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# **An analysis of management practices across firm ownership: the case of standalone domestic firms, domestic groups and multinational enterprises**

## **Abstract**

Management practices are important drivers of firm productivity (Bloom et al., 2019). While differences in the formalisation and sophistication of management practices are evident in comparisons of foreign multinationals and domestic firms (Bloom et al., 2012, Bloom and Van Reenen, 2007a, Bloom and Van Reenen, 2010), a striking omission from many studies is the failure to distinguish between domestic firms and domestically-owned multinationals (McDonnell et al., 2014). We merge the World Management Survey with the FAME dataset to examine the influence of firm ownership (standalone domestic firms; domestic groups; domestic owned multinationals; foreign owned multinationals) across a broad range of management practices. Foreign owned multinationals exhibit the highest formalisation and sophistication of management practices compared to all other firm types. However, significant asymmetries exist between different management practices across firm ownership. This is important as it raises questions as to whether there is sufficient learning and transfer of practices taking place across firms.

**Keywords:** firm ownership; management practices; foreign ownership; domestic ownership; multinationals; World Management Survey.

**JEL Codes:** L2; M2; O3.

## 1. Introduction

A country's ability to increase its living standards over time depends to a large extent on its' productivity, i.e. improvements in output per worker (Krugman, 1994). However, disparities in productivity growth have been magnified by the Great Recession of 2007/8, with many countries experiencing a substantial contraction in their aggregate output (OECD, 2014). Despite rapid technological advances, productivity growth has declined in advanced economies in recent years (OECD, 2015). This phenomenon, termed the 'productivity puzzle', increasingly concerns economists and policymakers as to the likely impact of sluggish labour productivity growth and consequently real wage growth in the years to come (OECD, 2015).<sup>1</sup> At the firm level, productivity levels can also vary considerably (Bartelsman and Doms, 2000, Criscuolo et al., 2003, Syverson, 2004), even within narrowly-defined industries (Foster et al., 2008).

While debates continue as to why these differences in firm productivity remain, it is increasingly accepted that variation in production process inputs (such as business' output prices, differences in technology, research and development, and employee skill levels) forms only part of the explanation (ONS, 2018). Recently, the OECD has taken a new perspective on the issue and claims that the key to reducing the gap between frontier firms and non-frontier firms is the diffusion of innovations and best practices (OECD, 2015). This is in line with much of the work on management practices, which points to disparities in the diffusion of management practices as a key explanatory factor for productivity gaps between firms (Bloom et al., 2014, Bloom and van Reenen, 2007b, Bloom and Van Reenen, 2010, Mol and Birkinshaw, 2009).

Multinational enterprises play an important role in the economies of many countries, particularly so in Ireland and the UK. Ireland, in particular, has been well heralded as one of the world's most successful countries in attracting foreign direct investment but also in recent decades has started to have an increasing number of domestic firms emerge as international players (McDonnell et al., 2007). There is clear evidence of foreign firms exhibiting higher productivity levels than domestic firms. As a stark example, in Ireland, foreign-owned firms represent 2 per cent of all enterprises, however, they account for 63 per cent of gross value added and 22 per

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<sup>1</sup> For instance, compared with the rest of the G7, the UK had below average real productivity growth in both output per hour and output per worker in 2016 (ONS 2018). In fact, the difference between post-downturn productivity performance and the pre-downturn trend was 15.6 per cent in 2016 in the UK, around double the average of 8.7 per cent across the other G7 countries, and 22.6 per cent lower than the USA (ONS 2018).

cent of all persons engaged in work (NCC, 2018). Similarly, foreign-owned firms represent 1 per cent of all enterprises in the UK, with foreign direct investment (FDI) accounting for approximately 27 per cent and 20 per cent of gross value added and employment respectively (ONS, 2017, ONS, 2019). This productivity gap between foreign multinationals and domestic companies is of increasing concern to policymakers, with the National Competitiveness Council in Ireland stating “while the multinational sector must remain a key pillar of the Irish economy, it is critical that productivity levels are enhanced across all firm-types” and highlighting that improving management practices will be essential in supporting productivity growth (NCC, 2018, p11).

The focus of this paper is to analyse the variations in management practices across foreign and domestically owned firms in the UK and Ireland. The evidence suggests that foreign multinationals have better management systems and practices vis-a-vis domestic firms (Bloom and Van Reenen, 2010). In addition, foreign multinationals partially “transport” their practices to their foreign subsidiaries, even when local circumstances may constrain this (Bloom and Van Reenen, 2010, Burstein and Monge-Naranjo, 2009) leading to pronounced country of origin effects being noted (Lavelle et al., 2010; Almond, 2011). The globalisation thesis suggests that due to greater integration between economies, convergence of management practices may become more visible across countries and firms (Pudelko and Harzing, 2007). The argument here is that multinationals will increasingly move towards the adoption of global best practices of which is often ascribed more closely to ‘US practices’ (Pudelko and Harzing, 2007), but the evidence supporting this contention remains limited or inconclusive (McDonnell et al., 2014). Further, while variations in management practices continue to appear evident in comparisons of multinationals and domestic firms, scholarship has tended to not distinguish between domestic firms and domestic-owned multinationals (McDonnell et al., 2014)(Bloom et al., 2012). This, we argue, is important because being an international company may or may not have a significant influence in shaping the make-up of the management practices enacted.

