

The Effects of Overseas Business Expansion on Firm Performance: Evidence from Australia

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Abbreviations and Acronyms

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
BLD	Business Longitudinal Database
FDI	Foreign Direct Investment
MNE	Multinational Enterprise
GMM	Generalized Method of Moments
SUR	Seemingly Unrelated Regression

Executive Summary

This report examines the impacts of Australian firms' overseas business activities (e.g. import and export) on their performance, namely employment of both casual and full-time workers, profitability and total sales revenue.

Utilizing a micro dataset from the Business Longitudinal Database, Australia, which is collected by ABS and covers the period from 2006-07 to 2010-11, we find:

- Import generates positive impacts on employment of both casual and full-time workers and total sales revenue, and weakly and negatively affects profitability;
- Export negatively affects employment of both casual and full-time workers, and positively affect sales revenue.
- Outsourcing negatively affects employment of casual workers but not full-time workers, which occurs due to the size effect (growth opportunity);

One point that is worth of noting is that the negative impact, for example the perceived negative impact of outsourcing on employment, is likely not to be as severe as one would expect, which occurs due to the potential growth opportunity. Policy makers shall not discourage a firm's engagement of overseas business activities. Even if an overseas business activity is perceived to generate a negative impact at home, it is likely that the potential growth opportunity (size effect) can offset such negative impact.

1. Introduction

Compared with business activities in domestic market, a firm's overseas business activities, such as investment and export, are usually more costly. As such, everything else being equal, more capable firms (namely firms with higher productivity endowment) are more likely to engage in such overseas business activities. In addition, owing to the more complex nature of overseas markets, the firm that has such overseas business expansion is likely to benefit from such activities, in terms of improving its productivity. The productivity improvement subsequently can increase the firm's performance in domestic market. For example, in exporting, more productive firms export and less productive firms serve only domestic market. At the same time, exporting help firms to improve their productivity, namely learning by exporting.

Some overseas business activities are intended for purchasing inputs. Firms may purchase intermediate inputs from overseas markets (namely import of intermediate inputs). Firms may outsource some components of their business activities overseas, for example an Australian telecommunication firm can outsource its call center to the Indian market. These business activities generally intend to save operation costs at domestic market. Not surprisingly, they are likely to reduce a firm's demand for inputs from the domestic market in the very short term. In the longer term, it is also likely that these cost-saving operation strategies result in a better performance at the domestic market, which enables the firm to grow and in turn leads to a higher demand for domestic inputs.

In Australia, as a small open economy, its firms are actively engaged in overseas business operation, from both the output perspective (such as exports) and input perspective (such as outsourcing). Conceptually, one expects such overseas business expansion to affect a firm's performance in the domestic (Australian) market. Given such theoretical expectation, this report intends to empirically explore whether Australian businesses' overseas operation affect their performance in the domestic market, in terms of three aspects, namely their demand for domestic workers (domestic employment), size (sales revenue) and profitability. Specifically, we utilize a multi-year survey dataset from Australian Bureau of Statistics (ABS) to estimate firms' performance as a function of overseas business activities (measured by a set of variables to be discussed later), where we include control variables and consider possible endogeneity issue for some explanatory variables.

We find that outsourcing negatively affects employment of casual workers but not full-time workers, and negatively affects a firm's profitability and positively affect its total sales revenue; import positively affects employment of both casual and full-time workers and total sales revenue, and weakly and negatively affects profitability; export negatively affects employment of both casual and full-time workers, and positively affect sales revenue.

By investigating the impacts of overseas business expansion on firms' performance, this study makes contributions to the existing literature from two aspects. First, this study sheds light on a better understanding of the interaction between a firm's overseas business activities and its performance in the domestic market empirically. Such interaction is of importance in that it can be used in policy setting to achieve a better outcome. Second, policy wise, this study explores an economic issue that is of public interest. The general public is interested to learn how some firms' overseas business activities can affect their operation in the domestic market, which is of welfare implication to the society. For example, if outsourcing reduces a firm's demand for workers in the domestic market, then an increasing in outsourcing activities is of concern to domestic workers.

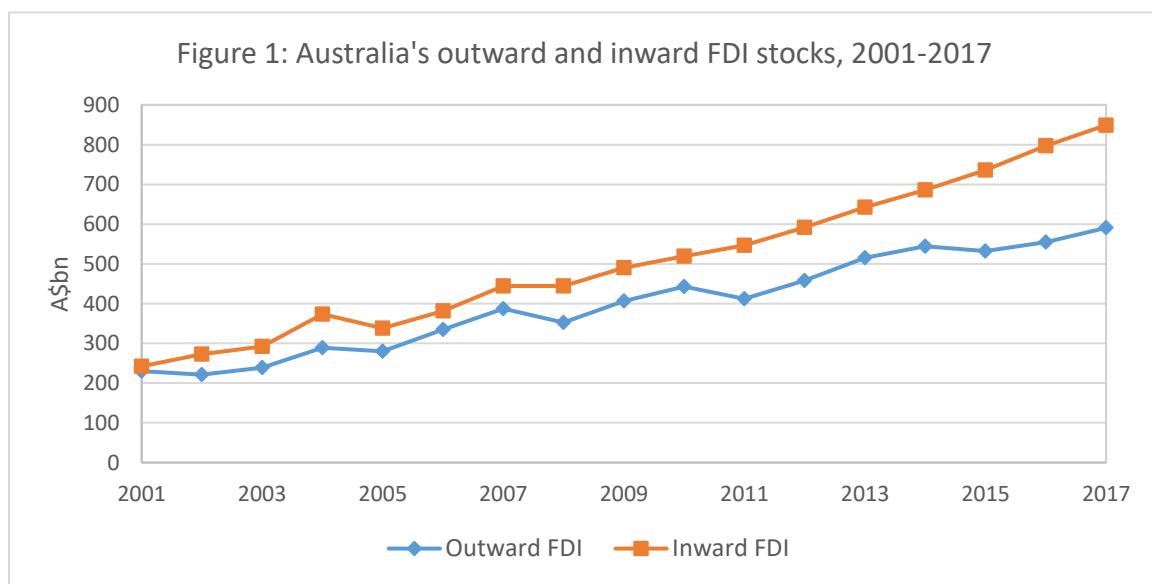
The rest of the report is organized into six sections. In section two, we describe an overview of the overseas business expansion by Australian businesses at an aggregate level, which provides background information for this study. Section three briefly surveys existing empirical studies on the influence of overseas business expansions. In section four, we establish the empirical model, which is used in estimating the impacts of overseas business expansion, and discuss the estimation strategy. Section five presents the dataset and summary statistics of dependent and explanatory variables for the regressions. Section six reports the regression results and discusses the associated policy implications. Section seven concludes the paper.

2. Overseas Expansions of Australian Businesses: An Overview

In this section, we discuss Australian businesses' overseas expansion at an aggregate level from two perspectives, namely the foreign direct investment (FDI), import and export.

