International Relations and Diplomacy, December 2019, Vol. 7, No.12, 592-600
doi: 10.17265/2328-2134/2019.12.004

Public Investments as a Development Tool

Vassiliki Delitheou
Panteion University, Athens, Greece
Maria Vinieratou-Bosinaki
University of Peloponnese, Tripoli, Greece
Constantinos GE. Athanassopoulos
Neapolis University Pafos, Pafos, Cyprus

The role of public investment and its substantial contribution to economic growth and the quality of life of citizens is now being reaffirmed internationally, creating a trend towards enhancing the relative public spending. This paper analyses this role at international and European level, while it examines especially the case of Greece; having undergone a significant period of shrinkage over the years of the memorandums, the Public Investment Program (PIP) has again shown a tendency to increase its resources and its importance. Greece makes an important reform effort, which must take into account that, in order to keep track of current global trends and prospects, Public Investment Programs are now called for to be reconciled with new development models as well as new, internationally accepted rules of proper governance and financial management. In this context, they should also act as catalysts for further supporting and strengthening private investment.

Keywords: development, investment, public management, economic growth, life quality

Public Investments and Their Contribution to Growth in General

According to one of the most prevalent definitions, found both in the literature and in the Eurostat working papers, public investment is defined as total gross fixed capital formation, carried out by General Government entities (Mehrotra & Välilä, 2006, pp. 450-452). Also, public investment is considered to be all fixed and intangible investment activities of the state, which, in the context of the investment and economic and development policies pursued, aim at redistributing the national income before the benefit of society as a whole.

Internationally, there are four broad categories of public investments:

- Infrastructures, including transport and communications networks,
- Investments in human resources, particularly in the fields of education and training,
- Investments in technological progress, particularly in terms of research,
- Equipments and capital goods.

Vassiliki Delitheou, Ph.D., Permanent Assistant Professor, Department of Economic and Regional Development, Panteion University, Athens, Greece.
Maria Vinieratou-Bosinaki, Ph.D., Department of History, Archaeology and Cultural Resources Management, University of Peloponnese, Tripoli, Greece.
Constantinos GE. Athanassopoulos, Ph.D., President of the School of Law, Neapolis University Pafos, Pafos, Cyprus.

Based on the above distinction, some authors call them “hard” public investments, those involving the formation of infrastructure and capital, while in “soft” public investment, they include all kinds of expenditures mainly related to human resources, such as spending on education, research and development (R & D), active employment policies, and family support (Streeck & Mertens, 2011, pp. 1-4).

If appropriate and feasible, public investment is implemented through public-private partnerships.

Naturally, public investment does not produce both immediate, long-term benefits across the economy. Their return is often difficult to identify, and is determined only in more general terms, through socio-economic research and cost-benefit analysis. This is all the more true in the case of investment in human capital.

However, it is generally accepted that public investment is directly linked to the capacity of an economy. Typically, without roads, communication networks and energy supplies, processes and activities of production and trade would be impossible to implement (Lloyd, 1999, pp. 27-32).

It is considered by most scholars that public investment does not compete with the private sector but, on the contrary, it is an important factor in increasing the size and efficiency of private investment. In many cases, modern Public Investment Programs (PIPs) are used targeted, in a way that helps stimulate private business by enhancing and/or providing new growth incentives, particularly in areas such as creating a whole infrastructure, the development of the workforce, the minimization of business risks. In this respect, several targeted public investments can be “correlated” with categories of incentives. Development incentives are one of the “tools” that governments use to “generate” growth through, e.g., attracting private investment. Development incentives are used to curb those factors that run counter to the intentions of private investors to undertake a new business initiative, either due to a lack of sufficient funds or a lack of integrated infrastructure in a region or a lack of skilled workforce, fears for low profitability of the funds to be invested, etc. (Marmatakis, 1969, pp. 320-330). Development incentives, without altering free market mechanisms, aim at stimulating private business or even orienting it towards desired directions and areas, e.g., to agriculture, to industry, etc., either to reduce the cost of installation, or to produce the good, to minimize risk (Delitheou, 2018, pp. 211-215). Development incentives are such as:

- Macro-incentives,
- Incentives to attract foreign investors,
- Incentives to move investors from region to region within the same country,
- Incentives to assist export,
- Labor mobility incentives.