As domestically owned multinationals are more exposed to international competition and knowledge from their international ventures, the gap in management practices between foreign owned multinationals, and domestically owned multinationals, may be less than any differences between multinationals and domestic firms. Likewise, the gap between foreign multinationals and purely domestic firms may be significantly wider than previously suggested once domestic multinationals are accounted for separately.

This paper seeks to address this knowledge deficit through answering the following research question; *do*

*variations in management practice exist across ownership forms?* We draw on FAME data for the UK and Ireland which we match with the 2008 World Management Survey (WMS)<sup>2</sup> to answer this question, measure the formalisation and sophistication of management practices (Bloom et al., 2007, Bloom et al., 2014, Bloom et al., 2012, Bloom et al., 2013, Bloom and Van Reenen, 2007a, Bloom and Van Reenen, 2010) that lead to productivity improvements in manufacturing firms. (Bloom et al., 2007, Bloom et al., 2014, Bloom et al., 2012, Bloom et al., 2013, Bloom and Van Reenen, 2007a, Bloom and Van Reenen, 2010)

In so doing, the contributions of this paper are twofold. Firstly, we present the most comprehensive breakdown of firm ownership and its relationship to management practices to date. We do this by distinguishing between (i) foreign owned multinationals, (ii) domestically owned multinationals, (iii) domestic groups and (iv) domestic standalone companies. Previous studies have tended to focus more on a binary categorisation of firm ownership (e.g. foreign multinationals versus domestic firms), which potentially masks hidden heterogeneity in ownership effects, particularly in relation to domestic firms. Our second contribution is analysing the relationship of firm ownership across four distinct types of management practices, and an index of overall management practices. Employing a seemingly unrelated regression (SUR) model enables us to account for correlation across the error terms of these models that may occur from unobservable firm specific characteristics. Our contributions are also important in the broader context of the role of management practices in driving productivity and employment growth (Bloom et al., 2012, Broszeit et al., 2016, ONS, 2018).

Next, we proceed to Section 2 where the literature is reviewed. Section 3 describes the data sources employed, and Section 4 describes the econometric methodology. Our results are presented in Section 5, and Section 6 concludes the paper.

## **2. Previous research and hypotheses development**

### *2.1 Firm Ownership and Firm Performance*

The empirical evidence demonstrating that foreign firms are better performers than domestic firms is accumulating (Bellak, 2004a). Performance gaps arise across all types of firm level indicators including productivity, technology, profitability, wages, skills and growth (Bellak, 2004b). These stylised facts have originated from work primarily based on empirical evidence from the United Kingdom and America (Temouri et al., 2008). In the UK context, labour productivity has been identified to be over a third higher for foreign manufacturing

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2 This is the most recently available version of the WMS available for Ireland and the UK.

and service firms relative to their domestic counterparts (Oulton, 1998b, Oulton, 1998a). However, when ownership categories are decomposed between domestic multinationals and domestic non multinationals in the UK; the productivity differences between foreign and domestic multinationals exist, but are explained by the takeover of already high productive UK plants by foreign investors, rather than firm specific characteristics (Criscuolo and Martin, 2009).

A similar story of differences in the productivity performance of foreign and domestic firms can be identified in the Irish case. Since the 1970s, the Irish economy has had a strong reliance on foreign direct investment (Barry and Bradley, 1997, Bailey and Lenihan, 2015). A productivity gap between foreign owned affiliates and their domestic counterparts has persisted since the arrival of FDI into Ireland (Kennedy et al., 1988) and today foreign companies represent a short tail of high performing firms in Ireland (CSO, 2016). This dichotomous pattern is also apparent in broader indicators of firm performance. There is evidence of considerable self-containment on the part of foreign firms with respect to knowledge sourcing decisions (Doran et al., 2013) and innovation activities in Ireland (Doran and O’Leary, 2016). However, a problematic shortcoming of the majority of the literature examining foreign and domestic firm performance differentials is that these studies apply a binary categorisation to firm ownership. This gives rise to a selection problem and it may be the case that domestic multinationals may perform as well as foreign multinationals (or at least outperform purely domestic firms) in many firm level performance indicators.

## *2.2 Diffusion of Innovations and Management Practices*

Recent work by the OECD presents a new perspective on what drives productivity (OECD, 2015). The OECD distinguishes between ‘frontier firms’ which are internationally competitive and match global high standards in productivity, and the remaining firms, comprising 70-80 per cent of firms, which have a more domestic market orientation and much lower average productivity (OECD, 2015). This research suggests that over the last decade productivity growth in frontier firms has been significantly more rapid than that in non-frontier firms leading to an increasing productivity gap. The OECD explains ‘that the main source of the productivity slowdown is not so much a slowing of innovation by the most globally advanced firms, but rather a slowing of the pace at which innovations spread through the economy: a breakdown of the diffusion machine, the gap between those high productivity firms and the rest has risen’ (OECD, 2015; p. 12).