2.1 Outward FDI

Figure 1 compares Australia's outward and inward FDI stocks, measuring the total levels of direct investment during 2001-2017. The data were obtained from Australian Bureau of Statistics database (ABS, 2018a). While the two amounts are rather close at the beginning of the reported period, inward FDI has exhibited a faster growth rate than outward FDI over time. The gap widened sharply since 2010, which might capture a more pronounced influence on Australian outward investment following the global financial crisis. Furthermore, better performance of inward FDI can also be explained the more recent impact of the commodity boom and investment stimulus into the resource sector in Australia (Thirlwell, 2016). By 2018, outward FDI stock reached A\$590.6 billion, which is roughly 70 per cent of inward FDI stock (A\$849.1 billion). Accordingly, Australia has remained a major international investor and destination, ranking the world's 17th and 13th largest economy in terms of outward and inward FDI, respectively (UNCTAD, 2018).



Source: Authors' calculations from ABS database (ABS, 2018a)

Table 1 reports the ten most popular markets that attract Australia's outward investment in 2001 and 2017. Of these, the top two destinations, namely the United States and the United Kingdom, remain unchanged over nearly two decades. The gaps in stocks (and shares) between the two major recipient countries has been narrowed from three times in 2001 to twice in 2017. While the share of the United Kingdom is stable at around 15 per cent that of the United States fell sharply from 46.7 per cent to 29.1 per cent over this period. Furthermore,

New Zealand – a traditional destination of Australian overseas investment – shows a slight drop in ranking from the third to the fourth in 2017, accounting for 4.5 per cent of total stock. Compared to 2001 list, 2017 list observes three new entrants (i.e., Japan, Cayman Islands, and France) and three economies exiting (i.e., Canada, Papua New Guinea, and Indonesia).

Table 1. Top 10 economies where Australian companies invest abroad, 2001 and 2017

Rank	Economy	2001		2017		Share (%)
		Stock (A\$ bn)	Share (%)	Economy	Stock (A\$ bn)	
1	United States	107.4	46.7	United States	664.5	29.1
2	United Kingdom	36.6	15.9	United Kingdom	333.1	14.6
3	New Zealand	16.4	7.1	Japan	125.1	5.5
4	Hong Kong	4.9	2.1	New Zealand	103	4.5
5	Canada	3.6	1.6	China	77.1	3.4
6	Singapore	2.1	0.9	Germany	73.6	3.2
7	Papua New Guinea	1.3	0.6	Cayman Islands	63.3	2.8
8	Germany	1	0.4	Singapore	59.4	2.6
9	Indonesia	0.5	0.2	France	51	2.2
10	China	0.4	0.2	Hong Kong	47.4	2.1

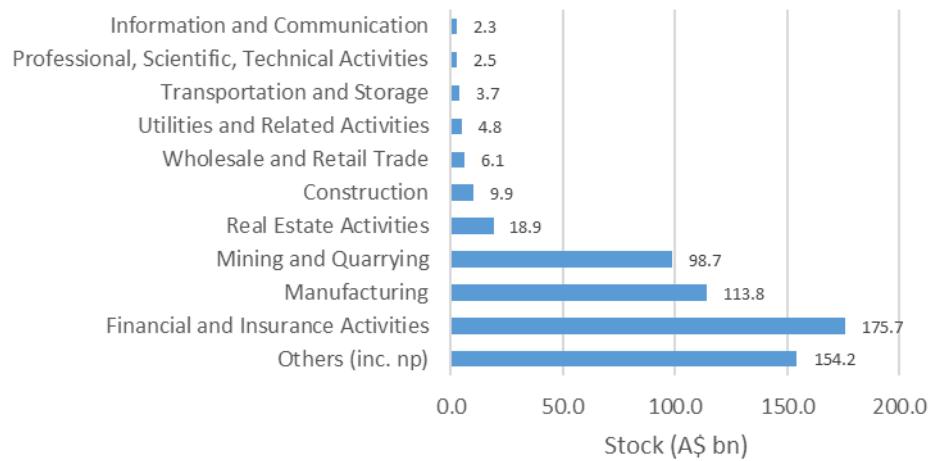
Source: Authors' calculations from ABS database (ABS, 2018a)

The growing importance of Asian economies, Japan and China in particular, as favoured investment destinations is a remarkable shift in the geographical choices of Australia's outward FDI. By 2017, Japan has risen (from outside of top ten in 2001) to become the third largest recipient country of Australian investment, having the stock and share of A\$125.1 billion and 5.5 per cent, respectively. Similarly, China has also become increasingly popular in attracting Australian businesses over the period, claiming a higher rank from the tenth in 2001 to the fifth in 2017. Also note that the share of this rising economy excludes the contribution of Hong Kong (a special administrative region of China), which remains a major location despite a lower rank in 2017. Given the declining shares of traditional destinations (especially, the United States and New Zealand), the sizeable increases in relative importance of these two Asian economies and others outside the top three indicate geographical diversification and redirection by Australian companies in locating their expansion abroad.

Figure 2 depicts Australia's outward FDI profile by industry in 2017, following to the latest data released by ABS (2018). Listed industries are categorized by the Australian and New Zealand Standard Industrial Classification (ANZSIC). Australian companies mostly

make their overseas investment in three major industries, and their combined values are worth A\$388.2 billion, accounting for 65.7 per cent of total outward stock in this year. Of these, the largest industry is financial and insurance, which contributes A\$175.7 billion to total investment stock (or an equivalent share of nearly 30 per cent). The second most favoured industry among Australian businesses abroad is manufacturing with the relative stock and share being A\$113.8 billion and 19.3 per cent, respectively. Claiming the third position is mining and quarrying industry, which attracts A\$98.7 billion of Australian outward investment and accounts for 16.7 per cent of total stock in 2017. The remaining industries are relatively modest in terms of investment values. Note that data on several industries are not available for publication (i.e., np), including agriculture, forestry and fishing.

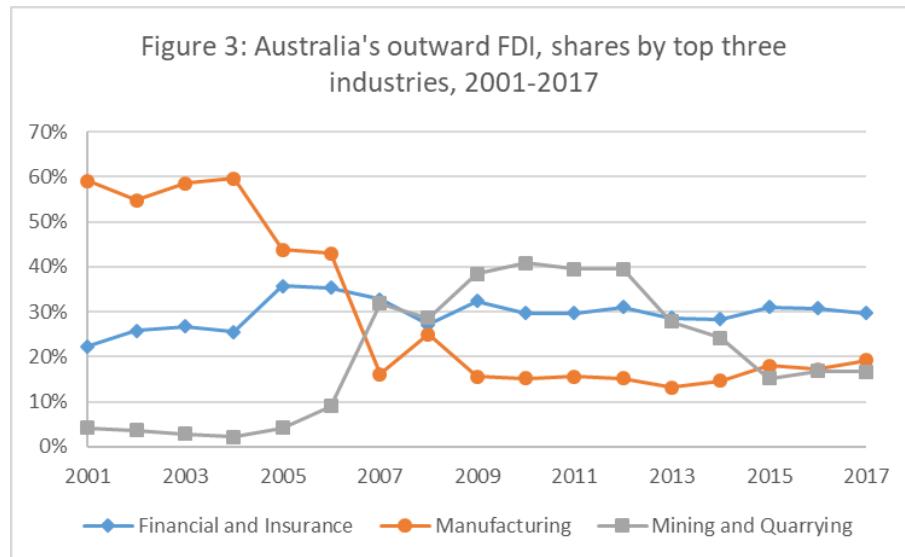
Figure 2: Australia's outward FDI by industry, 2017



Source: Authors' calculations from ABS database (ABS, 2018a)

Given the dominant shares of the top three industries, further illustration of their relative contributions from 2001 to 2017 is provided in Figure 3. Accordingly, three major observations can be made on the shifting industry composition of Australia's outward FDI during this period. First, the largest industry (in 2017), namely finance and insurance, has demonstrated its continued importance over the years, showing an average share of 29.6 per cent of total stock. Second, manufacturing industry has declined sharply in relative proportion from 60 per cent (2001) to 16 per cent (2007), then remaining stable at around 17 per cent during the last ten years or so. Last but not least, mining and quarrying industry shows a rather

fluctuating pattern over this period, which is characterized by a notable rise in the first 10 years and a sharp fall afterwards.