Over time, studies carried out by international organizations, public and private bodies and research institutions in Europe, America, and elsewhere have demonstrated the contribution of public investment to increasing marginal productivity in the private sector, reducing the start-up, and running costs of businesses and the formation of capital. Indicative is the following table, which summarizes the main conclusion of a series of relevant studies.

Table 1

Empirical Studies on the Impact of Public Investment on Private Investment and Growth (Makuyana & Odhiambo, 2016)

Author(s)	Region/country and sample period	Model specification	Conclusion
Aaron (1990)	USA 1951-1985	Cobb Douglas	Public capital had a positive impact on output.
Aschauer (1989a)	USA 1949-1985	Cobb Douglas	Public investment is beneficial to economic growth process.
Aubyn and Afonso (2008)	Sample of European countries plus Japan, Canada, and USA	Vector Autoregressive (VAR)	Both public and private investments are crucial to growth.
Batina (1998)	USA 1948-1993	Cobb Douglas	Output growth responded differently to the various proxies of public and private investment.
Crowder and Himarios (1997)	USA 1947-1989	Vector Error Correction Model (VECM)	Public capital is more important to economic growth than private investment.
Cullison (1993)	USA 1961-1991	VAR	Public investment in education is more important to growth than in physical capital.
Evans and Karras (1994)	USA 1970-1986	Cobb Douglas	Public capital exerts negative impact on output.
Lighthart (2000)	Portugal 1965-1995	Cobb Douglas	Public capital had positive and significant impact on output.
Lynde (1992)	USA 1958-1988	Cobb Douglas	Profit increases with respect to public capital increases.
Lynde and Richmond (1991)	USA 1958-1989	Translog cost function	Public investment important in cost saving and it complements private capital.
Lynde and Richmond (1993)	USA 1958-1989	Translog profit function	Public capital is significant to output growth and productivity.
Munnell (1990)	7 OECD countries 1963-1988	Cobb Douglas	Public investment in core infrastructure is crucial to growth.
Pereira (2001a)	USA 34 observations	VAR	Public investment stimulates private investment and growth.
Pereira (2001b)	11 countries 1960-1990	VAR	Public investment spurs private sector output.
Ram and Ramsey (1989)	USA 1949-1985	Cobb Douglas	Total public capital is significant to output.
Sturm et al. (1996)	Netherlands 1853-1913	VAR	Public investment is significantly important to output growth.
Tatom (1991)	USA 1949-1989	Cobb Douglas	Public capital not important to economic growth.
Vijverberg et al. (1997)	USA 1958-1989	Cobb Douglas	The results were inconclusive owing to the presence of multicollinearity.
Yang (2006)	USA Japan 1957-1997	Cobb Douglas	Public and private investments are equally important for the Japanese economy while private investment contributes more to growth than public investment for the U.S.A. economy.

Source: Makuyana, G., & Odhiambo, N. (2016), "Public and Private Investment and Economic Growth: A Review", *Journal of Accounting and Management, 6*(2), 25-42.

At the same time, many researchers also highlight cases where public investment can hinder market operations. In particular, this is the case when public investment:

(a) Financed through government borrowing (hence it may be considered likely that the country will take unfavorable budgetary measures for entrepreneurship, such as tax increases),

(b) Concerned sectors of the economy where there is competition between public and private investment and/or,

(c) Included the high level of subsidization of areas of activity that prove to be counterproductive

(Makuyana & Odhiambo, 2016, pp. 29-31).

Since the 1990s, public investment, as a share of GDP, has gradually declined significantly in European countries. Initially, this was linked to the systematization of the effort to consolidate and curb public spending in European states (mainly through the expansion of the New Public Management theory and methodology), and then to reduce spending to public investment was imposed by the financial crisis (Vinieratou, 2016, pp. 25-28).

It is significant that over the past decade, spending on public investment has dramatically decreased in many Eurozone countries, with an emphasis on the countries of the European South, particularly affected by the fiscal crisis and the implementation of the austerity programs. At the end of this period, it was again found that the public investment deficit in the respective countries led to a shrinking of private investment and, on the other hand, limited GDP growth in the euro area in general. This has led many researchers to recommend measures to ensure that in the future fiscal consolidation is combined with strengthening public investment.

