas **(1988)** provide models making it possible to determine the fundamentals of long-term growth (Rizlane & Hanane , 6 JUIN 2016).

They analyzed the impact of human capital accumulation on long-term growth. Romer**, (1990);** Grossman and Helpman (G & E, 1991) develop a new analysis of the relationship between human capital and growth by proposing growth models based on research and development. From this perspective, the contribution of human capital to growth requires technical progress and innovation, thus allowing the emergence of new products and markets.

In the same context, Mankiw (NG, D, & DN , 1991); Barro **(2001),** point out that human capital is recognized as one of the main determinants of economic growth. In addition, it is considered a key element in enhancing the effect of other fundamentals of economic growth such as investment in Romer technology **(1990)** ; A ghion and Howitt (P , 1998). For his part, Fogel (R F. , 2004) has shown that a sustained increase in production in some economies is conditioned by an increase in the level of education of their labor force.

Bergheim (Bergheim , 2005), considered that education, as an important factor of human capital affects growth through various channels. It contributes to increasing knowledge and improving learning abilities. This makes it possible to produce more in less time. And it is recognized that increasing education especially among women improves their participation in the economy, which positively contributes to growth due to a higher labor force participation rate. These studies also explain that the more a worker practices a sport on a regular basis, the more his productivity also increases.

In a market economy, it is quite clear that citizens practicing sports activity either to improve their physical condition or with the aim of improving their financial source,

The latter can be justified if the adjustment of the profits obtained from this activity is significant at the prices of choice expenses. This is justified by a sports offer **(supply)** function established as follows:

$$y_i = \beta_0 + \beta_1 x_i + \beta_2 x_j (1)$$

$$Avec \quad \beta_1 > 0 \ et \ \beta_2 < 0$$

Where y_*i*: number of people who practice sport *i*

x_*i*: income that an individual who practices sport *i* expected

x_*j*: alternative income from other activities *j*=1, 2.... n

This analysis is based on two hypotheses; on the one hand, the only gain associated with sporting activity comes from the expected income in a type of sport. On the other hand if leisure sports are taken into consideration then the organization of the very celebrated championships in soccer ball for example.

In a market economy, the State can intervene in the sense of improving the allocation of rents in the form of subsidies to administrations **(federations, leagues),** or direct scholarships to high-level players, with the aim of influencing the offer function.

In all the works that treat the theory of efficiency wages charged and bonuses for top players form of wages, which was verified by P.Bouvet **(1996),** JWHarder **(1996)** , the latter could not succeed in reformulating a relationship between the formation of human capital, productivity and wages by a remarkable econometric model following Baade **(1996)** ; Baade and Day **(1990)** ; Baade and Sanderson **(1997)** were able to summarize them in two kinds :

Impact of sports infrastructures on production this is verified by an econometric model Baade and Day **(1990)** took a sample of nine cities in the USA between 1965 and 1983. The results show that the existence of a stadium has a positive impact on the economic activity of a city.

The impact of sports infrastructures on employment reveals results similar to those obtained in terms of the impact of sports infrastructures on production. Baid and Sunderson **(1997)** estimated the impact of infrastructure and clubs on employment in the sports entertainment industry in ten cities from **1958** to **1987**. The increase in the number of professional hospitality teams resulted in th e creation of 'jobs in the sectors mentioned, with the exception of the three cities in the sample.

III. EMPIRICAL RESEARCH: CASE OF MOROCCO

3.1. Model specification and data presentation

3.1.1. Analytical framework

The analytical framework is inspired by the work of Romer, Mankiw and Weil **(1992).** They used Cobb-Douglas type product functions in their research and enriched them with human capital, thus using the following model to simulate the relationship between public expenditure and the growth relationship:

$$\boldsymbol{Y(t) = \left(K(t), A(t)L(t)\right)} \qquad \boldsymbol{(1)}$$

Where, t corresponds to time, **Y:** Production, **K:** Capital**, L:** Labor,

A: Technological progress.