Source: Authors' calculations from ABS database (ABS, 2018a)

2.2 Import and Export

Figure 4 compares Australian exports and imports of goods and services over the period 2001-2017. Overall, an upward trend can be observed from both directions of trade. Notably, the country achieved trade balance as exports and imports reached roughly A\$157 billion at the beginning of the reported period 2001-2002. Nonetheless, Australian trade exhibited persistent deficit in six consecutive years due to a marked decline of exports during 2003-2004. Till 2009, the balance of trade gained a slight surplus of nearly A\$3 billion before a significant drop of both values in the following year. While overall trade bounced back quickly after the shock of global financial crisis, exports show a more fluctuating pattern than imports, mostly maintaining deficit position. By 2017, exports increased substantially to reach the record high of A\$373 billion, generating the largest surplus (around A\$11 billion) since 2001.



Source: Authors' calculations from ABS database (ABS, 2018b)

Table 2 presents the top 10 export markets of Australian companies in two selected years 2001 and 2017. The first noticeable change is the remarkably rising importance of China from the 7th largest export market (5.9%) in 2001 to the most important market (29.5%) in 2017. China's share in Australian exports is even greater than the combined share of remaining four countries in the top five. While Japan and Republic of Korea remained in the top three with slight decreases in relative proportions, United States fell sharply from the second largest market (10.6%) in 2001 to the fourth position (5.6%) in 2017. In addition, two traditional trade partners (i.e., New Zealand and United Kingdom) also claim lower shares and rankings in the market composition. Compared to 2001 list, 2017 list shows the strong emergence of another Asian major market (i.e., India as the fifth largest destination) and one exiting (i.e., Indonesia).

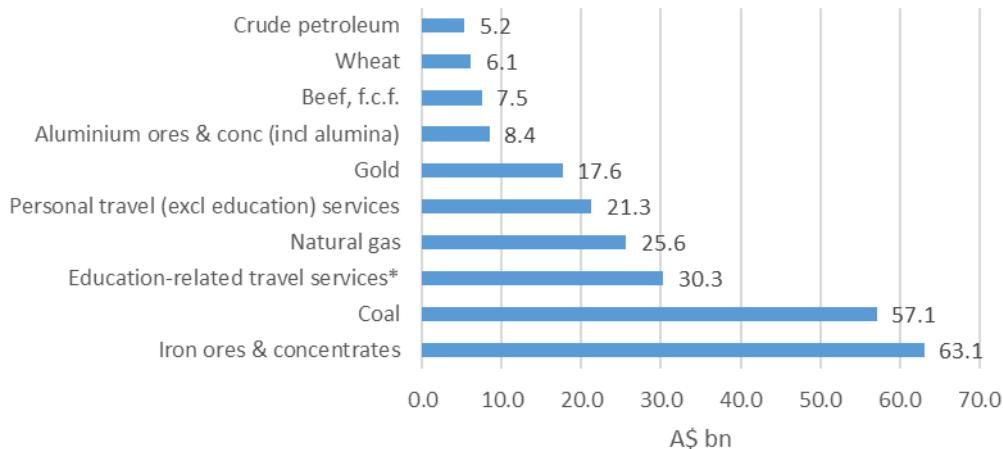
Figure 5 shows main exports of goods and services of Australian companies in 2017. The depicted composition of top exports indicates the dominant contribution of three groups, namely minerals, travel-related services, and agricultural products. Notably, mineral exports represent six out of 10 major products, having a combined value and share of A\$177.1 billion and nearly 50 per cent of total exports in the year, respectively. Two services make it to the top ten, being ranked the third (education) and fifth (tourism). Their accumulated value is A\$51.5 billion, constituting roughly 14 per cent. Lastly, two agricultural products of beef and wheat are also major Australian exports though their total value (A\$13.5 billion) and relative share (about 4 per cent) are much lower than those of the other two groups.

Table 2. Top 10 export markets of Australian companies, 2001 and 2017.

Rank	Market	2001		2017		
		Value (A\$ bn)	Share (%)	Market	Value (A\$ bn)	Share (%)
1	Japan	26.2	16.7	China	110.3	29.5
2	United States	16.6	10.6	Japan	44.6	12.0
3	Republic of Korea	10.9	7.0	Republic of Korea	22.8	6.1
4	New Zealand	10.2	6.5	United States	20.8	5.6
5	United Kingdom	9.3	5.9	India	19.2	5.2
6	China	9.3	5.9	Hong Kong	15.8	4.2
7	Singapore	7.4	4.7	New Zealand	14.0	3.8
8	Hong Kong	5.6	3.6	United Kingdom	12.6	3.4
9	Taiwan	5.3	3.4	Singapore	11.2	3.0
10	Indonesia	4.3	2.7	Taiwan	10.0	2.7

Source: Authors' calculations from ABS database (ABS, 2018b)

Figure 5. Australian main exports of goods and services, 2017



* Include international expenditure on tuition fees and living expenses

Source: Authors' calculations from ABS database (ABS, 2018b)

3. Related Literature

Overseas business expansion has risen as a viable strategy adopted by firms initially in developed economies and recently in emerging economies. It can take different forms, which capture increased engagement and linkages of domestic firms with foreign markets. Notably, outward foreign direct investment (FDI), exporting and offshore outsourcing are typical and related strategies that a local company can adopt to promote and expand its presence abroad. Of these, outward FDI enables a firm from the home/source country to internationalize its

business by establishing a new plant (i.e., greenfield investment), setting up a joint venture (i.e., JV), acquiring or merging with an existing company (i.e., M&A) in the host/recipient country. Whereas, exporting allows a domestic business to increase international market shares by selling goods and/or services across borders to foreign customers. Finally, offshore/international outsourcing (i.e., sourcing from an independent foreign supplier) facilitates a domestic company to access better and inexpensive resources available abroad, including labour force and raw materials.