The diffusion of innovation and best practices is the catalyst to improved productivity. Specifically, organisational innovation, which involves changes in how a company is organised (Oslo, 2005), comprises changes in how firms are managed i.e. management practices and, among other factors, the diffusion (or lack of) of new management practices are important for product and process innovations (Bourke and Crowley, 2015, Crowley and Bourke, 2017, Crowley and Bourke, 2016, Doran et al., 2019, Lenihan et al., 2019) and may also contribute to the widening productivity gap between firms. The management practice-productivity link is in line with recent work by Bloom and van Reenen (Bloom and Van Reenen, 2006, Bloom and van Reenen, 2007b, Bloom and Van Reenen, 2010). They report a positive correlation between the prevalence of structured management practices and firm performance – including productivity (Bloom et al., 2007, Bloom et al., 2014, Bloom et al., 2013, Bloom and van Reenen, 2007b, Bender et al., 2018), with additionally Broszeit et al. (2016) stating that “lower management quality being at least in part to blame for the differences in aggregate productivity between Germany and the US” (Broszeit et al. 2016, p.2). The importance of management innovations for firm level productivity growth was also identified in UK firms by Mol and Birkinshaw (2009). Their results suggest that firms may benefit to a greater extent from innovations in management practices rather than product and process innovations. However, they did not consider the potential of firm ownership to influence management practices.

As with productivity, the adoption and successful implementation of management practices differs across firms and countries. Bloom and Van Reenen (2010) report that the US has the highest management scores in general, followed by Germany, Japan, Sweden and Canada. This also speaks to a strand of the HRM practices literature which has touted the idea of best practice as indicative of US, Japanese and German multinationals (Smith and Meiksins, 1995), with the US especially pronounced due in part to their legacy of economic strength (Edwards et al., 2005). Next are a block of mid-European countries, including Ireland and the UK. Some European countries are at the bottom, such as Greece and Portugal, as well as developing countries like Brazil, China, and India. Bloom and Van Reenen (2010) report that differences in management practices are largely due to the size of the “long tail” of poorly managed firms. For example, relatively fewer U.S. firms fall into the poorly managed category compared to firms in Brazil and India. Importantly, countries and firms can differ with respect to ‘styles’ of management. American firms score highly on incentive practices, relative to Swedish firms, but poorly with respect to monitoring practices (Bloom and Van Reenen, 2010).<sup>3</sup>

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3 Distinctions between different types of management practices are elaborated on later in this section and definitions for different types of management practices are presented in Section 3 and more information is available in Table A and B of the Appendix.

The productivity benefits of adopting new technologies are considerable (OECD, 2015). However, successfully implementing new technologies can often necessitate significant organisational restructuring, which may require a 'best practice' approach to management practices. Bloom et al. (2012) report that foreign affiliates of US multinationals obtain higher productivity than non-US multinationals (and domestic firms) from their information technology (IT) capital and are also more IT intensive. They conclude that the US IT related productivity advantage is primarily due to superior "people management" practices (Bloom et al., 2012). The evidence suggests that foreign firms are generally better managed or have more formalised and sophisticated management practices than domestic firms (Bloom and Van Reenen, 2010). Multinationals have been found to transfer, at least in part, their management practices to plants abroad, even where the local context may provide constraining conditions (Bloom and Van Reenen, 2010, Burstein and Monge-Naranjo, 2009). As globalisation has continued apace there has been arguments that greater similarity in practice may arise as multinationals learn from others and thereby look to adopt 'global best practices'. Recent data from the Irish context - a highly international and FDI dependent economy – did not find much evidence of such a move amongst Irish owned multinationals in relation to their people management practices (McDonnell et al., 2014). Their research found considerable variation from 'US practices' amongst indigenous Irish multinationals. This may be viewed as somewhat surprising in the context of the globalisation thesis given these domestic multinationals are quite recent to the international market and with the heavy influence of US firms in Ireland one may have expected greater mimicry of 'successful' multinationals.

Due to the variation in management practices among firms, many scholars seek to understand the drivers of these differences. For example, firm size has again emerged as a significant driver of differences in management scores within British manufacturing businesses, controlling for family ownership, multinational status and firm age (ONS, 2018). Bloom and Van Reenen (2010) report that firms with 'better' management practices are larger, more productive, grow faster and have higher survival rates. In Germany, Broszeit et al. (2016) find that in addition to size, variations in management practices were also driven by foreign or domestic ownership, exporter status and the qualifications of managers.

### *2.3 Hypothesis Development*

As outlined above, foreign multinationals tend to have stronger or more formalised management systems



and practices vis-a-vis domestic firms (Bloom and Van Reenen, 2010). While greater integration between economies may suggest a convergence of management practices across countries and firms (Pudelko and Harzing, 2007), supporting evidence is limited or inconclusive (McDonnell et al., 2014). Therefore, we expect foreign-owned multinational companies to have more formalised or sophisticated management practices than most other types of firm ownership (e.g. domestic groups and domestic standalone companies). However, domestically owned multinationals may be an exception. Like their foreign counterparts, domestically owned multinationals arguably operate nearer the technological frontier than other domestic firms and are more exposed to international competition and knowledge from their international ventures. It is reasonable to expect that the gap in management practices between foreign owned multinationals and domestically owned multinationals is likely to be insignificant, relative to the differences previously found in the literature between foreign multinationals and domestic firms. Non-multinational domestic firms will not have the scale of international competitive pressures that the multinational company segment will possess. This thinking leads us to hypotheses *H1* and *H2* below:

*H1: Foreign-owned multinationals have more formalised and sophisticated management practices compared to (i) domestic group firms and (ii) domestic stand-alone firms.*

*H2: Domestic-owned multinationals have more formalised and sophisticated management practices compared to (i) domestic group firms and (ii) domestic stand-alone firms.*

