

# IARIW-ESCoE Conference

## “Measuring Intangible Assets and Their Contribution to Growth”

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### Collecting Firm Level Data on Intangible Assets

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#### **The challenges**

The challenges of collecting data on ‘unmeasured intangible assets’ have been well documented (Haskel et al 2016<sup>1</sup>). According to ONS (Martin 2019<sup>2</sup>) only one third of intangibles are satisfactorily measured by ONS surveys.

#### **Administrative data**

In a discussion of my PhD research with Jonathan Haskel (Stroll 2018<sup>3</sup>) he advised me to examine the extent to which administrative data could be used to collect data on intangibles. Current methods of data collection based on surveys are both expensive and incomplete.

#### **PhD Case Study**

As part of my PhD thesis (Stroll 2020<sup>4</sup>) at Birkbeck College, University of London I prepared and submitted a Case Study for a Purchasing business process which demonstrated that Administrative Data from Payroll and Purchase Ledgers could be imported and mapped to provide efficiency reporting using ONS Total Factor Productivity measures. It also demonstrated that agency, exercised by employees, first, second and third level managers, could change technologies, organisation structure and work-objects, and that these changes would lead to greater productivity.

#### **Extend Method to scan Purchase ledger for possible Intangibles**

Using a ‘Big Data’ approach I propose to extend the method already used in the PhD Case Study to create custom searches of Firm purchase ledgers using the Structured Query Language (SQL). These searches would be programmed to identify purchasing expenditures which could be considered as possible intangible investments. Service providers for ‘unmeasured intangibles’ include management consultancies (for organisational redesign), advertising firms and brand management specialists and thirdly training providers of all types. The outputs of these SQL searches would be a provisional list of intangible investments in the form of a Draft Intangibles Register, following the CHS/ONS classification.

#### **Provide Draft Intangibles Register for ONS review**

This anonymised draft intangibles register would then be provided to ONS for their review and comments. It is quite possible that this would reduce the unmeasured intangibles from two thirds to, say, 40%.

#### **Provide Updated Register for Firm Review**

The updated Intangibles Register would then be provided back to the original firm for their review. At this stage it would be helpful to obtain data from within the firm which might also be

considered as intangibles expenditure. Much expenditure on training and organisational redesign might actually be re-classified as Intangible Assets.

### **Implement an Innovation Survey**

To further assist in fully capturing all intangible investments we would conduct an Innovation Survey (BEIS 2011<sup>5</sup>). This is normally performed by BEIS and ONS every two years following the template designed by OECD, which follows the Oslo Manual <sup>6</sup>. As part of my own work on Digital Transformation I have built an electronic version of this survey which enables firms to provide the required data. This electronic survey captures investments in innovation (product, process, market and organisation) which are new to the firm, new to the market or new to the world). We know that investments in Digital Transformation have been increasing in every industry, and it is likely that many of these investments would also result in intangible assets. Again, we follow the same approach of custom SQL searches to identify possible intangibles expenditure.

### **Provide Draft Innovation Survey Data for BEIS and ONS review**

This anonymised draft intangibles register would then be provided to BEIS and ONS for their review and comments. They have access to innovation surveys for all industry sectors going back a number of years (BEIS 2016 <sup>7</sup>) so are well placed to understand which innovation expenditures might also be classified as intangible. It is possible that this would reduce the unmeasured intangibles from 40% to, say, 20%.

### **Provide Updated Innovation Survey Data for Firm Review**

The final step in the proposed process is to provide the innovation expenditure which in the BEIS / ONS view, maps to the CHS Intangibles. This would enable firms to further improve the quality of the intangible assets register.

### **Complete the Process by measuring TFP and TFI**

Now that a more comprehensive intangibles register can be provided to the firm, it becomes possible to calculate a more accurate measure of Total Factor Productivity at Firm Level. This requires additional administrative data for firm revenues which can be found in the sales ledger and imported into the software platform using the same methods already used for Payroll and Purchasing. It now becomes possible for a Firm to run quarterly TFP reports based on administrative data rather than surveys. Not only will these TFP reports be more frequent than the current ARDx dataset, they will also be based on much richer intangibles data than is currently available from surveys. If the Firm also updates the Innovation Survey on a quarterly basis a Total Factor Innovation (TFI) report can be produced. This would enable Firms to produce a quarterly innovation index report which shows TFI as a percentage of TFP. This data would be of considerable interest to Investors and to policy makers.

### **Benefits of this Approach**

This research proposal, will when implemented, demonstrate the extent to which the 'unmeasured intangibles' problem can be solved using Big Data methods. Since Digital Transformation at Firm level requires increased innovation expenditure and both uses and creates high level of intangible assets, it is possible that firms, sectors and the national economy may be underinvesting in both innovation and intangibles. Providing richer data on TFI, TFP and the

Innovation Index to investors would make it easier for them to understand and value these investments since they could be published under ONS supervision and would not require any changes International Accounting Rules.

## **References**

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