Given the growing prominence of overseas business expansion, the literature has been substantially devoted to examining the impact of this widespread practice on both home and host economies from a different array of perspectives, including labour markets. Of this literature, the impact of offshore expansion on home employment has received extensive attention among media, public, academic and policy debates alike. Most national and international media coverage as well as public discussions have been largely focused on negative employment effects at home countries. The widely held concern over job replacement at home arises due to the argument that overseas expansion, notably in the forms of outward FDI and outsourcing, could lead to the shifting of production facilities from domestic to foreign affiliates/contractors, resulting in job losses at home. This negative impact is also referred to as ‘hollowing-out effect’. While these concern and argument seem sensible, it might be oversimplified if failing to take into account the heterogeneous and compensatory effects on home labour markets.

The literature suggests rather mixed findings of home-labour market impact of overseas business expansion. In one of pioneering papers, Blomström, Fors, and Lipsey (1997) examine and compare the relation between foreign affiliate production and parent employment for US and Swedish manufacturing multinationals. They find that increased overseas expansion induces Swedish parent firms to employ more labour at home. This commentary impact on home labour demand in Sweden might capture the increased need for supervisory and auxiliary employment within parents following foreign expansion. On the contrary, US multinationals’ higher foreign production, notably in developing host economies, reduces parent employment. This negative effect is attributed to US multinationals allocating labour-intensive operations to affiliates in low-wage countries. Harrison and McMillan (2011) show similar evidence that US firms’ offshoring causes negative impact on home manufacturing

employment. The latter paper also implies that offshoring to low-wage countries substitutes for domestic employment, and that foreign and domestic employment are complements given significantly different tasks performed at home and abroad.

With a similar focus on disentangling the home-employment impact by investment destinations, Debaere, Lee, and Lee (2010) investigate the case of multinationals originating in South Korea, which has emerged as a major international investor, particularly in Asia. Using firm-level panel data during the period 1968-1996 and difference-in-differences technique, the main estimates suggest that investment outflows to less-advanced economies (than South Korea such as China) causes the negative and statistically significant impact on home-employment growth, which is likely to occur in the short term for new multinationals. Meanwhile, South Korean firms set up affiliates in more-advanced economies (like the US) are found to have an insignificant effect on jobs at home.

By considering both destination and skill compositions, Elia, Mariotti, and Piscitello (2009) examine the effects of Italian outward FDI on the labour demand at home, using the dataset from 1996 to 2002. The estimation results from seemingly unrelated regression (SUR) show that Italian investment outflows to low-income countries are largely resource seeking, lowering the demand for domestic labour, notably among low-skilled group. Furthermore, the findings indicate that even when the overseas investment is addressed to high-income countries, it still exerts negative influence on home employment regardless of skill groups. The negative impact on low-skilled home workers may be due to the popular practice of cost-saving outward investments (Alfaro & Charlton, 2009) whereas the negative effect on high-skilled group might be associated with the rising outsourcing of services and activities that had been traditionally provided within parent companies (Dunning & Lundan, 2008).

Making use of worker-level data during 1998-2007, Bachmann, Baumgarten, and Stiebale (2014) analyse the effects of both outward and inward FDI on employment security in German manufacturing industry. The results indicate that both types of foreign investment are associated with reductions in employment security, and this negative impact is heterogeneous across investment destinations abroad and workers' characteristics. Notably, overseas expansion of German multinationals to Central and Eastern Europe largely accounts for the negative effect on domestic employment security. Furthermore, low-skilled, older and very young workers are worse-off from foreign expansion while high-skilled workers in the

industry do not seem to be negatively impacted by increased foreign presence. Temouri and Driffield (2009) also examine the home-employment effect of German MNEs but include both manufacturing and service industries. The findings suggest that overseas employment expansion does not occur at the detriment of jobs at home. The study also reveals no significant effect of German MNEs' expansion on domestic average wages.

Taking into account firm heterogeneity and forms of overseas expansion, W.-H. Liu, Tsai, and Tsay (2015) analyse the impact of outward FDI by Taiwanese manufacturing firms on domestic employment, production, investment and income distribution. The empirical analysis employs a firm-level panel dataset of 1084 Taiwanese multinationals over the period 2000-2010, and system generalized method of moment (GMM) estimator is adopted to address potential endogeneity problem. The estimation results show that operation expansion to high-wage economies in the form of horizontal investment exerts a positive and statistically significant effect on domestic employment, production and investment alike. On the contrary, investment expansion to low-wage countries tend to cause job losses and industrial hollowing at home economy. Finally, overseas expansion by Taiwanese multinationals appear to worsen domestic income inequality regardless of wage levels in host economies.

Huijie (2018) extends the literature by capturing multiple effects of Japan's outward manufacturing FDI on domestic production and employment. First, overseas expansion can generate export promotion effect on home economy as parents tend to export capital and intermediate goods to foreign affiliates in the early stage of investment. This, in turn, will stimulate export and employment at home. Second, export substitution effect may take place when overseas affiliates substitute for Japan's export by sales in the host economy and export to other markets. Third, import reverse effect may occur in the event of increased competitiveness since overseas affiliates start to export to the home country. The latter effects are likely to lower home production and employment. The empirical results indicate a net negative impact of Japan multinational's overseas expansion on domestic production and employment. However, this finding is contrary to that of Yamashita and Fukao (2010). The latter suggests that expanded overseas operation of Japanese MNEs not only help enhance their competitiveness and profitability but also positively affect parent employment by stimulating demand for skill-intensive activities at headquarters.

Cozza, Rabellotti, and Sanfilippo (2015) investigate the impact of outward FDI on Chinese multinationals' performance at home, including employment. The analysis focuses on investment outflows to EU-27 countries during 2003-2011. Adopting propensity score matching and difference-in-differences estimator to address self-selection problem, the study finds positive effect of overseas expansion on domestic activities in enhancing firms' productivity and scales of operation, measured by sales and employment. A positive impact of Chinese multinationals' investment abroad on home employment is also supported by H. Liu and Lu (2011), utilizing dataset for the previous period 1982-2007. In addition, the authors stress that the expansionary employment effect at home is largely attributed to the role of exporting as Chinese multinational operations will promote the exports of capital and raw materials, leading to higher employment in related industries at home economy.

Fu and Balasubramanyam (2005) explore the role of exports on home employment in China's manufacturing industry. The study adopts the GMM estimator and dataset for the period 1987–1998. The findings indicate that export growth, assisted by township and village enterprises and foreign-invested enterprises, positively affect the local labour market, generating job opportunities for the world's most populated country. Particularly, export expansion in labour-intensive manufacturing industries has contributed to accelerating industrial output and absorbing a large labour surplus from the traditional agricultural sector. Similarly, a large body of empirical studies support positive impact of exports on domestic labour demand in both developed and developing economies, including Australia (Gaston, 1998), Vietnam (Kien & Heo, 2009), Mauritius (Milner & Wright, 1998), Tunisia (Mouelhi, 2007), South Korea (Heo & Park, 2008). Meanwhile, a few papers reveal insignificant or negative effect of export expansion on local employment, for example in the United Kingdom (Greenaway, Hine, & Wright, 1999), South Africa (Edwards, 2004).