In the case of our work, the model takes the following form:

$$\boldsymbol{Y_t = \alpha + \beta K_t + \gamma L_t + \varepsilon_t} \qquad \boldsymbol{(2)}$$

K : the production function **(real GDP)**

K : capital stock

L : socio-political variables

t : time

$\boldsymbol{\varepsilon_t}$ **:** A disturbance or a random term to capture the likely errors disrupting measures of economic variables K and L

3.1.2. Model specification

In order to empirically test the causal relationship between public expenditure devoted to sport in Morocco and economic growth through the chronological series obtained from **1990** to **2017**, we propose the following method: The descriptive analysis makes it possible to show the evolution of budgets, sports

expenditure, audiences and econometrics. The scientific analysis will take place in three stages: single root test, Johansen set test and Granger causality test under the d-correction vector model fault. The software used is **EVIEWS 10.**

Data on public expenditure come from the Haut-Commissariat au Plan **(HCP).** These public expendsitures fo r the period **1990-2017** come from archived documents from various finance laws corresponding to this period. We have data provided by the HCP under three categories : general sports expenditure, sports operating expenditure, and sports investment expenditure .

Other data sources related to population **(POP),** real **GDP (RGDP)** and purchasing power parity **(PPP)** per capita **(PIBH).** Human Development Index **(HDI)** data is taken from the Perspective **HCP** database, the report is taken from the World Bank Statistical Table. The labor force- related population **(POPACT)** is taken from World Bank demographic data compiled by the International Labor Organization **(ILO).**

In order to explain these variables, we will use the following explanatory variables, which are specified in the table below:

Table 1: specification of variables

SPECIFICITY VARIABLES	IN LOGARITHM	EQUATIONS
GENERAL BUDGET (BGEN)	General State Budget	
SPORT BUDGET (BSPORT)	Share of the sports budget in public expenditure	
BUDGET OPERATION (BFSPORT)	Share of ordinary expenditure in the sports budget	
BUDGET INVESTMENT (BISPORT)	Share of expenditure investment in the b udget sports	
DOMESTIC PRODUCT GROSS (GDP)	per capita income or per capita standard of living .	
POPULATION (POP)	allows to account for the exponential evolution of the population.	
INDEX OF DEVELOPMENT HUMAN (HDI)	Precise indicator that classifies countries by degree of development.	
ACTIVE POPULATION TOTAL (POPAT)	Value of labor power, total in Morocco	

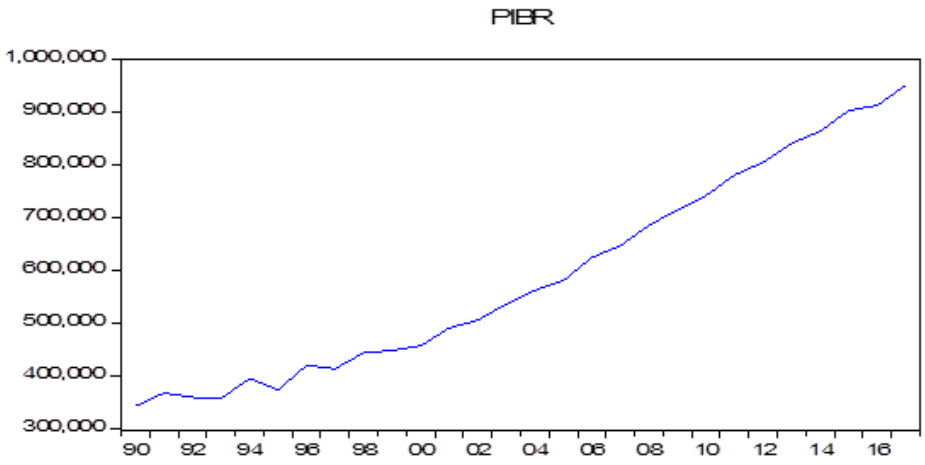
(Source: the author)

3.1.3. Descriptive analysis

In this study, the data will be annual and combl ing the period **1990 - 2017**. Following the literature, we use the logarithm of real **GDP** and the share of the sports budget in public expenditure.

