

Do skilled immigrants affect the wage rate of Australian workers?

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Abstract

We hypothesise that skilled immigration increases the wage rate in Australia. Our alternative hypothesis is that skilled immigration decreases the wage rate in Australia. The data used for this research comes from the Australian Bureau of Statistics and Department of Immigration and Citizenship. Based on our analysis, we find that there is positive relationship between high-skilled immigration and employee earnings per hour. We also find that low-skilled immigrants have a negative effect on employee earnings per hour. We believe that low-skilled workers are easily replaced such that low-skilled immigrants are substitutes to Australian low-skilled workers. However, there are some limitations of our research. Notably, our result are restricted to three occupations.

1. Introduction

Australia is a country which has a long history of immigration. From 1788 until now, the population of Australia has increased by 20 million, and mostly due to immigration (Jayaraman, 2000). The definition of high-skilled immigration has changed over time. In the past, it represented artisans and craftsmen, who were the main labour force of society. However today it is defined by people of scientific, technical, engineering and high-level management backgrounds. Due to the rapid growth of the economy, the demand for skilled workers has risen significantly in recent years in Australia. However, natives have started to worry about the large amount of immigrants and how they may impact their lives. As it is a hot topic, this research will discuss the impact of skilled immigration on the wage rate of native workers in Australia.

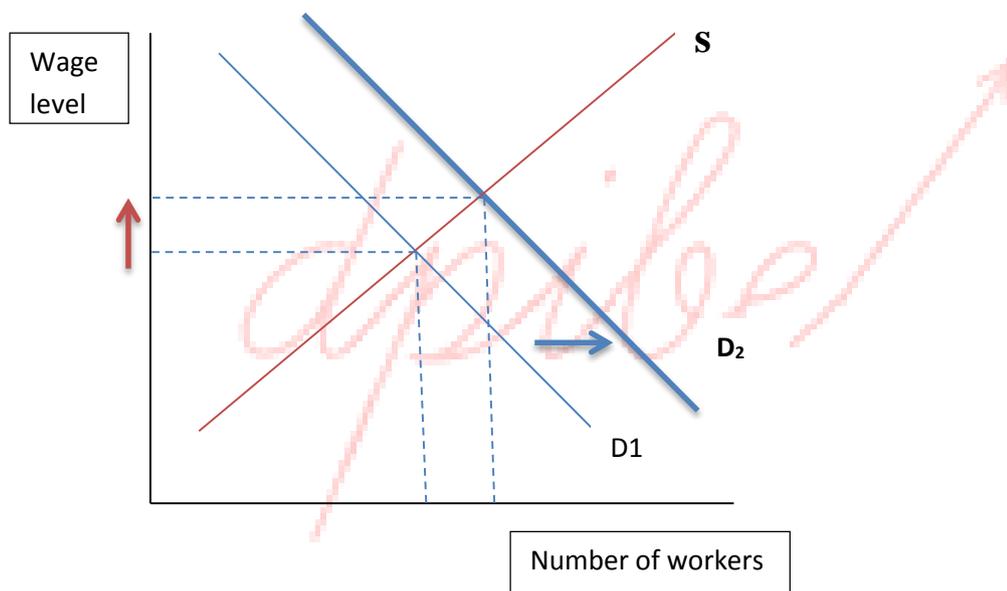
The hypothesis of this paper is that skilled immigration increases the wage rate in Australia, and the alternative hypothesis is skilled immigration decreases the wage rate in Australia. There are several factors to support the hypothesis. Firstly, more skilled immigrants imply increasing the amount of consumption spending in Australia. In addition, skilled immigration helps create more jobs as immigrants may take jobs that are complementary to that of the native workers. On the other hand, the increasing number of people implies increased levels of competition, and increased supply of labour. As a result, the wage rate will decrease.

2. Literature review

The quantity and price of labour is determined by the intersection of demand and supply curves. This section will show how immigration influences the wage rate. Orrenius and Zavodny (2006) demonstrate that in order to determine the effect on native wages, the key is to figure out whether immigrants are a substitute or complement to native workers. There is evidence to support that skilled immigrants are less substitutable for skilled native workers because of

different education level and work experience (Orrenius and Zavodny, 2006). Due to this, the demand curve for complementary jobs will shift to right, so the wage rate in those sectors will be higher than before (figure 1). For instance, scientists and engineers are two complementary jobs. When labour demand for scientists expands, labour demand for engineers will also expand. As a consequence, the wage rate of engineers will be increase due to the increasing demand of engineers.