Differing from most previous papers concerning home-impact of manufacturing multinationals, Drifford, Pereira, and Temouri (2017) examine the effect of offshore sourcing by European services multinational enterprises (MNEs) on jobs at home. The study utilizes 19-year panel data set of 5746 MNEs during the period 1997-2016, controlling for the shock of global financial crisis. The estimations suggest mixed findings, which are conditional upon examined periods, development level of host economies, and types of service industries. Specifically, there is evidence that offshoring investment by location-intensive service

industries (e.g., financial services, professional services) leads to higher home-employment growth during the crisis period (i.e., 2008-2016). Meanwhile, offshoring in information-intensive service industries (e.g., wholesale and retail trade, transportation, hotels and restaurants) in high income countries tends to lower home employment.

Regarding the case of Australia, public discussions, policy and academic attention have so far overwhelmingly focused on the impact of incoming investment whereas there is scant evidence on the current state and impact of overseas business expansion on Australian businesses and the growth of the economy at large. A number of recent reports commissioned by government, non-profit, and private agencies, including Austrade (Goodman, 2015; Tang, 2017), Committee of Economic Development of Australia (CEDA, 2017), Trade Worthy (Burrows, 2017), Perth USAsia Centre (Satchwell & Wilson, 2017) have highlighted various grounds for promoting the internationalization of Australian businesses. Major advantages of overseas expansion to Australian companies and the economy are highlighted as follows.

(i) By expanding business abroad, Australian companies can potentially enhance their competitiveness, both internationally and domestically. Such beneficial effects could be realized through economies of scale, logistics cost reductions in overseas locations as well as restructuring supply chain in their domestic operations to become more efficient.

(ii) Outward investment can potentially generate higher employment in Australia, notably high-skilled jobs. While overseas expansion may shift some low-paid jobs to lower-cost locations offshore, it can create more relatively high-paid and high-skilled jobs back home. Furthermore, existing jobs in parents companies can be protected given the increased growth and competitiveness obtained via internationalizing operations.

(iii) Overseas expansion can enable Australian multinationals to improve access to new and growing markets. Market access is notably crucial to the services sector, which largely requires providers' presence for efficient service delivery to local customers. As shown in Figures 1 and 2, the finance and banking industry comprises a leading destination of Australian outward investment. Therefore, promoting overseas expansion is a key to the growth of Australian services firms and the entire economy.

(iv) Internationalization of business activities can allow Australian companies to facilitate access to new information, contacts and expertise at the host markets via cooperative investment modes with local firms, namely joint ventures, mergers and acquisitions. As a

result, Australian firms can enrich their intangible assets or know-how, which then they can employ to promote innovation back in their domestic operations.

(v) Overseas expansion can generate new growth opportunities for Australian companies operating in sectors where domestic market is saturated or growth-limited. Such outward expansion allows Australian businesses to diversify their geographical operations, which do not displace domestic investment but can potentially make significant contribution to their profitability, employment at parent companies as well as tax revenue.

On the contrary, overseas expansion, notably in the forms of outward FDI and offshore outsourcing, by Australian companies has been largely viewed negatively in the public and media discussions. Two major arguments against Australian multinationals' expansion abroad include: (i) domestic job losses and (ii) reduced domestic investment (CEDA, 2017; Ong, 2016; Wade, 2012; Zappone, 2012).

(i) A primary concern over overseas expansion is that the relocation of production facilities abroad by Australian companies, notably in the form of horizontal expansion and greenfield investment, can strongly lower domestic employment by shifting jobs offshore in order to cut costs. As raised in most debates, job losses tend to be more visible (than job gains) and occupations most at risk include those in information technology; administration; finance and insurance; and professional, scientific and technical services. About one million service jobs in Australia are likely to move overseas by 2042 (Zappone, 2012).

(ii) The outflows of investment by Australian multinationals may arguably reduce capital stock that would otherwise be available for financing and promoting domestic businesses. Many Australian sectors are in need of high level of investment, which is a major rationale for attracting inward FDI to local industries. Given the slowing of the mining boom in Australia, further investment stimulus to support the growth of domestic economy may question the rationale of letting Australian capital to flow out to overseas economies.

In sum, the review of literature on home-impact of overseas expansion are found to vary significantly across economies, industries, skill groups and forms of offshore expansion. Furthermore, the empirical evidence for the case of Australian multinationals is notably scant. This is largely due to the lack of data and empirical research dedicated to examining offshore expansion by Australian companies and the impact of their overseas activities on domestic economy. From employment perspective, overseas business expansion of Australian

multinationals can both substitute and complement domestic employment, which might be subject to industry, occupation and worker heterogeneity. Nonetheless, the net impact on home employment remains ambiguous. Our study contributes empirical evidence to fill the knowledge gap and provide more insightful understanding on this highly debatable topic.

4. Empirical Model

Conceptually, a firm's participation of overseas business activities, such as exporting, foreign investment and outsourcing, can affect its performance in domestic market. First, compared with business activities in the domestic market, going overseas is more costly. For example, in order to export (namely to serve foreign markets), the firm needs to acquire information on their target markets, pay a fixed cost of setting up the distribution channel, pay a transportation cost to ship their products to the overseas market, and go through various regulatory procedures such as customs clearance and quarantine. To invest overseas, the firm needs to have a good understanding of the local market, such as its regulatory requirements, and go through procedures that are needed for setting up a new business (greenfield investment) or acquiring an existing business. To outsource some of its business activities overseas, the firm need to have overseas connections which it can utilize, and need to make sure that the outsourced business activities conform to its requirements. Due to overseas business activities being costly, not all firms are engaged in such activities, for example there is only a small proportion of firms that export in an industry, no matter how narrowly the industry is defined. Generally, we observe in reality that more capable firms participate in overseas business activities. Therefore, there exists a correlation between a firm's overseas business activities and its performance in domestic market, as more capable firms will, not surprisingly, do better in the domestic market.

In addition to the positive correlation, a firm that is engaged in overseas business activities can benefit from learning by doing. For example, while more productive/capable firms export, the exporting experience can in turn help promote firms' productivity, due to learning by exporting. Previous studies have found evidence that exporting help firms to improve their productivity. In terms of investment overseas, it is not surprising that if a firm does well in its overseas subsidiary, its home headquarter can benefit. First, the profit from its overseas operation increases the available resources for its home headquarter, which in turn is likely to improve the efficiency of home operation. Second, lessons, either bad or good, from

its overseas operation can help domestic operation. Third, innovation activities that occur in its subsidiary can be sent back to home headquarter, which helps improve the efficiency of domestic operation. For overseas outsourcing, generally a firm's initial intention is to cut its production cost by outsourcing some of its business activities to an overseas market where the wage rate is lower. The achieved cost saving allows a firm to re-allocate its limited resources to a better use, which in turn improves its efficiency. Therefore, on the one hand, a firm's overseas business activities are positively correlated with domestic efficiency, in that both of them are positively affected by the same underlying factors (namely their productivity/capability endowment). On the other hand, from learning by doing, we also expect a firm's overseas business activities generate a positive impact on its efficiency in the domestic market, resulting in a causality from overseas business activities to domestic performance.