Firms that have more formalised and sophisticated management practices (higher scores) are assumed to have better management practices. Management practices are often grouped as operations (i.e. lean manufacturing techniques), monitoring (i.e. performance assessment), targeting (i.e. types and measurement of targets/goals) and people management practices (i.e. talent development) (Bloom and Van Reenen, 2010). Generally, UK and Irish firms do not perform as well as other countries on these measures, particularly relative to US firms. In fact, UK firms under-perform compared to US firms on measures for operations, monitoring and targeting management practices. In addition, there is considerable evidence that affiliates of US multinationals in Europe tend to have much higher people-management scores than those of other countries. Bloom et al. (2012) put forward several reasons for this: a greater supply of human capital, intensity of graduate level employees and lower levels of labour market regulation. Bloom et al. (2012) Therefore, we not only expect foreign-owned multinationals to perform better than other domestic groups and stand-alone firms in general (*H1*), we also expect that foreign-owned multinationals will perform better than these types of firms for the level of formal-

isation and sophistication across each category of management practices. For similar reasons as prescribed earlier, we expect the differences between foreign and domestic multinationals to be insignificant across each category of management practices. And this contention, is partly supported by the findings of Bloom et al. (2012) where a higher level of people management practices was found in UK multinationals than other ownership types in the UK. Consequently, we devise the following hypotheses:

*H3: Foreign-owned multinationals have higher scores across all categories of management practices compared to (i) domestic group firms and (ii) domestic stand-alone firms.*

*H4: Domestic-owned multinationals have higher scores across all categories of management practices compared to (i) domestic group firms and (ii) domestic stand-alone firms.*

### **3. Data**

The data is sourced from the WMS and FAME. The WMS is a cross-country and industry survey that seeks to measure the formalisation and sophistication of management practices in firms. It was developed to explain the large and persistent total factor productivity (TFP) differences across multiple sectors and countries (Bloom et al., 2014). The data represents a random sample of medium to large (50-5,000 employees) sized firms in the manufacturing sector. We focus on the 2008 sample of firms that have their operations located in the United Kingdom and Ireland. The sample size employed for the analysis is 259 firms.

Careful consideration was given to the means of collecting information, and various noise control and sources of bias concerns were controlled for at the data collection stage, including validation of the data using two interviewers and repeat interviews to identify any discrepancies in evaluation methods (Bloom et al., 2014). However, some limitations of the data are identified. For instance, some important aspects of management practice are omitted in the survey such as strategic aspects of management including spending on R&D, introducing new products or processes, setting prices, advertising, decisions on whether to enter new markets, shutting down of existing operations and so on. The data is also limited with respect to firm characteristics, the operating environment and in terms of performance. In addition, it doesn't provide employee level data on these management practices. The intention of a practice developed by management may differ from its implementation as perceived by employees.

An advantage of the WMS is that unique identifiers are present which allow the data to be merged with the FAME database of companies in the UK and Ireland. In doing so additional information relating to the firm can be obtained. For the purpose of this study, data on the ownership of firms is obtained which allows for four ownership categories to be identified which are broadly consistent with Devereux and Loretz (2011). These four classifications are detailed in Table 1 and distinguish between standalone companies, domestic groups, domestically owned multinationals and foreign owned multinationals. The analysis presented subsequently compares the management practices of these four classifications of companies with the hypothesis that management practices are influenced by company type.

**<insert Table 1 here>**

Information in the WMS is collected from establishments in the form of an interview-based evaluation tool. Hired and trained interviewers evaluated the management practices by using open-ended questions that they ask plant managers in each firm. The firms were allocated a score of 1 (worst practice) to 5 (best practice) across 18 key management practices<sup>4</sup>. Firms received a low score if performance is not tracked, if it had no effective targets, had a complete tenure-based system of promotion and had no system that tackles persistent employee underperformance. A firm received a high score if it frequently monitored and improved its processes, set comprehensive targets, promoted high performing employees and addressed employee underperformance (Bloom et al., 2014).

**<insert Table 2 here>**

These 18 indicators of management practices are highly correlated with one another as they are attempting to achieve improvements in similar management dimensions. The WMS and previous research using these data (Bloom et al. 2014) aggregates these indicators into four main sub-components and one overall aggregate measuring the ‘quality’ or formalisation of management practices. Table 2 presents a brief definition of this aggregation process as well as definitions for each of the other variables utilised by this study. We distinguish between the *dependent variables* (i.e. the formal management practices reported), *independent or explanatory variables* (i.e. the ownership variables), and *control variables* (i.e. competitors, employment numbers etc.)

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4 See Table A in the Appendix where the 18 management questions are outlined.

which are included as they may theoretically impact management practices, and therefore are required to avoid misspecification bias in our empirical modelling.

We split the sample by type of firm by the four classifications as defined in Table 1. Table 3 provides descriptive statistics. 45 per cent of firms are foreign owned multinationals. 14 per cent are domestically owned multinationals. 21 per cent of the sample of firms are domestically owned and have no subsidiaries (here after referred to as standalone companies) and 20 per cent of firms are domestically owned and are a multi-plant type firm with domestic subsidiaries (here after referred to as domestic groups). Firms in the sample on average have 6 competitors and this varies in the sample from 1 competitor to '10 or more' competitors. Table 4 presents descriptive statistics by firm ownership type. Domestic groups face the most competition, whilst foreign multinationals face the least. All firm types outsource production and there is very little variation by firm type with respect to this activity. Domestic and foreign multinational companies have more employees relative to domestic stand alone or domestic group firms. Foreign multinational firms have a better educated workforce relative to other type of firms.

