Recent Advances in the Measurement of Intangible Assets.

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1. INTRODUCTION

There is an extensive literature that highlights the importance of investment in intangible assets for understanding the drivers of economic growth. Key to this is the idea that organisational changes and other forms of intangible investment such as workforce training are necessary to gain significant productivity benefits from adopting new technologies (e.g. Bertschek and Kaiser, 2004; Black and Lynch, 2001; Bresnahan, Brynjolfsson and Hitt 2002). Given this, a measurement exercise was instigated to estimate the impact of intangible investments as a source of growth. This involved researchers across a wide range of institutions and countries, with much of the research effort funded by European Commission framework grants. The main projects were COINVEST, INNODRIVE, IAREG and INDICSER for business sector intangibles with a currently running project, SPINTAN, addressing the measurement of intangibles in the public sector. In addition a voluntary initiative of the research community was the INTAN-INVEST project which constructed a harmonised dataset on intangible capital investments merging datasets from the INNODRIVE and COINVEST projects with the underlying data from the Conference Board for the US (Corrado et al., 2009).5

2. METHODS

Estimating intangible investments required an identification of types of assets to include as intangible investments and methods to capitalise these investments. The pioneering work on measuring expenditures on intangible assets by businesses was Corrado, Hulten and Sichel (2005). These authors (CHS) identified a number of types of expenditure which they argued should be treated as investments rather than as intermediate expenditures. Three main categories of assets were identified by CHS (2005): computerised information, innovative property and economic competencies. Computerised information basically coincides with computer software. Innovative property refers to the innovative activity built on a scientific base of knowledge as well as to innovation and new product/process R&D more broadly defined. Economic competencies include spending on strategic planning, worker training, redesigning or reconfiguring existing products in existing markets, investment to retain or gain market share and investment in brand names.

In addition to constructing nominal investment series, the research had to decide on appropriate deflators to convert to volume measures and on the form and rates of

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5 Information on these projects can be found on the following: www.coinvest.org.uk; www.innodrive.org; www.iareg.org; www.indicser.com; www.spintan.net; and www.intan-invest.net.
depreciation to capitalise these assets. GDP deflators were generally employed due to lack of information on asset-specific deflators. The geometric depreciation rates were generally assumed to be very high, as many of these assets are short lived.

This research effort combined produced annual data series from the mid-1990s to recent years for a large of number of EU countries, and the US. Parallel academic exercises also constructed estimates for countries such as Canada, Japan and Korea. The researchers involved both benefited from and fed into initiatives in national statistical offices to include some intangible assets into the national accounts, most important being software and scientific R&D. However the academic research effort was much broader in scope, including many assets not currently included in the national accounts.

3. RESULTS

![Business Intangible Investment as a percent of GDP](image)

**Figure 1. Business Intangible Investment as a percent of GDP (average 1998-2005). Source: INNODRIVE (2011).**

The key result is that investment in intangible capital by businesses is sizeable and is able to explain a significant share of labour productivity growth. Results from the COINVEST project find that the US and UK invested around 13 percentage points of GDP in business intangible capital. However as Figure 1 illustrates, although the average EU investment is less than the US (9.9% vs. 13%), investments are still sizeable and range from 6% in Spain to 13.5% in Sweden. France, Denmark and the Netherlands also invest heavily in Intangible assets. In contrast Spain and Italy invest significantly lower shares in intangible capital compared to the US. Interestingly, this low level of investment in intangible capital is equally driven by lower investments in software, innovative property and economic competencies.

The high shares of intangibles shown in Figure 1 imply that business sector investment in intangible capital within the EU increases total investment significantly, indicating that the real level of investment in the EU is significantly higher than traditionally measured. Some EU countries are already at the threshold of investing similar amounts of intangible capital as tangible capital investments, e.g. France and Sweden. In contrast, countries from the Mediterranean and transition countries tend to invest significantly higher shares into tangible capital. Also the EU has to still catch-up significantly in order to reach the same ratio of intangibles to tangible investments as in the US. The implication of these results for sources of growth is that once accounting for business intangibles, capital
rather than total factor productivity becomes the dominant source of growth (Roth and Thum, 2013).

4. CONCLUSIONS

The inclusion of intangible assets in national accounts has a significant impact on the levels of GDP. As highlighted by the various research findings the process of incorporating business intangibles into the asset boundary will have significant policy implications due to the fact that investments in intangible capital shows significant variation across countries. After accounting for business intangibles, with Italy and Spain being endowed with significantly lower levels of business intangibles than France and Germany, the already large macroeconomic disparities within the euro area will become even more distinct. It thus seems to be imperative to increase the level of investments in business intangible capital in countries facing low investment, such as Italy and Spain.

Empirical evidence from the EC funded projects highlights that growth of intangible capital services is able to explain the largest share of labour productivity growth within a European country sample. Research also indicates that intangible assets are important in facilitating innovation and the adoption of new technologies. Refining the measurement of these assets is crucial for evaluating comparative growth performance. This requires strong collaboration between the statistical and research communities, more regular updating of datasets produced as a by-product of academic research and a concerted effort to produce timely data for policy purposes.

REFERENCES


