

Macroeconomic effects of firm-level project work



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KEYWORDS

- project work (P)
- non-project work (NP)
- temporary organisation (TO)
- permanent organisation (PO)
- projectification
- input–output analysis (IOA)
- static impact
- dynamic impact
- backward linkage
- forward linkage

Article highlight:

While there is much evidence that project-based work can be an effective and productive way of achieving economic outputs at firm level (within particular companies), there has remained a lack of knowledge about the effects on an overall economy of firms transitioning from non-project to project work ('projectification'). This study aims to fill that gap by analysing the macroeconomic effects (production/innovation, employment, household income) of projectification by means of an extended form of input–output analysis (IOA) using data relating to the German economy. This technique has enabled the authors to analyse the static and dynamic effects of projectification upon the overall economy showing that projectification has predominately positive macroeconomic effects.

What does the paper cover?

This is the first research that empirically analyses the effects of projectification on the entire economy and on individual economic sectors. The authors apply economic modelling techniques to study the impact of transitioning from non-project (NP) to project (P) work in the German economy, considering **static effects** (short-term) and **dynamic effects** (long-term). Considering sectoral dependencies, whereby the outputs of each sector are the inputs of others, they have been able to quantify the effects of company-level projectification (shifts from NP to P) on overall economic production/innovation, employment, and household income.

Methodology:

The authors draw upon data on the projectification of the German economy in 2013 which they combine with data from the Federal Statistical Office on the structure of the economy, aggregating 72 economic sectors into ten more broadly defined sectors, covering the main areas of economic activity such as manufacturing, financial services, and the public sector.

The authors use an extended version of the **input–output analysis (IOA)** method developed by W. Leontief, which considers all the inputs into an economy (including labour and capital) in relation to all the outputs, and allows for the fact that the outputs of most sectors are the inputs of other sectors, within a network of economic dependencies. **Key sectors** are those that have the largest number of **backward and forward linkages** in this network.

The Leontief method is based upon a concrete notion of final demand, assuming that inputs of goods and services are always sufficiently flexible for this to be met. The method quantifies interdependencies by means of empirically derived multipliers for the different sectors.

Henning and Wald extend this model to include a new distinction between project work (P) and non-project work (NP). As before, an input–output matrix multiplier is used to show the impact of one sector upon another, but now each sector is split into two subsectors according to the percentage distribution of P and NP within it. Adjusting the Leontief equations in this way enables calculations to be done that quantify the effects of projectification upon the overall economy – by identifying the shift in final demand from NP sectors to P sectors. These effects are distinguished as either **static impacts** (short-term effects) or **dynamic impacts** (long-term effect after 10 years).

Research findings:

Projectification changes the structure of an economy in terms of the relative importance of the different sectors. The results indicate that projectification has economy-wide positive effects, both static and dynamic: on production/innovation, employment and household income. The effects on individual sectors are more nuanced. Although for most sectors projectification has positive effects, for a few, such as agriculture, static effects can be negative. Sporadic negative static effects in individual sectors are mostly levelled out by positive dynamic (long-term) effects. The effects of projectification on the economy overall are clearly positive.

Conclusions and recommendations:

The authors were able to identify important effects of projectification at the level of individual economic sectors and on the entire economy. At the macro level, projectification (the shift from NP to P) has positive effects on the economy. At the sector-specific level, these effects vary from sector to sector, because of varying input–output interdependencies, and according to the time horizon (short term versus long term).

Significance of the research:

This study is the first to provide empirical evidence for the macroeconomic effects of firm-level projectification, including the effects on production/innovation, employment, and household income. This study complements the various studies on firm-level consequences of projectification.

Comments from the authors:

We are very happy to present the first empirical study modelling macroeconomic effects of projectification including all sectors of an economy. We are fully aware that macroeconomic modelling is not a standard technique in project management research and that some readers may struggle with the formal modelling element in our paper which we documented in some detail. However, we believe that the results justify the effort, and the interested reader may concentrate on the results section. We were quite intrigued by finding predominantly positive effects of projectification, providing sound scientific evidence for our pre-existing 'gut feeling' that, in general, projectification can be considered a positive phenomenon.

Christian H C A Henning and Andreas Wald

Complete article

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Association for Project Management

Ibis House, Regent Park
Summerleys Road,
Princes Risborough
Buckinghamshire,
HP27 9LE

Tel (UK) 0845 458 1944
Tel (Int) +44 1844 271 640
Email research@apm.org.uk
Web apm.org.uk

Glossary:

Project work (P):	Economic activity conducted through temporary organisations.
Non-project work (NP):	Economic activity that is ongoing and conducted through permanent organisations.
Temporary organisation (TO):	An organisational structure characterised by limited duration, heterogeneous team composition, unique and risky new tasks, ambiguous hierarchies and fairly informal methods of coordination, typically associated with the delivery of projects.
Permanent organisation (PO):	An organisational structure that supports ongoing non-project work, usually by means of routines and established procedures and clear lines of command. Compared with a TO (above), it is more likely to be static, hierarchical, formal and risk-averse.
Projectification:	The conversion of an economic activity from non-project to project work.
input–output analysis (IOA):	A economic modelling technique, first developed by W Leontief in 1941, which models interdependencies among sectors of an economy by means of formulae based on mathematical multipliers.
Static impact:	Economic outcomes that relate to aspects of an existing or pre-existing operation or activity, including production, employment and value added
Dynamic impact:	Economic outcomes that relate to factors newly arising from a project, such as technical progress and innovation.
Backward linkage:	The pattern of dependencies between a particular economic sector and the tributary sectors upon which it relies for its inputs.
Forward linkage:	The pattern of dependencies between a particular economic sector and the other sectors that rely upon its outputs.



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