**<insert Table 3 here>**

**<insert Table 4 here>**

Our primary interest is the difference in management practices by firm type. We focus on five aggregate measures of the 18 management practices<sup>5</sup>: (1) management - which is an aggregate of all management practices; (2) operations - consisting of lean manufacturing technique indicators (average of MP1 and MP2 in Table A in Appendix); (3) monitor – consisting of process documentation, performance tracking, performance review, performance dialogue and consequence management (average of MP3 to MP7); (4) target – consisting of type of targets, interconnection of goals, time horizon, goals are stretching and clarity of goals and measurement (average of MP8 to MP12) and finally (5) people – consisting of instilling a talent mind-set, building a high-performance culture, making room for talent, developing talent, creating a distinctive employee value proposition and retaining talent (average of MP13 to MP18). Figure 1 plots the management scores by firm

5 See Table A and Table B in Appendix for the list of management practices and a detailed example of a Management Practice Question and Responses. For a detailed overview of the robust survey instruments and methodology see <https://worldmanagementsurvey.org/survey-data/methodology/> for more information.

type. Clearly, foreign multinational companies perform better across management practice indicators. They are the only company type to have averages above a score of 3 in any of the indicators and they successfully achieve this across all. This supports our a-priori expectations, in line with previous literature (Bloom et al., 2012, Bloom and Van Reenen, 2010). However, this is not sufficient to confirm our hypotheses. Multinational companies are also usually larger, have a more educated workforce etc, so in order to identify whether they have stronger management practices because they are multinationals, or because they are large with an educated workforce, a causal econometric model must be used as opposed to relying on descriptive statistics. In the next section, we employ seemingly unrelated regression analysis to identify if there are significant differences across firm type, whilst controlling for firm characteristics and related relationships between different management practice types.

**<insert Figure 1 here>**

#### 4. Methodology

When analysing overall formalisation and sophistication of management practices, we estimate equation (1) using ordinary least squares.

(1)

where  $y_i$  is the overall formalisation and sophistication of the management practices employed by firm  $i$ .<sup>6</sup>  $D_i$ ,  $S_i$ , and  $M_i$  are binary variables which take a value of 1 if firm  $i$  is a stand-alone, domestic group or domestic multinational firm and 0 otherwise. The reference category is foreign multinationals.  $\alpha$ ,  $\beta$ , and  $\gamma$  are coefficients which show the differences in the formalisation and sophistication of management practices between stand alone, domestic group, and domestic multinationals relative to foreign multinationals and are the key parameters of interest in our analysis.  $X_i$  is a matrix of control variables for firm  $i$  which are listed in Table 2.  $\epsilon_i$  is the error term.

When considering the four sub-indices of management practices the following SUR model is specified:

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<sup>6</sup> We note that OLS is used over an ordered model (such as an ordered logit model) as the data, when aggregated to our total management practice index or any of our four sub-indices loses its categorical nature and, while still bound between 1 and 5, it is not confined to whole numbers. This means that ordered econometrics models cannot be applied.

(2)

(3)

(4)

(5)

The subscripts *op*, *mo*, *ta*, and *pe* refer to management practices associated with operations, monitoring, targeting, and people respectively. All other variables are defined as above. Note that while the coefficient shows the effect of being stand alone on the designated management practice, the subscripts show that this effect may be different for each of the types of management practice.

Given that unobservable firm specific characteristics are likely to impact on each of the four indicators of management practices this will likely result in the error terms of these equations ( , , and ) being correlated. This correlation will result in biased estimates of the variance-covariance matrix of the individual regression models, which has implications for the standard errors of the model and consequently the t-tests. To control for this bias, equations (2) through (5) are estimated as a system of equations using seemingly unrelated regression analysis. The precise estimation technique is the asymptotically efficient, feasible, generalized least-squares algorithm as described in Greene (2012, pp. 292-304).

## 5. Results

Tables 5 and 6 present the OLS estimates of equation (1) and the SUR estimates of equations (2-5) respectively. The negative and significant coefficients on the ownership variables indicate an association between firm ownership and formalisation and sophistication of management practices across all models. Regarding *Hypothesis 1 (H1)*, which states that foreign-owned multinationals have more formalised management practices compared to domestic stand alone and domestic groups firms - we find significant evidence. The coefficient for stand-alone firms indicates that these firms have an average score (out of 5) of 0.312 less than foreign owned

multinationals. Domestic group firms have an average score of 0.292 less than foreign owned multinationals. We also identify that *Hypothesis 2 (H2)* should be rejected. In order to ascertain whether there is a hierarchy between the management practices of stand-alone, domestic group, and domestic multinationals we perform a series of t-tests to compare their coefficients. In all cases we fail to reject the null hypothesis of no significant difference. Therefore, statistically, there is no significant difference between the management practices of stand-alone, domestic group, and domestic multinationals. Furthermore, domestic multinationals have a significantly lower average score of 0.334 than foreign owned multinationals. These results suggest foreign owned multinationals possess more formalised management practices vis-a-vis the other three classifications of companies, which is in line with our expectations for H1, but not H2. Consequently, we can conclude that all domestic firm types possess less formalised management practices when compared with foreign multinationals.

