

Key Sources of Missing Link between GDP and Employment Growth in Malaysian Labor Market

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Introduction

Economists in general recognize that if the economy is operating at full employment, labor market is said to be at its best conditions. Issues of any kind that negatively affect the economic well-being of those in the labor market are considered insignificant. Full employment situation, however, does not implies zero unemployment. Certain level of unemployment and job vacancies are unavoidable due to labor market frictions, such as geographical or skill mismatching in the demand for and supply of labor. But normally, the rate or also known as Friedman's 'natural rate of unemployment' is low. Any further attempt to increase aggregate demand in order to lower it will only cause temporarily reduction in unemployment and instead generates permanent increase in the general price level (Friedman 1968). Under the expectation literature (Phelps 1968), this situation is best represented by movements along long run vertical 'Phillips curve' (Phillips 1958).

Majority if not all are 'frictional unemployment' with short duration of unemployment and essentially voluntary. They are at least three major factors affecting the level of this natural jobless rate, namely movement in and out of the labor market, the length of time it takes for the unemployed to find acceptable jobs (duration of unemployment) and voluntary mobility among employed workers (turnover rates). These factors vary widely across demographic groups and thus its value at any point of time will strongly influenced by the demographic composition of the labor market. Obviously, the later is in turns affected by the change in the economic structure.

Nonetheless, under full employment, workers and job seekers will get more benefits from this notion of tight labor market. The later will find themselves easier to get a job, not only because of more vacancies but because employers' hiring standards are typically loosening. Since firms find it harder to hire new workers, they might offer existing part-time worker more hours or convert temporary workers to permanent position and perhaps increase workers' wages and benefits. Better pay will definitely entice new entrants and reentrants into the labor market. Eventually, in and out proses of the labor market will increase, so does the level of frictional unemployment.

Despite disagreements among economists, 4% unemployment rate is universally acceptable by most countries including Malaysia as targeted rate of full employment. Since 1992 and now more than 24 years, Malaysia managed to continuously keep unemployment in the economy at around this figure. The latest data for 2017 shows that the rate is estimated to remain low at 3.4% (Department of Statistics Malaysia). In short, the unemployment rate over the last two decades registered a very stable long run trend at or below full employment rate of unemployment. Over the same period, however, growth rates of gross domestic product (GDP) were highly variable. On average, particularly between 1995 and 2015, the growth rate has been

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rather moderate. Twice in 1998 and 2009, the rates were negative. In 2001 the rate was closed to zero. Therefore, it is quite surprising how the rate of unemployment during the said period could remain low for so long, in the absence of constant high economic growth. Clearly the relationships of this kind indicates that the absorption capacity of the economy is unlikely to be the main source of low unemployment rate. Nonetheless, they are at least several possible observations can be made as regards to why unemployment rate stayed continuously low. Part of the explanation could indeed be the present of some flexibility in the labor market particularly with respect to the present of large number of foreign workers (particularly illegal), serve as a counter-cyclical instrument and the informal sectors with the flexi-hours of work arrangements. Under this circumstances, even though with full employment, the market might demonstrate a totally different picture in terms of workers wellbeing. In short, there is no guarantee that those in the labor market, employed and unemployed, will get favorable treatments under full employment condition. It is therefore coming as no surprise that some recent studies indicate the presence of 'vulnerable workers' in the Malaysian labor market (Zulkifly & Hazrul 2014 and 2017).

Furthermore, as discussed elsewhere (Rasiah & Zukifly 1998), over the last half century, changes in Malaysia labor market as a whole interact closely with changes in economics structure changes. Most pronounced change has been a dramatic shift of labor from traditional agriculture sector to modern manufacturing and services sectors. Another significant change was a substantial increase of women participation in the labor market as paid workers as a result of a dramatic increase of women in the educational system. Subsequently, larger proportion of the labor force, had higher education and skill. These rapid changes will surely make mismatching phenomenon under full employment a pressing issue that need to be addressed amicably. First, skill and geographical mismatch that causing unemployment and output lost. Second, occupational mismatch, defined as a discrepancy between the competences that the workers can offer and the ones required to perform the occupation he or she is at the moment, causing resources are being wasted. In the literatures, this later phenomenon is known as an issue of 'over-education'. It must be pointed out, however, that very few is yet known about this phenomenon in Malaysia (Zulkifly et al 2010 and Zulkifly & Hazrul 2013). Thus, this particular labor market outcome will be the main focus of this paper. As a starting point, in order to make an assessment on the appropriateness of the said issue, a brief review on earlier development of the Malaysian labor market is warranted. It is discussed under the topic of issues of concern.