Figure 1: Market for jobs complementary to immigrant skills



Kifle (2009) found that immigrants increased the demand of goods and services. As a consequence, the demand for labour curve will be shift to the right, which in turn leads to increasing wage rate. Hsueh and Huang (2010) focus their research on high-skilled immigrants, and they found that high-skilled immigrants had positive effect on natives' wages. For instance, the immigrants in science and engineering help to increase research and development activity.

There is evidence to prove that it had 15 per cent increasing of patents per capita for every 1 per cent rising of immigrants with high education (Hsueh and Huang, 2010). It increased more inventions, which will provide more job opportunity. Consequently, the demand of labour will be increased, so it will help wage rate to growth. In Bond and Gaston's research (2011), they found that the positive relationship between the number of immigrants and the earnings of Australia native-born workers. They used the national labour market approach to analyse the effects of earnings on native workers by the immigrants from a macroeconomic perspective. Immigrants increase aggregate demand, government spending and capital. This suggests that native workers and immigrants in Australia are complementarity rather than substitutes. However, unlike our study, Bond and Gaston (2011) divided all immigrants into English-speaking and non-English speaking. In our research, we focus on the correlation between the earnings of different occupations and number of skilled immigration in Australia.

On the other hand, there are certain arguments that back the alternative hypothesis. In Hainmueller and Hiscox (2010) high-skilled immigrants had negative impact on the wages of high-skilled native workers in United States. Longhi et al. (2005) also find a negative effect of immigration on natives' wages, due to a positive labour supply shock that caused lower price of labour both in European and US. They use meta-regression analysis to investigate their research design compared with the previous empirical findings. According to the theoretical framework, the skilled immigrants increase the labour supply resulting in a competition environment for the natives. Therefore, the wage rate will be decreased.

3. Analysis

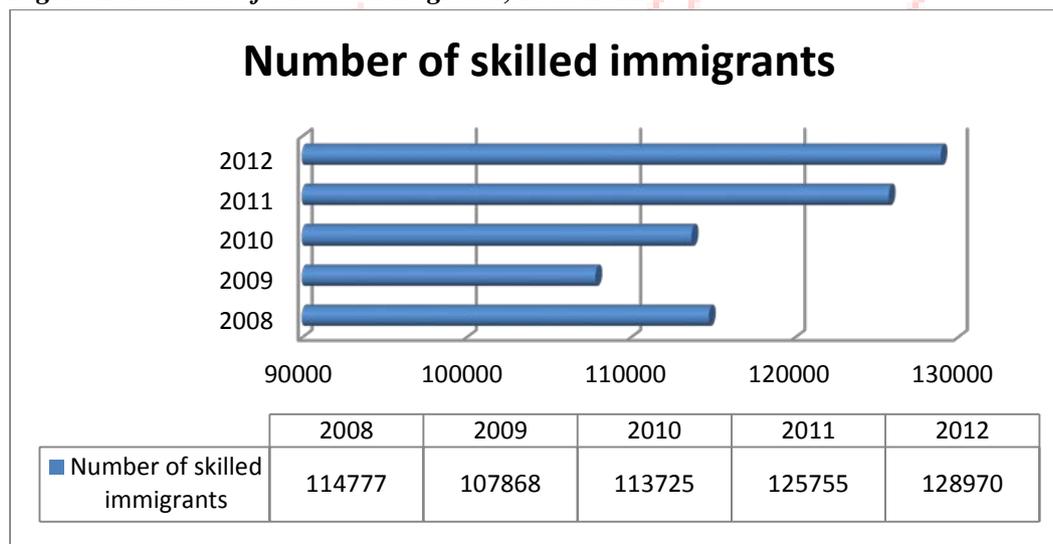
To test our hypothesis, we study the number of skilled immigrants coming in to Australia from 2008-2012. We then compare this data with the wage rate of native Australian workers from the respective years.