**<insert Table 5 here>**

Turning to *Hypothesis 3 (H3)* which specifies that foreign-owned multinationals have higher scores across all categories of management practices compared to domestic stand alone and grouped firms - we find *in most cases* support for this hypothesis. The 'people' category is an exception as it shows the least difference in management practices across firm ownership. For people management practices, there are no significant differences in domestic stand-alone firms relative to foreign owned multinationals. However, domestic group companies score 0.202 significantly less than foreign multinationals.

We also identify that *Hypothesis 4 (H4)* should be rejected. For H4, we assess whether there is a hierarchy between the four aggregate management practices categories for stand alone, domestic group, and domestic multinationals. This is completed via a series of t-tests to compare their coefficients. Again, in all cases we fail to reject the null hypothesis of no significant difference. This leads us to conclude that, statistically, there is no significant difference, for any of the four aggregate categories, between the management practices of stand-alone, domestic group, and domestic multinationals for 'operations', 'monitoring', 'targeting' and 'people'.

In terms of the magnitude of effects, a similar pattern is found in Table 6 to Table 5 across the specific sub-indexes. For 'operations', the formalisation of management practices in stand-alone, domestic group, and do-

mestic multinationals score between 0.564 and 0.667 lower than foreign multinationals. In the case of ‘monitoring’, the figures are between 0.244 and 0.333 less for all firms compared to foreign owned multinationals. While in the ‘targeting’ category they are between 0.339 and 0.469 less on average.

We can conclude from our analysis that all types of domestic firms are less formalised in their management practices when compared with foreign multinationals. As noted above the only exception is the ‘people’ category, where domestic group firms are less formalised in their practices quality relative to foreign firms but all others are statistically similar.

The marginal differences observed across each of our sub-aggregates’ highlights that the impact of ownership type is not symmetric across all four categories of management practices and we find more nuanced mixed results in support of *H3*. In some management practice areas, there are wider/narrower performance gaps for different firm ownership types.

<insert Table 6 here>

## 6. Conclusions and Discussion

7. (Bloom et al., 2014, Bloom and Van Reenen, 2010, Bloom and Van Reenen, 2007a)  
(Doran et al., 2013)
- 8.

(Syverson, 2004, Hsieh and Klenow, 2009)(Bloom et al., 2014, Bloom and Van Reenen, 2010, Bloom and van Reenen, 2007b)he objective of this paper is to provide a clearer picture on the domestic and foreign ownership similarities and differences with respect to management practices in the UK and Irish contexts. McDonnell et al. (2014) have previously pointed to the failure of many studies to distinguish between domestic firms and domestic multinational firms when comparing the management performance of foreign and domestic firms. We have attempted to fill this gap in the literature, and we expanded our analysis to further examine the influence of ownership type, whilst controlling for firm characteristics, on the different domains of management practices using a combination of datasets from FAME and the WMS. Foreign owned multinationals are more formalised in their management practices when compared to any of the other three classifications of companies (stand-alone domestic companies; domestic groups; and domestic multinationals). The management performance dichotomy between foreign and domestic firms found previously in the literature extends



to all types of domestic firms, whether they are multinational companies or not.

As we identify, the differences in the performance of management practices between foreign and domestic firms are particularly wide for the 'operations' category where the performance of foreign multinationals firms with respect to lean (modern) manufacturing techniques used to enhance productivity, reduce costs and improve quality are far higher, relative to all domestic type firms. This suggests that domestic firms may be behind in introducing modern manufacturing techniques such as just-in-time, automation, flexible manpower and support systems in a formal way. Consequently, from a policy perspective, focusing first on interventions and supports in modern manufacturing techniques across domestic type firms may prove to be more fruitful in bridging the management practice gap across foreign and domestic firms.

The dichotomy in management performance evident in the literature between foreign and domestic owned firms continues, but the reasons why are still ambiguous. Perhaps, serious underlying structural defects exist in the Irish and UK domestic ecosystems which is translated and embedded in domestic firm formation and ownership. Domestic institutional failures may be resulting in a lack of necessary entrepreneurial, education and managerial supports, specialised training, supportive taxes or distortive regulatory regimes (Bloom and Van Reenen, 2010) resulting in less formalised management practices amongst domestic firms in the UK and Ireland. Or possibly it is a spontaneous outcome of product market competition (Bloom and Van Reenen, 2010). Although, we find no support in our control variables, that competition is a driving factor explaining management differences across ownership type.

Alternatively, the results may be a consequent of poor spatial spill-overs between foreign and domestic firms (Feldman, 1999). It is increasingly accepted that FDI is likely to have important indirect effects on host economies by providing learning spill-over or diffusion effects from foreign to domestic companies in the areas of modern technology and management practices (Blomström and Kokko, 1998). It is not possible to determine from the results if there are a lack of management spill-overs, but the stark gaps in management quality performance between foreign and domestic firms suggests the role of management practice diffusion could be a possible causal factor worthy of greater consideration. There is wide scope for future research in this area.

We must also note the limitations of our analysis. The matched data used in this paper is limited by the absence of longitudinal information on management practices. Future research should focus on addressing this limitation to see if the variance of management practices between foreign and domestic ownership types persist through time. This would also assist in confirming a causal relationship between ownership type and management practices and this would further avoid any possible self-selection or success sample biases that may exist in the data. Whilst the WMS is a unique dataset that uses independent interview-based evaluation tools from the plant managers perspective, a potential drawback of the survey methodology is that the evaluation does not include employee perspectives on management practice formalisation and sophistication.

