



Fiscal federalism and the composition of public investment in Europe [☆]

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ABSTRACT

We analyse the determinants of the composition of public investment in Europe, with a special focus on the role of fiscal decentralisation. The results suggest that fiscal decentralisation boosts economically productive public investment, notably infrastructure, and curbs the relative share of economically less productive investment, such as recreational facilities. While not readily reconcilable with the traditional theory of fiscal federalism, these findings can be interpreted in terms of the literature on fiscal competition, with not only tax rates but also the quality of public expenditure weighing in firms' location decisions.

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1. Introduction

Public investment has received only limited academic attention as an aggregate variable, and its composition has to our knowledge received none at all, at least in the European context. This paper seeks to fill that gap at least in part by presenting an empirical analysis of what drives different types of public investment, with a special focus on the impact of fiscal federalism.

Perhaps because of lack of academic attention, misconceptions abound concerning the nature, drivers, and impact of public investment. Most notably, there is often confusion about what it is in the first place. Perhaps the most prominent example of this type of confusion is the customary synonymous use of “public investment” and “infrastructure investment” in much of economic literature. There is, however, a great deal of infrastructure investment that is not public, and there is a great deal of public investment that is not infrastructure investment. While it is well-known that many roads, water and sanitation networks, and municipal swimming pools are publicly funded and provided, neither economic theory nor empirical analyses have really distinguished between them when studying what determines “public investment” or how productive “public investment” is.

As a starting point for a more nuanced analysis and understanding of public investment, we first break it down into different types with distinctly different economic characteristics in Section 2. We then propose to use the traditional theory of fiscal federalism and some of its more recent extensions, reviewed in Section 3, to derive hypotheses about the link between fiscal

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Table 1
Functional breakdown of public investment

Aggregation	ESA 95 COFOG
1. Infrastructure (INF)	Economic Affairs
2. Hospitals and Schools (HS)	Health Education
3. Public Goods (PG)	Defence General Public Services Environment Order and Safety
4. Redistribution (RED)	Housing Recreation Social Protection

Source: Eurostat; own aggregation.

decentralisation and the composition of public investment. Section 4 seeks to articulate empirical tests of the hypotheses, and their results are interpreted from an economic perspective in Section 5, before concluding in Section 6.

2. Data on the composition of public investment in Europe

To the best of our knowledge, no empirical analyses have been conducted with a focus on the composition of public investment, at least in the European context. Therefore, we start off by describing the available data in this section.

Based on the functional classification of government expenditure in the 1993 UN System of National Accounts and in the 1995 European System of Accounts (ESA 95), Eurostat provides a breakdown of public investment for EU countries starting in the early 1990s. Complete data are available for EU15 countries from 1995 (*i.e.*, the introduction of ESA 95) through 2005.¹ However, many countries have back-dated their time series to 1990.

The “public investment” variable is gross capital formation of the general government. This includes changes in inventories, which may create some undesired noise for our analysis; however, the breakdown between gross fixed capital formation and changes in inventories is not available.

The functional breakdown of public investment is presented in Table 1. The right-hand side column shows the functional classification (Classification of Functions of Government, COFOG for short) in ESA 95. The left-hand side shows our aggregation of the 10 available “functions” into four types of public investment with economically distinct roles. This aggregation will be used in the remainder of this paper; however, we also consider alternative groupings as a robustness check in the empirical analysis below.

The four different types of public investment affect the economy through different channels, with varying degrees of directness, and over different time horizons. Public investment in Infrastructure, consisting of just Economic Affairs in the ESA 95 COFOG², seeks to measure public investment in traditional infrastructure, mainly transport. This type of public investment has the most direct economic impact by reducing firms’ production and transaction costs. The economic impact of public investment in Hospitals and Schools is more long-term and less direct in character, as it facilitates the building up and maintenance of the economy’s stock of human capital. Investment in Public Goods affects the economy’s allocative efficiency indirectly through framework conditions for productive activity. Finally, Redistribution affects the economy’s income distribution rather than allocative or productive efficiency *per se*.

In addition to the composition of Infrastructure investment, some other aggregates shown in Table 1 contain undesirable “noise” as no further breakdowns of the right-hand side “functions” are available. For example, public investment in water supply and wastewater management are not part of Infrastructure as one would wish; instead, they are part of Redistribution (Housing) and Public Goods (Environment), respectively. Similarly, one would wish to include street lightning in Public Goods; now it is in Housing and thereby Redistribution. However, as with Infrastructure, we expect such “noise” to be of sufficiently small magnitude so as not to invalidate the empirical analysis below.

3. Public investment and the theory of fiscal federalism

The theory of fiscal federalism – or any other theory for that matter – does not deal explicitly with the composition of public investment. At best, it distinguishes between consumption-oriented public expenditure and public expenditure to produce “public

¹ EU15 comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

² Economic Affairs comprise a number of different sectors, including agriculture; fuel and energy; mining, manufacturing, and construction; transport; communication; R&D; and others. Among these sectors, transport is likely to be by far the dominant recipient of public investment. Note that investment by energy companies owned by the public sector, for example, is classified as corporate investment in national accounts statistics as long as such companies are commercially run.

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