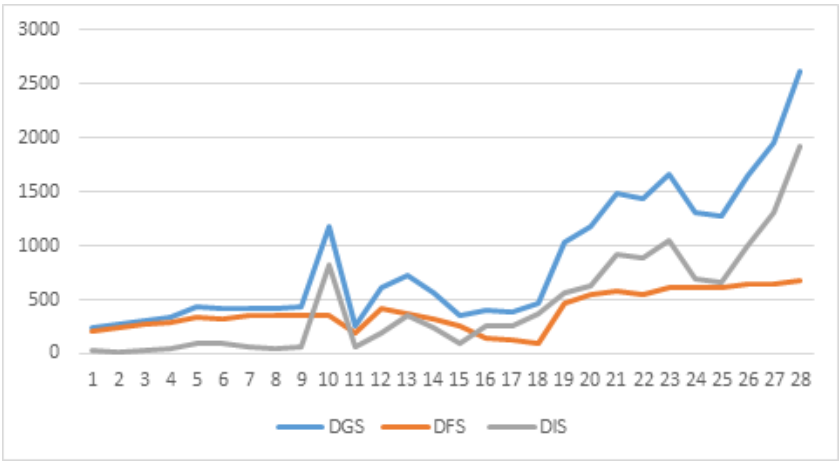
These data result come from national accounts of the High Commissioner for Planning **(HCP),** the ministry of finance, and banking world. To better analyze the evolution over time of these variables, it is necessary to represent their series in order to distinguish their different phases.

Figure 1: Evolution of real gross domestic product (RGDP)



(Source: Our calculations)

Figure 2: Evolution of general sports expenditure



(Source: Our calculations)

3.2. Analysis and discussion of results

We propose to verify the productive role of public investment in sport in the context of Morocco Global and individual components **(general and investment expenses).** For this, the following models can be used:

$$Y_t = \alpha + \beta K_t + \gamma L_t + \varepsilon_t$$

Where **Y** is the production function **(real GDP),** K is the capital stock, **L** the other social and political variables and t the description of time. We introduce a perturbation **(ε)** in the relation to take into account all the factors. In addition to the variables considered to have some impact

on production, we estimate the following three models:

Table 2: Presentation of models

	Model	Description
1	$YPIB_t = \alpha_0 + \alpha_1 LogBS_t + \alpha_2 LogPOPACT_t + \alpha_3 IDH_t + \varepsilon_t$	This model shows the impact of total public spending on sport on economic growth
2	$YPIB_t = \alpha_0 + \alpha_1 LogBFS_t + \alpha_2 LogPOPACT_t + \alpha_3 IDH_t + \varepsilon_t$	This model emphasizes the impact of general components of sports spending on economic growth
3	$YPIB_t = \alpha_0 + \alpha_1 LogBIS_t + \alpha_2 LogPOPACT_t + \alpha_3 IDH_t + \varepsilon_t$	This model aims to reveal the impact of public investment spending in the sports sector on economic growth

3.2.1. Study of the stationarity of series: Unit root tests

Before starting econometric modeling, it is important to remember to analyze the stationarity of the proposed data set . It is a prerequisite for any econometric analysis, in particular when it comes to macroeconomic or financial data. Currently, this analysis is strongly recommended, because if the variables are not fixed, there will be a false regression problem. To this end, we use the most unit root tests recommended, the simplest is the amelioration Dickey-Fuller **(ADF test).**

The test has become the subject of numerous conferences in the Experiential literature, no formal introduction here . Recall that the **ADF** test only considers the existence of an autocorrelation in the sequence and that the null hypothesis is that there is a unit root.