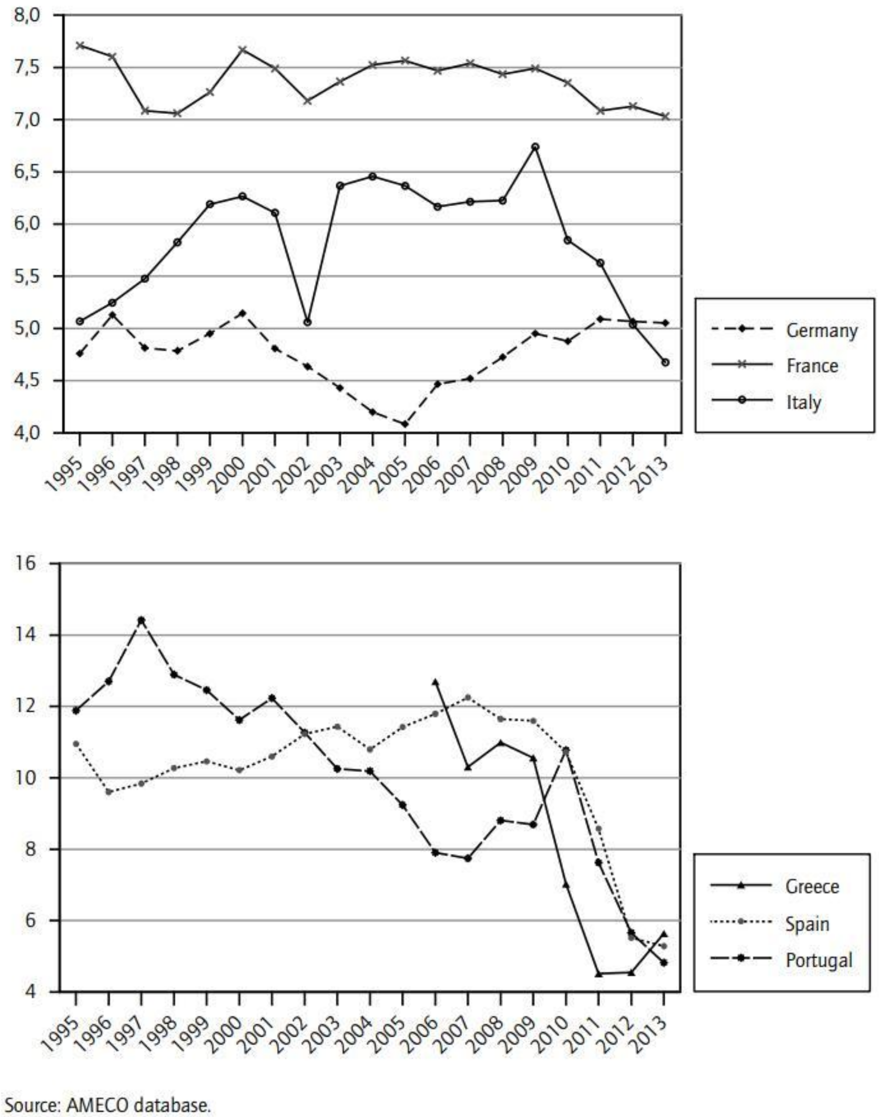

Figure 1. Public investment in Eurozone countries, as a percentage of total public expenditure. Source: AMECO

database, as in: Dreger, Ch., & Reimers, H. (2015), "The Impact of Public Investment on Private Investment in the Euro Area", *Vierteljahrshefte zur Wirtschaftsforschung*, *84*(3), 183-193, ISSN 1861-1559, Berlin: Duncker & Humblot.

In the current period, the trend of shrinking government spending on public investment is being revised globally, as there has been a direct impact on the strong interaction between public and private investment. In particular, it was found that the effectiveness of private investment in terms of growth in output, growth, and job creation is directly dependent on the existence of adequate and targeted public investment interventions (Dreger & Reimers, 2015, pp. 189-191).

Peripheral/Regional Programming and Public Investment Program in Europe and Greece

The drawing up of Public Investment Programs in most European countries in the 20th century was linked to the concept and procedures of development/regional planning, the implementation of which has evolved in particular since the 1929-1930 economic crisis, but also the two world wars (Vinieratou-Bosinaki, Touri, & Delitheou, 2011, pp. 69-72).

In particular, problems such as the need to rebuild cities and countries, the uneven development of sectors of the economy as well as of entire regions as compared to others, have made the need for public investment to be underpinned by development programs based on economic growth models. These programs were implemented on the basis of a set of rules concerning the criteria for the inclusion of projects to be financed, the timing of implementation, and the measurement of the results of the projects as well as of the program as a whole, through indicators. This is also the period of introduction of the concept of "regional policy" which marks "a system of objectives, means and entities, combined in a program to achieve a balanced change of the interregional structure of the economy" (Konsolas, 1997, pp. 65-70).