From Figures 2 and 3, we see that there has been a steady increase in the number of immigrants coming to Australia from 2009-2012 and also the data for the average weekly earnings for

Australia workers shows a continuous increase from 2009 to 2012. This shows that these two sets of data may have positive correlation. One important thing needs to mention here is that the number of skilled immigrants had an extremely drop between 2008 and 2009, but the average weekly earnings was still increased in this period. In order to be more specific in our study, we further analyse the effect of immigrants on certain occupations.

The 2012-13 Migration Program Report (Australian Government Department of Immigration and Citizenship, 2013) measures the skilled stream of the top five occupation immigrant outcomes from 2008 to 2012. We chose to focus on Accountants, Engineers and Hairdressers. Accountants and engineers are high-skilled occupations, and hairdressers are low-skilled job.

Figure 2: Number of Skilled Immigrants, 2008-2012



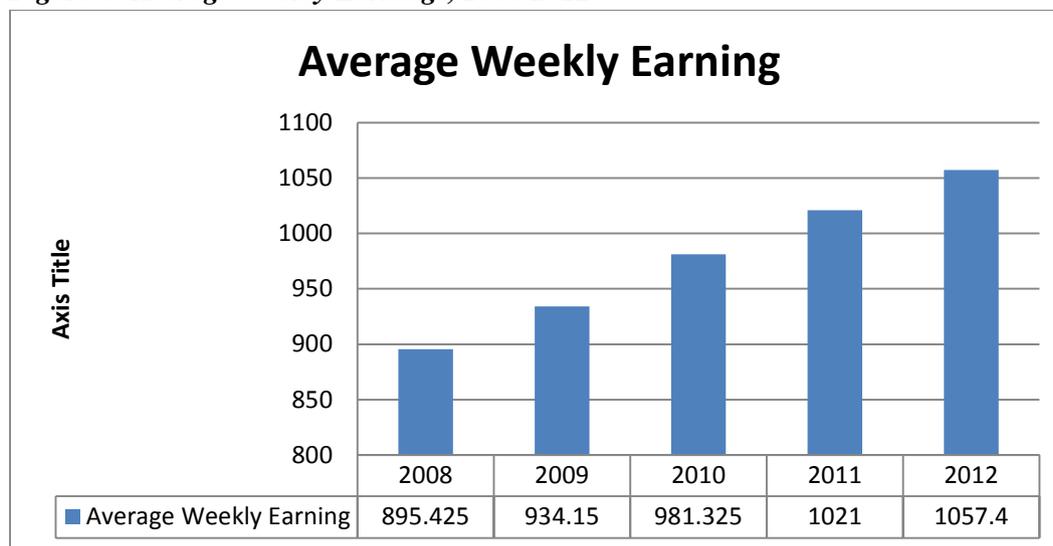
Source: Department of Immigration and Citizenship, 2008-2012

Let us assume that the accountant and engineer are complementary jobs to each other, so when the demand of accountant expands, the demand of engineer will also expand. As a result, the

wage rate of engineer will increase. The immigrant hairdresser is substitute to the previous hairdresser. Consequently, the increasing supply of hairdresser will decrease the wage rate.

Studying Figure 4, it can be seen that in the year 2010, there was a sudden spike in the number of immigrant accountants. It can also be seen that the number of immigrant engineers have been steadily increasing from 2008 to 2012. The numbers of immigrant hairdressers were at the most in the year 2012, a sharp increase from 2010.