It shall be noted that such impacts can be negative, particularly in the short run when firms are faced with binding resource constraint. For overseas outsourcing, which intends to achieve cost saving, a firm's employment of workers in the domestic market is likely to be reduced, as a result of fewer domestic operations. To export, a certain level of resources must be devoted to start the exporting business, which otherwise can be used for domestic operation. Similarly, a firm's investment in foreign markets necessarily implies foregoing the investment opportunity in the domestic market. This trade-off is likely to affect a firm's efficiency in the domestic market, particularly in the short term when the benefit of engaging in the overseas business activities has not yet materialized. Hence, while conceptually a firm's overseas business activities are likely to affect the efficiency of its domestic operation, the direction of such impacts are less clear cut, particularly in the short run.

In order to empirically estimate such impact of overseas business activities, we develop a model, where a firm's performance (in terms of domestic employment, profitability and revenue) is hypothesized to be a function of its overseas business activities and a set of control variables. The empirical model we estimate is as follows:

$$y_{it} = \beta_0 + \beta_1 IM_{it} + \beta_2 EX_{it} + \beta_3 OUTS_{it} + X_{it}\beta_4 + \varepsilon_{it} \quad (1)$$

where the subscripts i and t index firm and year respectively; y is a 4 X 1 vector of firm performance, including domestic employment (both casual and full-time workers), profitability and total sales revenue; IM denotes a firm's import, which is captured by a set of dummy

variables; EX represents a firm's export, captured by a set of dummy variables; $OUTS$ denotes a firm's outsourcing activities, and similarly captured by a set of dummy variables; X is a set of control variables; and ε is a 4×1 vector of error terms with a specified probability distribution.

For domestic employment of both casual and full-time workers, the set of control variables (X) includes profitability, productivity, total sales revenue, and wage rate. The more profitable and productive a firm is, the more workers it is likely to hire, *ceteris paribus*. The total sales revenue controls for the possibility that a bigger firm tends to employ more workers. For wage rate, not surprisingly, it affects firms' demand for workers, and we assume that the labour market is competitive such that firms take wage rate as given, namely the wage rate is exogenous. When the dependent variable is profitability, the set of control variables include productivity a firm's total sales revenue, and a set of dummy variables that capture its innovation activities. A more productive firm tends to be more profitable, *ceteris paribus*. A firm's total sales revenue controls for the size effect, namely the possibility that a bigger firm (in terms of number of workers employed) is more profitable. The set of innovation dummy variables controls for the effect of innovation on firm profitability.

When the dependent variable is total sales revenue, the set of control variables include the innovation dummy variables, a dummy variable that represents whether a firm has web presence, and a dummy variable that denotes whether a firm receives order via the internet. Conceptually, a firm's innovation activities can affect its sales revenue, and if a firm has a presence in the internet and receives order via the internet, it is likely to grow more than a firm that does not have such access.

It is to be noted that the firms that are successful in the domestic markets are more likely to participate more in the overseas business activities. Consequently, endogeneity problem may arise through profitability and productivity. Therefore, the OLS estimate is biased and inconsistent. To address this issue, we will use the seemingly unrelated regression technique, where we account for the possible endogeneity of productivity by using lagged wage rate and sales revenue as instruments.

Upon successfully estimation equation (1), various hypotheses can be statistically tested to achieve our objective of this research. For example, the effect of import of the i -th

firm on domestic employment can be tested by the coefficient β_1 . Likewise the response to domestic employment can be jointly tested for the significance of subset of variables.

5. Variable Construction and Data

The dataset is sourced from the Microdata: Business Longitudinal Database (BLD microdata), Australia, which covers the period from 2006-07 to 2010-11. The BLD microdata include 3075 Australian businesses for five years, and were collected by Australian Bureau of Statistics (ABS) from three sources, namely the annual Business Characteristics Survey conducted by ABS, the Business Activity Statements from the Australian Taxation Office, and the basic merchandise trade data from the Australian Customs and Border Protection Service.

For the employment effect of overseas business activities, we look at two aspects, namely the number of casual workers and the number of full-time workers a firm employs. The number of casual workers is a categorical variable, which takes a value of one if a firm employs less than five casual workers, two if the firm employs 5-10 casual workers, three if 10-15 casual workers are employed, and four if more than 15 workers are hired by the firm. Similarly, the number of full-time workers is also a categorical variable, which takes values between one and five with one representing that a firm employs less than five full-time workers and two, three, four and five representing 6-10, 11-16, 17-20, and more than 20 workers respectively.

For the size (total sales revenue) effect of overseas business activities, the total sales revenue is a continuous variable. For profitability, it is a categorical variable and measured relative to previous year. That is, it takes a value of zero if the comparison with previous year is not applicable, a value of one if the profitability decreases compared with previous year, and values of two and three if it does not change or increase.

A firm's overseas business activities include three aspects, namely outsourcing, exports and imports, which are measured by a set of dummy variables. For outsourcing, it is measured relative to previous year, and is captured by a set of four dummy variables. The first outsourcing dummy variable takes a value of one if the comparison of this year's outsourcing activities with previous year is not applicable, and zero otherwise. The second/third/fourth outsourcing dummy variable takes a value of one if, compared with previous year, a firm decreases/maintains/increases its outsourcing activities respectively. The import is measured

by a set of four dummy variables. The first/second/third/fourth import dummy variable takes a value of one if a firm imports goods and services of \$0-9999, \$10000-99999, \$100000-5999999, and more than \$600000 respectively. Similarly, the export is also measured by a set of four dummy variables, which takes a value of one if a firm exports goods and services of \$0-19,999, \$20,000-99,999, \$100,000-499,999, and more than \$500,000 respectively.

In the estimations, we also include a set of control variables, which include productivity and a set of dummy variables that measure a firm's innovation activities. Firm productivity is a categorical variable that is measured relative to previous year. It takes a value of zero if a firm's productivity cannot be compared with previous year, and takes a value of one/two/three if the firm's productivity decreases/remains the same/increases, compared with previous year. From this categorical variable, we construct four dummy variables that are used in the regressions. These dummy variables take a value of one according to the value of categorical productivity variables. For example, one of the productivity dummy variables takes a value of one if a firm's productivity increases, relative to previous year, and zero otherwise. A firm's innovation activities include four aspects, namely whether a firm develops new goods or services, new operational processes, new organisational/managerial processes, and new marketing methods. Accordingly, four dummy variables are used to capture these innovation activities. For example, the product innovation (new goods and services) dummy variable takes a value of one if a firm develops new goods and services. A firm's presence in the internet is measured by two dummy variables, one taking a value of one if the firm has web presence and the other taking a value of one if the firm receives order via the internet.

Table 3 reports the summary statistics of some of these variables. For the number of casual workers that a firm employs, it has an average of 2.35 with standard deviation being 1.4. Similarly the number of full-time workers has an average of 2.62 and standard deviation of 1.79. The sample average of profitability is 2.12 and its standard deviation is 0.96. Total sales revenue and wages are two continuous variables, and we can observe substantial variations of them in that their standard deviations are much higher than their sample averages. For total sales revenue, the standard deviation is more than 3.5 times that of the sample average, while the wages has a standard deviation that is more than two times that of its sample average. In our regressions later, we utilize this substantial variation in identifying the impacts of a firm's overseas business activities.