For the series to be considered stationary, the reported statistics must be less than the critical value. The results of these tests are summarized in the table below.

Table 2: ADF stationarity tests Results

Variables	ADF in level	ADF in First Difference
RGDP	-0.671 (0.963)	-11.534 (0.000)
BS	-3.629 (0.0659)	-7.969 (0.000)
BFS	-2.389 (0.376)	-5.616 (0.0006)
BIS	-5.687 (0.077)	-5.259 (0.0015)
HDI	-1.520 (0.797)	-6.958 (0.000)
POP ACT	3.318 (1,000)	-3.682 (0.042)

(Source: Our calculations)

Note that the results obtained indicate that not all the series are stationary at the **5%** threshold. We then carried out the **ADF** test on the variables in first difference. The **ADF** statistics for seven variables are below the critical values **(CV)** at the **5%** threshold. This allows us to reject the null hypothesis of existence of a unit root, to consider that the series are stationary in first difference and all integrated of the same order 1. This leads us to retain the possibility of a relation of co- integration between variables **(Engel and Granger, 1987).** We will try to analyze the relationship between sports public spending and economic growth after checking if the regression of the integrated variables of the same I **(1)** do not result in a spurious regression.

3.2.2. Test Cointegration Johansen

The analysis of the cointegration between integrated variables of order one makes it possible to highlight the existence or not of a long-term relationship. We will examine cointegration using the Johansen **(1988)** cointegration test procedure, which is often used in econometrics work when the number of variables exceeds two. The result of the cointegration test is summarized in the table below:

Table 3: Results of the test of C o - Johansen integration (Model 1)

Hypothesized No. of CE (s)	*Eigenvalue*	*Trace Statistic*	*0.05 Critical Value*	*Prob ***
None *	0.769244	74.91040	47.85613	0.0000
At most 1 *	0.538331	36.78411	29.79707	0.0067
At most 2 *	0.321345	16.68852	15.49471	0.0329
At most 3 *	0.224482	6.609828	3.841466	0.0101

(Source: Our calculations)

Table 3: Results of the test of Co - Johansen integration (Model 2)

Hypothesized No. of CE (s)	*Eigenvalue*	*Trace Statistic*	*0.05 Critical Value*	*Prob ***
None *	0.714852	68.08963	47.85613	0.0002
At most 1 *	0.514385	35.46622	29.79707	0.0100
At most 2 *	0.281609	16.68538	15.49471	0.0330
At most 3 *	0.267289	8.086109	3.841466	0.0045

(Source: our calculations)

Table 3: Co test - Johansen integration reported results (Model 3)

Hypothesized No. of CE (s)	*Eigenvalue*	*Trace Statistic*	*0.05 Critical Value*	*Prob ***
None *	0.787867	87.78855	47.85613	0.0000
At most 1 *	0.593069	47.47447	29.79707	0.0002
At most 2 *	0.509098	24.09754	15.49471	0.0020
At most 3 *	0.193715	5.598258	3.841466	0.0180

Source: our calculations

There is Co-integration because:

- The null hypothesis of no Cointegration was rejected because their T race Statistics is greater than the value Critical threshold of **5%;**
- The null hypothesis according to which there are 4 relations of C o - integration was accepted because their Statistical Trace is much lower than the critical value at the 5% threshold.

So we note that, for all the specifications (variants with or without constants) of the three models, there are 4 long-term Co-integration relations.

3.2.3. Error correction model

The relationship of C o-integration we have identified can be used to estimate dynamic models error correction. By applying Johansen's methodology we estimate a **VMCE (1)** model with our four variables. First, we opt for an aggregate estimate, at which we study the impact of general sports spending on real national **GDP**. Second, we disaggregate general spending into operating and investment spending to estimate their impacts on real national **GDP.**

In what follows we present the results of the three models estimated in the context of this study.