In the above direction, in Greece, a legislative attempt of the past that deserves to be noted is in 1964, DL 4355 "On the Responsibilities of the Ministry of Coordination", which, in such an early period, faced the Greek Public Investment Program (PIP) as a tool for development planning, identifying it not only on the basis of budget entries, but as part of the "long-term Economic Development Program of the Country", prepared by the Ministry of Coordination and submitted to Governmental Economic Council. However, these arrangements have not been implemented. On the contrary, in the years to come, the consolidation of development programming, which was constantly evolving in other European countries, was overthrown by the Greek PIP, through the restructuring of the ministries' competences, to return to the 1980s through the mandatory procedures of the European Structural Funds. From this period onwards, the procedures of the European Union (initially with the Mediterranean Integrated Programs—IMP and later with the Community Support Frameworks—CSF and the National Strategic Reference Framework—NSRF) "force" our country into integrated institutional, programmatic, and managerial regulation of the way in which Community funds are earmarked, leading to the establishment of development planning and the adoption of systems for their design and management, by "entangling" this logic into the corresponding section a Public Investment Program (Delitheou & Vinieratou, 2017, pp. 25-30).

This obligatory systematization of procedures only concerns EU funds and leads to the corresponding regulation of only one of the two parts of the Greek PIP, i.e., the "co-financed" one. The so-called "national" strand, which is not "touched" by the Structural Funds regulations, does not evolve accordingly, and to date, it is clearly lagging behind in terms of the institutionalization of its procedures but also of its programmatic role.

In particular, the national part of the PIP continued until 2010 to be planned only on an annual basis, and only as regards (a) the inclusion of new projects and (b) the exact amount of payments for the projects involved.

In the recent years of the fiscal crisis, following the adoption of Law 3871/2010 and the establishment of the Medium Term Fiscal Strategy Framework (MFSF), again starting with new international commitments of our country, the rudimentary planning of the national PIP begins in the medium term and in particular at the level of the project (Papadopoulos, 2014, pp. 21-25). Again, however, the attempted programming is purely budgetary targeting and mainly involves ensuring the implementation of the national PIP in line with the budgetary constraints of the period, resulting from the Fiscal Adjustment Program, but also from the budgetary surveillance mechanisms established at the Eurozone level (Papadopoulos, 2014, pp. 46-48).

Consequently, the relevant arrangements do not meet the necessities:

- The institutionalization of multiannual development coordination procedures and the definition of priority axes at central, sectoral, and regional level,
- The development of tools for monitoring the national PIP, either in whole or in part, as it is not foreseen to use indicators to assess the impact of public investment on the economy and society.

The shortcomings highlighted above, especially in relation to the national aspect of the EDP, have already been recorded in studies and proposals of public and expert executives for some 30 years, but no appropriate measures have yet been taken to address theirs (Bitsikas, 1986, pp. 45-48).

The Public Investment Program (PIP) in Greece

In Greece, the establishment of the Public Investment Program, in its current form, starts with Law 2212/1952 (Government Gazette: 266/A/1952), “On the State Budget for the fiscal year 1952-1953 and the following credits for the costs provided under the Works Agreements at the expense of Reconstruction funds”. This law establishes a system of commitment of credits to the state budget for the implementation of works contracts. In 1954, Law 2957 (Government Gazette 186/A18.8.1954) proceeded to an elementary clarification (according to the time of the day) of the concept of public investment, categorizing it in construction works, supplies, and studies. Subsequently, both the content and the context of the functioning of the PIP were fragmentarily over the years, through various legislation, a variety of themes that occasionally regulated, e.g., the structure of a Collective Decision in which the approved projects, procedures funding, the competences of stakeholders, were always without coherence and integrated planning.

In particular, according to Law 2957/1954, public investment in Greece may include (Papadopoulos, 2014, pp. 21-23):

1. Buildings, reconstructions, and extensions of permanent or semi-permanent facilities or works, including housing projects;
2. Supply of permanent equipment, machinery, and capital goods;
3. Surveys, studies, and expertise;
4. All administrative and general expenses directly related to the above cases. Currently, the financing of such expenditure under the PIP is only possible if it is provided for by specific provisions.