Table 3. Summary Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Casual workers	15375	2.35	1.40	1	4
Full-time workers	15375	2.62	1.79	1	5
Profitability	15375	2.12	0.96	0	3
Total sales revenue	11677	3573243	1.26E+07	0	2.66E+08
Wages and salaries	9371	567517.8	1208371	0	1.95E+07
Outsourcing:					
d11	15375	0.45	0.50	0	1
d12	15375	0.04	0.20	0	1
d13	15375	0.17	0.37	0	1
d14	15375	0.05	0.23	0	1
Imports:					
d21	15375	0.02	0.15	0	1
d22	15375	0.03	0.17	0	1
d23	15375	0.02	0.15	0	1
d24	15375	0.02	0.16	0	1
Exports:					
d31	15375	0.02	0.12	0	1
d32	15375	0.02	0.12	0	1
d33	15375	0.01	0.12	0	1
d34	15375	0.02	0.13	0	1
Profitability:					
d41	15375	0.05	0.21	0	1
d43	15375	0.20	0.40	0	1
d44	15375	0.20	0.40	0	1
Productivity:					
d51	15375	0.09	0.29	0	1
d52	15375	0.13	0.34	0	1
d53	15375	0.31	0.46	0	1
d54	15375	0.18	0.38	0	1

Note: Variables starting with d are dummy variables. For example d11 is a dummy variable that takes a value of 1 if the comparison of a firm's outsourcing activities with previous year are not applicable.

Source: BLD microdata, ABS, 2006/7-2010/11.

For outsourcing activities, a majority of businesses (45 per cent) reports that the comparison of their outsourcing activities with previous year is not applicable, which can occur if the business does not have outsourcing activities. Businesses that report decreasing/same/increasing outsourcing activities, compared with previous year, account for

around 4, 17 and 5 per cent respectively. The shares of firms with imports in the four categories (\$0-9999, \$10000-99999, \$100000-5999999, and more than \$600000) are approximately equal (around 2 per cent), and the exports exhibit a similar pattern. Around 20 per cent of businesses report an increasing/same profitability, relative to previous year. For productivity, compared with previous year, 13 per cent of businesses report a declining productivity, while 31 per cent of businesses report a same level of productivity and 18 per cent of businesses have an increasing productivity.

6. The Findings

Table 4 reports the estimation results, where we employ the seemingly unrelated regression and account for the possible endogeneity of the productivity dummy variable by using the one year lagged wage rate (full-time worker) and lagged total sales revenue as instruments.

Firms' outsourcing activities are captured by a set of dummy variables, namely $d11$, $d12$, $d13$, and $d14$. Regarding their impacts, the estimated coefficients in the equation of casual workers are all negative and statistically significant at the five per cent level. The significantly negative estimate suggests that a firm's outsourcing activities reduce its demand for casual workers, which is not surprisingly as firms contract out certain tasks and subsequently no longer need that many workers. For the full-time employment, the coefficients of the outsourcing dummy variables are estimated to be statistically insignificant at the five per cent level, suggesting that a firm's outsourcing activities do not significantly reduce its demand for full-time workers. With some tasks being contracted out, in order for a firm to maintain its level of employing full-time workers, its size needs to grow. This is confirmed by the estimated coefficients of the outsourcing dummy variables for the total sales revenue equation. The coefficient of $d12$ is estimated to be 0.478 and significant at the one per cent level. The coefficient of $d13$ is estimated to be 0.2679, which is significant at the five per cent level. Hence, outsourcing activities appear to boost a firm's sales revenue, which in turn offsets the reduction of the number of full-time workers that the firm hires. Such reduction of full-time workers occurs due to contracting out some tasks in the firm. However, the number of casual workers appear not to be affected by the growth of sales revenue. Besides, the profitability

appears to be negatively affected by the outsourcing activities, with the estimated coefficients of the outsourcing dummy variables to be significantly negative.

Import is one important dimension of a firm's overseas business activities, and is captured by the dummy variables $d21$, $d22$, $d23$, and $d24$. For the employment of casual workers, the coefficient of $d22$ is estimated to be 0.2488, which is statistically significant at the one per cent level. Therefore, import appears to raise the employment of casual workers by firms. In the equation of full-time workers, the estimated coefficients of $d21$ and $d22$ are statistically significant at the ten per cent level, again suggesting that import boosts a firm's demand for the full-time workers. Import of intermediate goods/services, which are used for the production final goods/services, conceptually can increase a firm's employment of workers. The more a firm imports the intermediate goods/services, the more workers it needs in order to assemble the intermediate goods to final goods. Import also appears to boost a firm's sales revenue, with the estimated coefficients of the import dummy variables being all positive and statistically significant at the one per cent level. Not surprisingly, an increase in intermediate inputs (import) results in an increase in outputs and eventually sales revenue. That said, import appears to negatively affect a firm's profitability, which however is weak in the sense that only the coefficient of $d22$ is negative and statistically significant at the ten per cent level.

Regarding the impacts of export, it appears to negatively affect a firm's employment of both casual workers and full-time workers. In the equation of casual workers, the coefficients of $d31$, $d32$, and $d34$ are estimated to be all negative and statistically significant at the five per cent level. In contrast, in the equation of full-time workers, only the estimated coefficient of $d32$ is negative and statistically significant at the five per cent level. As such, the negative impact on the demand for casual workers is more severe than that for full-time workers. Export appears not to exert statistically significant effect on a firm's profitability, while it increase a firm's total sales revenue, which is not surprising as export revenue is part of the total sales revenue.

A firm's profitability appears not to significantly affect its employment of casual workers, with the estimated coefficients of the profitability dummy variables are all statistically

insignificant at the five per cent level¹. However, the profitability boosts a firm's employment of full-time workers weakly, with the coefficient of d_{43} estimated to be 0.0915 which is statistically significant at the ten per cent level. Firm profitability negatively affects a firm's total sales revenue. The estimated coefficients of profitability dummy variables d_{41} , d_{42} and d_{43} are all negative and statistically significant at the one per cent level, suggesting that more profitable firms do not necessarily have higher sales revenue.

The productivity dummy variable (d_5) takes a value of one if it does not change from previous year. In the profitability equation, its coefficient is estimated to be -0.1572, which is statistically significant at the one per cent level. Accordingly, firms with change of productivity from previous year, experience a higher level of profitability, confirming the importance of productivity. In the equation of casual workers, its coefficient is estimated to be statistically insignificant at the five per cent level. For the rest two equations, it is dropped in the estimation, which can occur due to possible multicollinearity issue.

The wage rate is a firm's total wages and salaries divided by the number of full-time workers, which captures the cost of full-time workers to firms. Not surprisingly, it negatively affects a firm's employment of full-time workers, with its coefficient estimated to be -0.0354, which is statistically significant at the five per cent level. Its coefficient is estimated to be 0.0798 and statistically significant at the one per cent level in the equation of casual workers. The positive estimate of this coefficient suggests that an increase in the cost of full-time workers induce firms to substitute away to casual workers. A firm's sales revenue exerts significantly positive impacts on its employment of both casual and full-time workers, which occurs due to the fact that to sell more to the market, the firm need to produce more outputs which in turn requires more labour inputs. The sales revenue also positively affect a firm's profitability, with the estimated coefficient being positive and statistically significant at the one per cent level.