3.2.4. Model 1: Determination of the long-term relationship

Table 4: Results of the VECM model and long-term relationship

	COEFFICIENT	*STD. ERROR*	*T-STATISTIC*	*PROB.*
C (1)	-0.473462	0.178578	-2.651290	0.0162
C (2)	0.330087	0.348716	0.946578	0.3564
C (3)	0.884080	0.820294	1.077760	0.2954
C (4)	-0.463542	0.154540	-2.999494	0.0077
C (5)	0.050281	1.053653	0.047721	0.9625
C (6)	-1.838638	0.723772	-2.540356	0.0205
C (7)	-0.006189	0.010122	-0.611455	0.5485
C (8)	0.078979	0.019530	4,043906	0.0008
R-SQUARED	0.812408	**Mean dependent var**		0.036447
ADJUSTED R-SQUARED	0.739456	**SD dependent var**		0.036803
SE OF REGRESSION	0.018786	**Akaike info criterion**		-4.863794
SUM SQUARED RESID	0.006352	**Schwarz criterion**		-4.476688
LOG LIKELIHOOD	71.22933	**Hannan-Quinn criter.**		-4.752322
F-STATISTIC	11.13613	**Durbin-Watson stat**		2.630393
PROB (F-STATISTIC)	0.000021			

(Source: Our calculations)

From the table, we see that the coefficient **C (1)** is negative and significant, which shows the existence of a long-term relationship between the model variables. Suddenly, we can say that general sports expenses have a long-term effect on the national **GDP.**

The model has a good quality of adjustment since **81. 2 %** of the variability of the Real **GDP** is explained by the model. Thus the statistic of **DW = 2.63** indicates the non-autocorrelation of the residues.

3.2.5. Of the short-term relationship

Table 5: Wald test Results of the short run relationship

Coefficient	*Value*	*Prob*
C (5) DGS	-0.611455	0.5485
C (6) HDI	-2.540356	0.0205
C (7) POP_ACT	0.047721	0.9625

(Source: Our calculations)

It can be seen that the coefficient **C (6)** corresponding to the general sports expenditure variable is quite significant at the **5%** level, while the coefficients associated with the other explanatory variables are not significant. This implies the existence of a short run relationship between the **RGDP** and the general expenditure of Sport.

3.2.6. Model 2: Determination of the long-term relationship

Table 6: Results of the VECM model and long-term relationship

	Coefficient	*Std. Error*	*t-Statistic*	*Prob.*
C (1)	-0.667596	0.192348	-3.470771	0.0027
C (2)	1.649601	0.932546	1.768922	0.0938
C (3)	0.012673	0.002408	5.263793	0.0001
C (4)	-0.393964	0.138379	-2.846997	0.0107
C (5)	-2.328559	0.685238	-3.398177	0.0032
C (6)	0.005954	0.010393	0.572888	0.5738
C (7)	0.175772	1.027577	0.171055	0.8661
C (8)	0.080169	0.019130	4.190688	0.0005
R-squared	0.815123	**Mean dependent var**		0.036447
Adjusted R-squared	0.743226	**SD dependent var**		0.036803
SE of regression	0.018649	**Akaike info criterion**		-4.87837
Sum squared resid	0.006260	**Schwarz criterion**		-4.49126
Log likelihood	71.41884	**Hannan-Quinn criter.**		-4.76690
F-statistic	11.33742	**Durbin-Watson stat**		2.49348
Prob (F-statistic)	0.000018			

(Source: our calculations)

The first observation that can be made is that the coefficient **C (1)** is negative and significant, which shows the existence of a long-term relationship between the variables of the model. Suddenly, we can say that the operating expenses of Sport have a long-term effect on the national **RGDP.**

The model has a good fit since **the model explains 81.5% of the variability of RPIB**. Thus the statistic of **DW = 2.49** indicates the non-autocorrelation of the residuals.