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*Figure 1: Management Practices by Firm Ownership*

*Table 1: Definition of Type of Firm*

Company Type	Standalone domestic companies	Domestic groups	Domestic owned multinationals	Foreign owned multinationals
Abbreviation	SA	DG	DM	FM
Definition	Standalone companies are companies which are domestically owned and have no subsidiaries.	Domestic groups are companies which are domestically owned and have domestic subsidiaries.	Domestic owned multinationals are domestically owned companies who have subsidiaries in other countries.	Foreign owned multinationals are foreign owned companies who have subsidiaries in the domestic country.

Table 2: Variable Definitions

<b>Variable</b>	<b>Definitions</b>
<i>Dependent Variables</i>	
Management	Average of all Management Practices
Operation	Average of Operation Management Practices
Monitor	Average of Monitor Management Practices
Target	Average of Target Management Practices
People	Average of People Management Practices
<i>Key Independent Variables</i>	
Standalone domestic companies	Binary variable 1/0
Domestic groups	Binary variable 1/0
Domestic owned multinationals	Binary variable 1/0
Foreign owned multinationals	Binary variable 1/0
<i>Control Variables</i>	
No of Competitors	No of Competitors (1-10+)
Outsourced activity (%)	% of production outsourced
Log of employment	Log of number of firm employees as declared at interview
Workforce with third level education (%)	% of all workforce with a college degree
Log of firm age	Log of Age of Firm
UK	=1 if the firm is located in the UK, 0 otherwise
Northern Ireland	=1 if the firm is located in Northern Ireland, 0 otherwise
Republic of Ireland	=1 if the firm is located in the Republic of Ireland, 0 otherwise

Note: While each of the 18 management practices are measured on a scale and take a value of 1,2,3,4, or 5 the four average aggregated and the total index, by construction, are not scaled and can take any value between 1 and 5 (i.e. not limited to whole numbers).

*Table 3: Descriptive Statistics of Variables*

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Management	2.95	0.68	1.27	4.88
Operations	2.89	1.08	1	5
Monitor	3.17	0.76	1.4	5
Target	2.92	0.81	1	4.8
People	2.82	0.66	1.33	5
Standalone companies (SA) (%)	0.21	0.41	0	1
Domestic Groups (DG) (%)	0.20	0.4	0	1
Domestic Owned Multinationals (DM) (%)	0.14	0.35	0	1
Foreign Owned Multinationals (FM) (%)	0.45	0.5	0	1
No of Competitors	6.36	3.06	1	10
Outsourced activity (%)	10.51	20.01	0	100
Log of employment	5.71	1.17	3.82	8.49
Workforce with third level education (%)	13.34	17.32	0	100
Log of firm age	3.53	0.88	0	5.64
UK	0.38	0.48	0	1
Northern Ireland	0.25	0.44	0	1
Republic of Ireland	0.36	0.48	0	1

*Table 4: Mean Descriptive Statistics of Variables by Firm Type*

<b>Variable</b>	<b>SA</b>	<b>DG</b>	<b>DM</b>	<b>FM</b>
Management	2.76	2.69	2.75	3.22



Operations	2.5	2.51	2.58	3.34
Monitor	2.94	2.94	2.96	3.44
Target	2.76	2.64	2.62	3.22
People	2.71	2.58	2.74	3.02
No of Competitors	6.75	7.11	6.81	5.71
Outsourced activity (%)	10.49	10.96	10.25	10.41
Log of employment	5.47	5.29	5.62	6.02
Workforce with third level education (%)	10.84	7.96	12.25	17.28
Log of firm age	3.55	3.82	3.66	3.34
UK	0.18	0.56	0.42	0.41
Northern Ireland	0.4	0.19	0.22	0.22
Republic of Ireland	0.42	0.25	0.36	0.37

*Table 5: OLS Estimates of Equation (1)*

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VARIABLES	(1) Average of all management questions
Stand Alone	-0.312*** (0.103)
Domestic Group	-0.292*** (0.107)
Domestic Multinational	-0.334*** (0.115)

No. of competitors	-0.0116 (0.0126)
% of production outsourced	-0.000898 (0.00185)
Log of number of employees	0.114*** (0.0329)
% of all workforce with a college degree	0.0132*** (0.00229)
Log of age of the firm	-0.0525 (0.0429)
Northern Ireland	0.151 (0.0981)
Republic of Ireland	-0.0928 (0.0919)
Constant	2.565*** (0.279)
Observations	259
R-squared	0.296

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 6: Seemingly Unrelated Regression Analysis

VARIABLES	(2) operations	(3) monitor	(4) target	(5) people
Stand Alone	-0.667*** (0.164)	-0.327*** (0.118)	-0.340*** (0.123)	-0.156 (0.101)
Domestic Group	-0.564*** (0.170)	-0.244** (0.122)	-0.339*** (0.128)	-0.202* (0.105)
Domestic Multinational	-0.609*** (0.183)	-0.333** (0.132)	-0.469*** (0.138)	-0.130 (0.113)
Foreign Multinational	(base category)			
No. of competitors	0.00937 (0.0200)	-0.0214 (0.0144)	-0.00605 (0.0151)	-0.0149 (0.0124)
% of production outsourced	-0.00114	0.000609	-0.00139	-0.00167