A firm's innovation activities include four aspects, namely the product innovation (d_{gsnewy}), operational innovation (d_{opnewy}), organisational innovation (d_{omnewy}), and marketing innovation (d_{manewy}). The innovation activities are hypothesized to affect a

¹ Note the dummy variable d_{43} is dropped in the equation of casual workers, which can occur due to potential multicollinearity.

firm's profitability and total sales revenue directly, and a firms' employment of both casual and full-time workers indirectly (via profitability and total sales revenue). For firm profitability, the coefficients of product innovation (d_{gsnewy}) and operational innovation (d_{opnewy}) are estimated to be 0.071 and 0.0781 respectively, which are statistically significant at the five per cent level, suggesting that firms with product and operational innovations tend to have higher level of profitability. In contrast, firms with organisational innovation (d_{omnewy}) and marketing innovation (d_{manewy}) appear not to have statistically different profitability compared with those that do not have these innovation.

In the total sales revenue equation, the coefficients of product (d_{gsnewy}) and marketing (d_{manewy}) innovations are estimated to be -0.116 and -0.2089 respectively, which are statistically significant at the five per cent level. The negative estimates suggest that these two types of innovations actually reduce a firm's sales revenue. In contrast, the operational innovation (d_{opnewy}) and organisational innovation (d_{omnewy}) appear to enhance a firm's total sales revenue, with their coefficients estimated to be statistically significant at the one per cent level. Whether a firm has a web presence (*webpres*) is found to positively affect its total sales revenue, with the coefficient estimated to be significantly positive. In contrast, whether a firm receives orders via the internet (*record*) does not significantly affect its total sales revenue.

Overseas business activities are clearly important to firms, and our empirical estimations also confirm the importance in terms of their impacts on demand for both casual and full-time workers, profitability and total sales revenue. Our findings suggest overseas business activities can generate both positive and negative impacts. Notably, outsourcing activities can negatively affect employment of casual workers but not full-time workers. Such negative impacts of outsourcing on employment is less severe than one would expect, and it occurs due to a size effect of outsourcing, namely the outsourcing increases firm size (total sales revenue) which in turn promotes employment of workers (full-time in our case). One implication from our empirical estimation is that policy makers shall not discourage businesses from engaging in the overseas business activities. The negative impact of such activities is likely not to be as severe as one would expect due to the potential size effect (growth opportunity).

Table 4. Estimation Results

	Casual workers		Full-time workers		Profitability		Total sales revenue	
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.
Outsourcing:	<i>d11</i>	-0.2696***	0.0941	-0.0968	0.0749	-0.4954***	0.0731	0.1628
	<i>d12</i>	-0.2292**	0.1164	-0.0034	0.0916	-0.8637***	0.0904	0.4780***
	<i>d13</i>	-0.2926***	0.0966	-0.0334	0.0769	-0.4252***	0.0755	0.2679**
	<i>d14</i>	-0.3786***	0.1070	-0.0302	0.0845	-0.2604***	0.0837	0.1813
Import:	<i>d21</i>	0.0638	0.0835	0.1242*	0.0639	-0.0815	0.0656	0.5455***
	<i>d22</i>	0.2488***	0.0760	0.1011*	0.0582	-0.1167*	0.0598	0.6979***
	<i>d23</i>	0.1202	0.0851	0.0814	0.0651	-0.0469	0.0670	0.8548***
	<i>d24</i>	0.0494	0.0859	0.0533	0.0658	-0.1385	0.0676	1.5196***
Export:	<i>d31</i>	-0.2497**	0.1025	0.0067	0.0784	0.0976	0.0805	-0.1420
	<i>d32</i>	-0.2754***	0.0995	-0.1491**	0.0762	-0.1143	0.0782	0.2467**
	<i>d33</i>	-0.1563	0.0982	0.1201	0.0751	-0.0160	0.0771	0.0956
	<i>d34</i>	-0.2348**	0.0927	0.0944	0.0710	-0.0874	0.0727	0.9508***
Profitability:	<i>d41</i>	0.0804	0.1099	0.3901***	0.1062			-1.3840***
	<i>d42</i>	-0.0452	0.0426	0.0881	0.0740			-0.7953***
	<i>d43</i>			0.0915*	0.0752			-0.5953***
	<i>d44</i>	-0.0319	0.0463	0.1348	0.0744			0.0494
Productivity:	<i>d5</i>	-0.0009	0.0359			-0.1572***	0.0262	0.1217
	ln(wagerate)	0.0798***	0.0200	-0.0354**	0.0153			
	ln(sales)	0.0887***	0.0131	0.5463***	0.0100	0.1599***	0.0087	
	<i>d_gsnewy</i>					0.0710**	0.0349	-0.1160**
<i>d_opnewy</i>						0.0781**	0.0351	0.3000***
						-0.0205	0.0345	0.3172***
<i>d_omnewy</i>								0.0549

<i>d_manewy</i>				-0.0118	0.0352	-0.2089***	0.0575
<i>webpres</i>						0.7613***	0.0459
<i>record</i>						-0.0442	0.0441
constant	0.0382	0.2143	-5.4619***	0.1716	0.1670	0.1396	13.8512***
Obs	4704		4704		4704		4704
R ²	0.0358		0.5106		0.0549		0.2579
χ^2	173.65		5232.58		594.97		2051.27

Note: Seemingly unrelated regressions. ***, **, and * denote significance at the one, five and ten per cent levels respectively.

7. Concluding Remarks

It is important for a firm to be engaged in overseas business activities. For example, through exporting, a firm can improve its productivity, namely learning by exporting. Through importing, a firm can acquire intermediate inputs, which in turn helps its production and sales. Through outsourcing, a firm can reduce its cost of production, which in turn boosts its performance.

In this report, we quantitatively estimate the impacts of these business activities (outsourcing, import and export) on a firm's employment of both casual and full-time workers, profitability and total sales revenue. For this purpose, we employ the seemingly unrelated regression technique with a micro dataset from the Business Longitudinal Database, Australia, which is collected by ABS and covers the period from 2006-07 to 2010-11.

Our empirical estimation suggest that (1) outsourcing negatively affects employment of casual workers but not full-time workers, which occurs due to the size effect (growth opportunity); (2) outsourcing negatively affects a firm's profitability and positively affect its total sales revenue; (3) import generates positive impacts on employment of both casual and full-time workers and total sales revenue, and weakly and negatively affects profitability; (4) export negatively affects employment of both casual and full-time workers, and positively affect sales revenue. A firm's overseas business activities can generate both positive and negative impacts on firm performance. One point that is worth of noting is that the negative impact, for example the perceived negative impact of outsourcing on employment, is likely not to be as severe as one would expect, which occurs due to the size effect (growth opportunity).

The implication of our empirical estimation is that policy makers shall not discourage a firm's engagement of overseas business activities. Even if an overseas business activity is perceived to generate a negative impact at home, it is likely that the potential growth opportunity (size effect) can offset such negative impact.

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