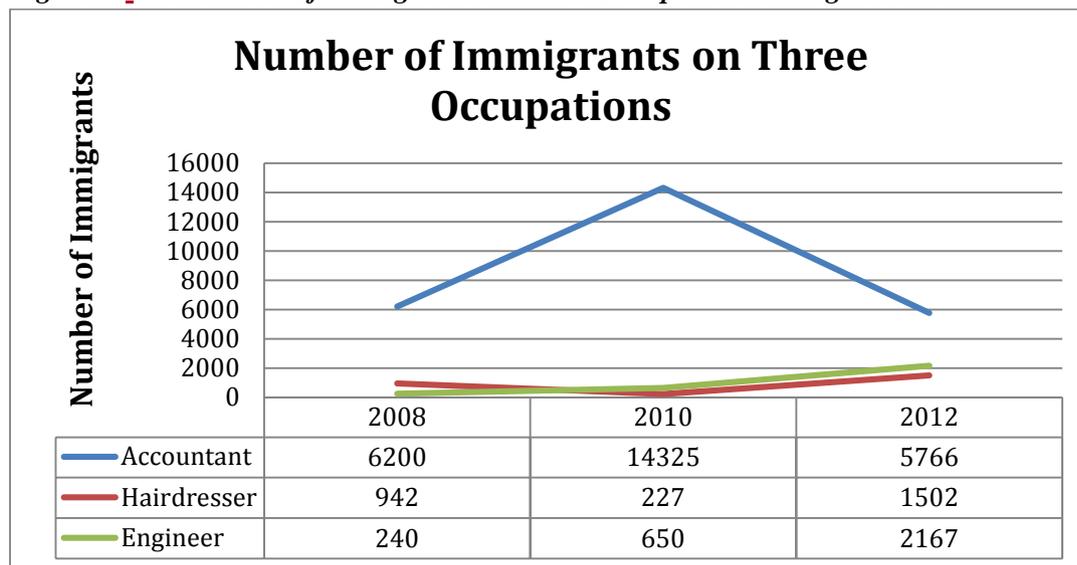
Figure 3: Average Weekly Earnings, 2008-2012



Source: ABS (2008-2012)

Studying Figure 5, the hourly wage rate of the accountants was at its most during 2010. The hourly wage rate of the hairdressers was also at its most in 2010, but suffered a reduction in 2012, in direct contrast to its corresponding movement in Figure 4. Whereas the hourly wage rate of engineers and accountants seem to have a positive relationship with the number of corresponding migrants in their respective sectors.

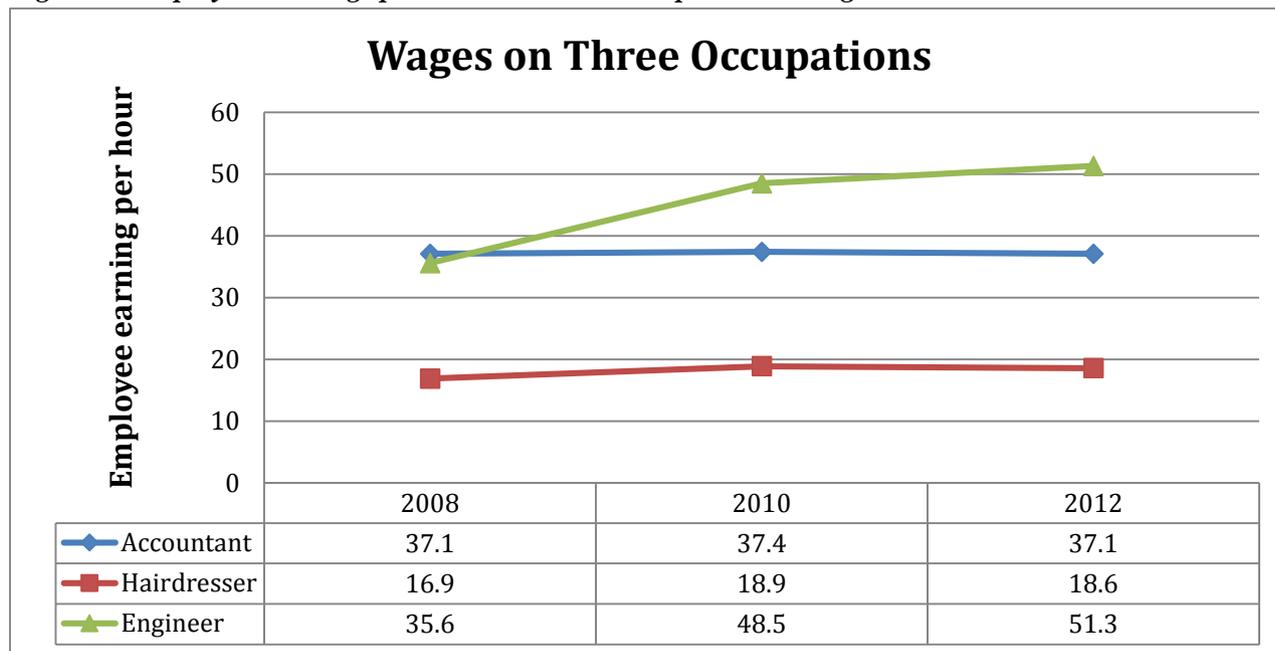
Figure 4: The Number of Immigrants on Three Occupations during 2008-2012