The above definition of the concept of public investment, according to PIP up to our days, has been enriched by including in the PIP also:

1. All but the costs of EU-co-financed programs. The projects borrowed by the European Investment Bank

(EIB).

2. Grants and subsidies to legal entities governed by private law associations, cooperatives, public limited companies, and other legal entities as defined in Article 18 of Law 2515/1997.

3. Increases in share capital of state-controlled public companies (Public Utility Companies).

4. Other investment activities specializing in Presidential Decrees or Ministerial Issues.

The PIP is divided into two strands, based on the source of funding.

1. The “national”, financed purely from national resources;

2. The “co-financed strand”, which draws its resources from EU financial instruments and Greece.

> The PIP finances the country’s development policy with projects that contribute to the growth of private and public capital of the economy and supports the modernization of the country on a long-term basis. PIP 2018-2021 aims to accompany the fiscal effort with development actions, contributing to strengthening the economy and supporting social cohesion. The resources available in the period 2018-2021 (Medium Term Financial Strategy Framework (MFSF)) for the achievement of the development objectives in the areas of infrastructure, entrepreneurship, human capital, local government, for the completion of the National Strategic Reference Framework NSRF 2007-2013 and to meet the absorption targets of the Corporate Compact for the NSRF Development Framework 2014-2020 amount to a total of 28.65 billion euros.
>
> The main objective of the PIP 2018 is to allocate the pre-determined resources in such a way as to achieve the maximum possible development result for the country to enter a stable growth path. The main budgetary objective for the implementation of the Public Investment Budget 2018 is to achieve the absorption of the foreseen NSRF 2014-2020 and other co-funded programs to ensure the inflow of Community assistance and the completion of the 2007-2013 projects without loss of resources. It is also important to implement the programs and projects of the national section in order to promote the development objectives of the Bodies financed by the PIP, taking into account any synergy and complementarity with the co-financed projects. Necessary prerequisites for this are good planning and targeting. (The Ministry of Economy and Development, March 2018)

The main institutional actors involved in the design and implementation of the national PIP are:

1. The Ministry of Economy and Development;

2. The Ministry of Finance and, in particular, its Treasury General Account State;

3. The Funding/Execution Bodies of the Public Investment Program, which is the Hellenic Parliament, Ministries, and Regions.

In addition to the above, the Implementing Bodies of the Public Investment Program are:

1. The Regional Units;

2. The Municipalities;

3. The Legal Entities of the State and the Private Legal Entities;

4. Public Companies and Organizations.

The “National Development Plan” (Presidential Decree 147/2017, Government Gazette 192/A/13.12.2017)

To date, the Public Investment Directorate (PID), the Ministry of Economy and Development, plays a leading, central/coordinating role in the preparation and implementation of the Public Investment Program, where the Funding Bodies (Greek Parliament, Ministries, and Regions) overall proposals for the projects of the sectors and categories of their competence, taking into account the spending limits of the state budget.

The PID also has the central responsibility to fund the projects of the agencies by transferring the relevant credits to their accounts.

The new "Ministry of Economy and Development Organization" (Presidential Decree 147/2017) reaffirms as the operational objective of the Public Investment Directorate the "financing of the country's development policy through the implementation of the Public Investment Program".

Subsequently, with Article 40, the new agency of the body, for the first time, establishes the Directorate for the Administration of the National Public Investment Program, with the operational objective of "designing and properly implementing development programs financed from purely national resources of the PIP".

In particular, the responsibilities of the Directorate for the Administration of the National Public Investment Program include, as a matter of priority:

- Designing the structure, content, and procedures of the National Development Program (NDP);
- The establishment and operation of the management and control systems of the National Development Program and the programs it specifies, and;
- To set up a system for evaluating programs and projects funded by national resources using methodological tools.

The provision of a special service for the preparation and management of a "National Development Program" based on the resources of the national section of the PIP is undoubtedly a positive step towards institutionally securing its program role; however, the necessary condition for the promotion of the corresponding legislation on procedures concerning the NDP is fulfilled immediately.

OECD: Twelve Guidelines for Public Investment Programs

A feature of the "new era" that is being launched today for public investment, with international recognition as a key tool for promoting private investment, market operation and improving the quality of life for citizens, is the Organization for Economic Co-operation and Development (OECD) in 2014, a "Special Report on the Efficiency of Public Investment at Levels of Governance" (OECD, 2014, pp. 11-12).