	(0.00294)	(0.00211)	(0.00221)	(0.00181)
Log of number of employees	0.124**	0.143***	0.123***	0.0783**
	(0.0522)	(0.0375)	(0.0394)	(0.0322)
% of all workforce with a college degree	0.0173***	0.0115***	0.0132***	0.0134***
	(0.00364)	(0.00261)	(0.00274)	(0.00224)
Log of age of the firm	-0.0830	-0.0346	-0.0186	-0.0854**
	(0.0682)	(0.0490)	(0.0515)	(0.0421)
Northern Ireland	0.110	0.103	0.249**	0.124
	(0.156)	(0.112)	(0.118)	(0.0962)
Republic of Ireland	-0.185	-0.0705	-0.0112	-0.149*
	(0.146)	(0.105)	(0.110)	(0.0901)
Constant	2.580***	2.620***	2.308***	2.729***
	(0.444)	(0.319)	(0.335)	(0.274)
Observations	259	259	259	259
R-squared	0.250	0.227	0.243	0.243

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table A: Dimensions of Management Practices from World Management Survey

MP1) Introduction of modern manufacturing techniques	What aspects of manufacturing have been formally introduced including just-in-time delivery from suppliers, automation, flexible manpower, support systems, attitudes, and behaviour?
MP2) Rationale for introduction of modern manufacturing techniques	Were modern manufacturing techniques adopted just because others were using them, or are they linked to meeting business objectives like reducing costs and improving quality?
MP3) Process problem documentation	Are process improvements made only when problems arise, or are they actively sought out for continuous improvement as part of a normal business process?
MP4) Performance tracking	Is tracking ad hoc and incomplete, or is performance continually tracked and communicated to all staff?
MP5) Performance review	Is performance reviewed infrequently and only on a success/failure scale, or is performance reviewed continually with an expectation of continuous improvement?
MP6) Performance dialogue	In review/performance conversations, to what extent is the purpose, data, agenda, and follow-up steps (like coaching) clear to all parties?
MP7) Consequence management	To what extent does failure to achieve agreed objectives carry consequences, which can include retraining or reassignment to other jobs?

MP8) Target balance	Are the goals exclusively financial, or is there a balance of financial and nonfinancial targets?
MP9) Target interconnection	Are goals based on accounting value, or are they based on shareholder value in a way that works through business units and ultimately is connected to individual performance expectations?
MP10) Target time horizon	Does top management focus mainly on the short term, or does it visualize short-term targets as a “staircase” toward the main focus on long-term goals?
MP11) Targets are stretching	Are goals too easy to achieve, especially for some “sacred cows” areas of the firm, or are goals demanding but attainable for all parts of the firm?
MP12) Performance clarity	Are performance measures ill-defined, poorly understood, and private, or are they well-defined, clearly communicated, and made public?
MP13) Managing human capital	To what extent are senior managers evaluated and held accountable for attracting, retaining, and developing talent throughout the organization?
MP14) Rewarding high performance	To what extent are people in the firm rewarded equally irrespective of performance level, or are rewards related to performance and effort?
MP15) Removing poor performers	Are poor performers rarely removed, or are they retrained and/or moved into different roles or out of the company as soon as the weakness is identified?
MP16) Promoting high performers	Are people promoted mainly on the basis of tenure, or does the firm actively identify, develop, and promote its top performers?
MP17) Attracting human capital	Do competitors offer stronger reasons for talented people to join their companies, or does a firm provide a wide range of reasons to encourage talented people to join?
MP18) Retaining human capital	Does the firm do relatively little to retain top talent or do whatever it takes to retain top talent when they look likely to leave?

Source: World Management Survey

Table B: Example of Management Practice Question and Responses

Retaining Talent		
<i>Tests whether the organization will go out of its way to keep its top talent</i>		
<p>a) If you had a star performer who wanted to leave what would the company do?</p> <p>b) Could you give me an example of a star performers being persuaded to stay after wanting to leave?</p> <p>c) Could you give me an example of a star performer who left the company without anyone trying to keep them?</p> <p style="text-align: center;">Score: 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/></p>		
Score 1	Score 3	Score 5
We do little to try to keep our top talent.	We usually work hard to keep our top talent.	We do whatever it takes to retain our top talent
A firm lets people leave the company if they want. They do nothing to keep those people since they think that it would make no sense to try to keep them. Management does not think they can keep people if they want to work somewhere else. The company also will not start salary negotiations to retain top talent.	If management of a firm feels that people want to leave the company, they talk to them about their reasons for leaving and what the company could change to keep them. This could be more responsibilities or a better outlook for the future. Managers are supposed to “take-the-pulse” of employees to check satisfaction levels.	A firm knows who its top performers are. If any of them signal an interest to leave the firm pulls in senior managers and even corporate Head Quarters to talk to them and try and persuade them to stay. Occasionally they will increase salary rates if necessary and if they feel the individual is being underpaid relative to the market. Managers have a responsibility to try to keep all desirable staff.

Source: World Management Survey

Notes: 1. Any score from 1 to 5 can be given, but the scoring guide and examples are only provided for scores of 1, 3 and 5. Multiple questions are used for each dimension to improve scoring accuracy. 2. Adapted from