Source: ABS (2008-2012)

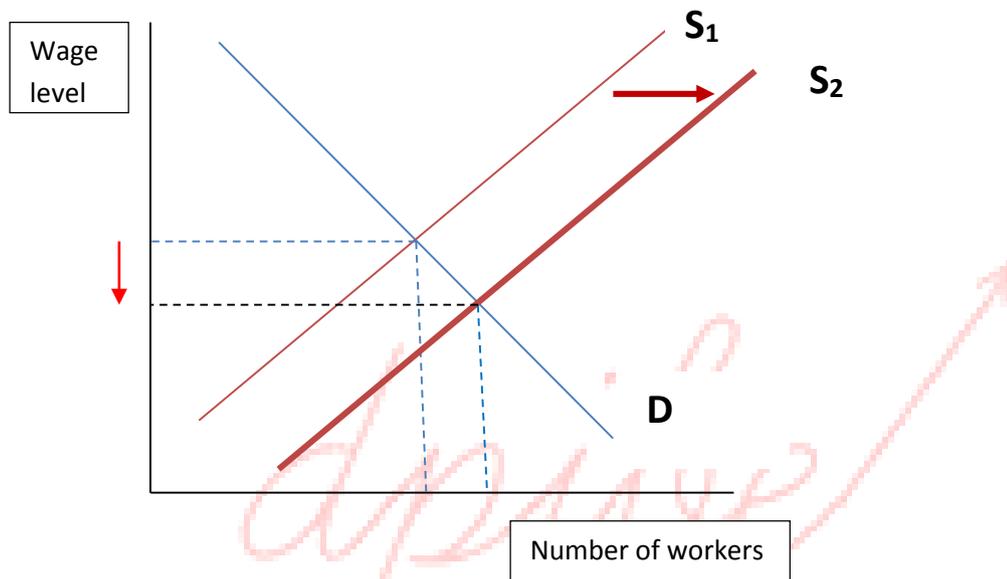
Since accountants and engineers are high-skilled occupations, we analysis those two occupations together. Comparing Figures 4 and 5, from 2008 to 2010, wages for accountants and engineers increased as the number of immigrants accountants and engineers increased. However, from 2010 to 2012, the figures show the number of immigrant accountants and its employee earnings were decrease due to the demand of accountants has tapered; but the situation of engineers were maintain its rising trend from previous years. This difference seems to reject the theoretical framework; that is, that accountants and engineers are complementary. However, it indicates that there is a positive relationship between the number of immigrants and the employee earnings for high skilled immigration.

Figure 5: Employee Earnings per hour on Three Occupations during 2008-2012



We analyse hairdressers, who are defined as low skilled immigrants. From 2008 to 2010, the number of immigrant hairdressers decreased dramatically, while the wage rate of hairdresser increased significantly. During the time between 2010 and 2012, there was remarkable increase on number of immigrant hairdresser. However, the wage rate of hairdresser decreased at the same time. With economic growth, the wage rate should be improved year by year. As a result, we believe the reason is that the previous hairdresser can be substituted by the immigrant hairdresser; therefore the oversupply drove down the wage rate, as depicted in Figure 6.

Figure 6: Market for jobs that are substitutable with low-skilled immigrants



4. Conclusion

This report discusses the impact of skilled immigration on the wage rate of workers in Australia. Australia is a country with a very large immigrant population; hence this immigration is very closely linked with the country's economy and it also plays a part in determining the wage rate of the natives. This report collects data from the number of skilled immigration and average weekly wage for three typical occupations in Australia, and finds that there is a positive correlation between the number of high-skilled immigration and their wage rates, however, there is weak evidence of complementarity between accounting and engineering jobs. Secondly, low-skilled immigrants decreases its workers' wage rate; we suggest this is the result of the substitutability of low-skilled labour in Australia.

There are several limitations in our research. According to the results that we analyzed in high-skilled immigration, we are not able to determine whether the earnings of workers increase due to high skilled immigrant growth in complementary sectors, or from a simple increase in demand for these skills due to economic growth. In addition, we have used the average weekly earnings because we cannot find weekly wage for only native workers.

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