The text was based on comparative research and study of implementation rules and practices recorded in the member countries of the organization regarding Public Investment Programs.

With a view to responding to new global challenges and international development standards, the OECD formulates 12 "Guidelines" for the design and implementation of Public Investment Programs which, in summary, include:

- Coordinating national and sub-national spatial levels, with a view to adopt an integrated strategy and investment rules based on local priorities and comparative advantages;
- The use of investment-enhancing tools such as risk and impact studies, private sector involvement, and focus on achieving achievable results;
- Developing a budgetary framework that is in line with the objectives set and based on a coherent regulatory framework, as well as a transparent and efficient system of financial management.

Conclusions

The role of public investment and its substantial contribution to economic growth and the quality of life of citizens is now being reaffirmed internationally, creating a trend towards enhancing the relative public spending. In Greece, having undergone a significant period of shrinkage over the years of the memorandums, the Public Investment Program has again shown a tendency to increase its resources and its importance (Ministry of

Finance, 2017). In particular, the modern investment and financial planning requirements of our country highlight the role of the PIP in practice.

This finding, together with the requirements of the new economic environment created after the fiscal crisis, makes it imperative to both modernize and reform the obsolete and often incomplete institutional framework of the Greek PIP as a whole and to institutionalize programmatic design of the national branch in particular.

This reform effort must take into account that, in order to keep track of current global trends and prospects, Public Investment Programs are now called for to be reconciled with new development models as well as new, internationally accepted rules of proper governance and financial management. In this context, they should also act as catalysts for further supporting and strengthening private investment.

References

Bitsikas, G. (1986). Social assessment of public investment in Greece (Unpublished).

Delitheou, V. (2018). *Institutional framework of regional development*. Athens: Papazisis, editions.

Delitheou, V., & Vinieratou, M. (2017). Decentralization and local government (Unpublished).

Dreger, Ch., & Reimers, H. (2015). The impact of public investment on private investment in the Euro Area. *Vierteljahrshefte zur Wirtschaftsforschung, Duncker & Humblot, 84*(3), 183-193. Retrieved from http://dx.doi.org/10.3790/vjh.84.3.183

Konsolas, N. (1997). *Modern regional economic policy*. Athens: Papazisis Publications.

Lloyd, M. (1999). Public and private investment in the European Union. European Parliament, Working Paper, Economic Affairs Series, 04-99.

Makuyana, G., & Odhiambo, N. (2016). Public and private investment and economic growth: A review. *Journal of Accounting and Management, 6*(2), 25-42.

Marmatakis, N. (1969). Theory and policy of incentives for economic development. *Spoudai, 19*(3), 485-548.

Mehrotra, A., & Välilä, T. (2006). Public investment in Europe: Evolution and determinants in perspective. *Fiscal Studies, 27*(4), 443-471.

Ministry of Finance and Development. (2018). Circulars for the approval and funding of the PIP 2018 and the programming of expenditure PIP 2019-21. Retrieved from http://www.epde.gr/ (accessed on March 10, 2018)

Ministry of Finance, Athens. (2017, May). Ministry of Finance, medium-term framework financial strategy 2018-21. Retrieved from https://minfin.gr/proupologismos/-/asset_publisher/qmvb5pyzdGAQ/content/mesoprothesmo-plaisio-demosionomikes-strategikes-2018-2021?inheritRedirect=false (accessed on May 9, 2017)

OECD. (2014). Recommendation on effective public investment across levels of government. Retrieved from https://www.oecd.org/regional/regional-policy/Principles-Public-Investment.pdf (accessed on June 9, 2018)

Papadopoulos, Th. (2014). Classification of national PIP expenditure: a) by sector of economic activity, b) by region and county and c) by specific program (e.g., Olympic projects, local government projects, earthquake works, etc.) (Thesis, National School of Public Administration and Local Government).

Streeck, W., & Mertens, D. (2011). Fiscal austerity and public investment is the possible the enemy of the necessary? Max-Planck-Institut für Gesellschaftsforschung (MPIfG) Discussion Paper 11/12.

Vinieratou-Bosinaki, M., Touri, M., & Delitheou, V. (2011). European regional planning processes and the development of self-government in Greece. *Review of Decentralization, Local Government and Regional Development, 63*, 67-85.

Vinieratou, M. (2016). Prospects of European local government and culture: A new perspective of local sustainable development through culture (Ph.D. diss., University of Peloponnese).