3.2.7. Determination of the short-term relationship

Table 7: Wald test results for short run relationship

COEFFICIENT	*VALUE*	*PROB*
C (5) DFS	0.572	0.5738
C (6) HDI	-3.398	0.0032
C (7) POP_ACT	0.171	0.8661

Source: Our calculations

It can be seen that the coefficient **C (6)** corresponding to the operating expenditure variable for Sport is very significant at the **1%** threshold, so the coefficients associated with the explanatory variables are not significant. This implies the existence of a short run relationship between the **RGDP** and the operating expenses of Sport.

3.2.8. Model 3: Determination of the long-term relationship

Table 8: Results of the VECM model and long-term relationship

	Coefficient	*Std. Error*	*t-Statistic*	*Prob.*
C (1)	-0.460157	0.114879	-4.005583	0.0008
C (2)	0.775210	0.654736	1.184004	0.2518
C (3)	0.005864	0.011039	0.531215	0.6018
C (4)	-0.487496	0.133055	-3.663854	0.0018
C (5)	-1.777701	0.647791	-2.744251	0.0133
C (6)	-0.007043	0.006905	-1.019984	0.3213
C (7)	-0.161085	1.052217	-0.153091	0.8800
C (8)	0.083277	0.019537	4.262485	0.0005
R-squared	0.821447	**Mean dependent var**		0.036447
Adjusted R-squared	0.752010	**SD dependent var**		0.036803
SE of regression	0.018327	**Akaike info criterion**		-4.91317
Sum squared resid	0.006046	**Schwarz criterion**		-4.52607
Log likelihood	71.87133	**Hannan-Quinn criter.**		-4.80170
F-statistic	11.83007	**Durbin-Watson stat**		2.63365
Prob (F-statistic)	0.000014			

Source: our calculations

From the table, we see that the coefficient **C (1)** is negative and significant, which shows the existence of a long-term relationship between the model variables. Suddenly, we can say that sports investment spending has a long-term effect on the national **RGDP.**

The model has good quality of adjustment since **the model explains 82.1% of the variability of the RGDP**. Thus the statistic of **DW = 2.633** indicates the non-autocorrelation of the residuals.

3.2.9. Determination of the short-term relationship

Table 9: test Wald of the short-term relationship

Coefficient	*Value*	*Prob*
C (5)	**-1.019984**	**0.3213**
C (6)	**-2.744251**	**0.0133**
C (7)	**-0.153091**	**0.8800**

(Source: our calculations)

It can be seen that the coefficient **C (6)** corresponding to the sports investment expenditure variable is very significant at the **1%** threshold, so the coefficients associated with the explanatory variables are not significant. This implies the existence of a short run relationship between the **RGDP** and the investment expenditure of Sport.

CONCLUSION

This study aimed to study the impact of public sports spending on economic growth in Morocco from the perspective of their productive efficiency.

The methodology followed for the statistical estimations is based on a three-step approach: the unit root test, the Johansen cointegration test and estimation of the **VMCE** model.

According to The results of the estimate of the three models **VMCE**, we found the existence of a long-term relationship between the sporting public expenditure and Gross Domestic Product Real in Morocco. Indeed, are Genera Expenses of operations and Investment's sports have an effect significant long term on the National?

As for the short run relationship, we notice that all the variables of sports expenditure have no significant short-term effect on Moroccan. These results can be explained by the fact that the budget of the Department of Youth and Sports is characterized by its weakness in relative terms, since its share has fluctuated, since **1990**, between **0.22%** and **0.83% (2009**.

This situation has hardly changed in substance, making the Ministry of Youth and Sport one of the poor relations of the General State Budget. This has repercussions on the quality of all initiatives taken by the State in favor of public sports policies. Suddenly, public decision-makers are called upon to implement the sports budgetary policies necessary for the establishment of infrastructure, organization, training of human resources, and the adoption of a transversal mode of coordination. Between local, regional and national structures.

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