Historical Development of Malaysian Labor Market

As noted earlier, Malaysian full employment target was achieved at the beginning of 1990s. Now more than 26 years, the country is able to continuously maintain unemployment around this rate. This performance is however not without hitches. After about 12 years of independence, it was realised that although rapid strides were made in economic development, Malaysia continued to face among other things the problems of poverty and unemployment (Malaysia 1970). In other words, in earlier period since Independence in 1957, like many developing countries, the focus of development planning in Malaysia had been on economic growth. The emphasis was on the expansion of the national product, through the promotion of industrial policies, in particular the import substitution industrialization (ISI) strategy (1958-1970). The strategy was largely laissez-faire in nature (Jomo & Edwards 1998 and Rasiah & Zukifly 1998). The idea behind it is that the economic growth will naturally increase job creation. As more jobs are created, eventually the

level and the rate of unemployment will drop. Nonetheless, the course of economic development during 1960s raised concerned about this relationship.

During 1960s, the manufacturing sector (Peninsular Malaysia) managed to grow at impressive rate of 11.5% per year. As a result, the contribution of manufacturing sector to the gross domestic product (GDP) increased almost doubled from 8.5% in 1960 to 14.8% in 1970. In between these two years, the average annual growth rate of the real GDP was 6.4% (Malaysia 1971). Almost three quarters or 70% of this total growth (6.4%) was due to an increase in capital stock and 17% from labor input. The remaining 13% of the total growth was attributable to other factors, namely increases in capacity utilization, improvements in education, and technology (Rao 1980). These evidences revealed that the GDP growth, particularly the growth of manufacturing output during the said period, was biased towards capital. In conflict to that of belief noted earlier, the relationship between economic growth and jobs creations appeared to be non-complementary. In short, labor absorption capacity of the economy, especially manufacturing sector, was found to be comparatively low. During the said period, the absolute value of employment elasticity, measured by dividing growth in employment with growth in output, was 0.35. It was only higher than that of agriculture (0.24), but lower than the national average by 0.14 (Rasiah & Zukifly 1998).

As a result, the unemployment rate for Peninsular Malaysia increased by 2 percentage points from 6.0 percent to about 8.0% (or 7.3% for Malaysia as a whole) between 1962 and 1970. A larger population of the unemployed were the young one, particularly in the age group of 15-24. Nearly 90% of the unemployed had some basic formal education. Majority of them (close to 60%), however, had only attended primary school and very few only 0.4% had attended upper secondary and above. In terms of location, unemployment was most serious in the urban areas where the rate was around 10%. A significant part of this unemployed comprised young persons from rural areas seeking employment at low wages (but higher than that of the rural activities) in unskilled factory jobs in urban areas (Fisk 1982).

This 'jobless growth' scenario has been accompanied by another unpleasant economic feature of widening income inequalities. The Gini ratio for Peninsular Malaysia increased from 0.41 in 1957/58 to 0.51 in 1970, which was one of the highest rates among the Asian countries (Snodgrass 1975). This is due to the fact that incomes rose rapidly in the modern sectors, particularly manufacturing sector, and slowly, if at all, in the rural agricultural sector. As discussed elsewhere (Zainuddin & Zulkifly 1982), the former sector was mainly owned and operated by foreigner and non-Bumiputra, whilst the rural sector was mainly Malay. Polarization of this kind definitely will increase the likelihood of conflict and tension between races. However, it is not the purpose of this paper to be involved in this controversy. Nonetheless, the fact still remains that the '1969 racial riots' was the best example of this process. It immediately changed the course of Malaysian development planning with the adoption of the New Economic Policy (NEP). Its main objectives were to eradicate poverty among all Malaysian and to restructure the society so that the identification of race with economic function is reduced and eventually eliminated by 1990 (Malaysia 1971). Within this Outline Perspective Plan period of 1970-1990, full employment is also set as one of its principal objectives. More importantly, in line with these objectives, in 1970s, Government began to intervene strongly in the economy to speedup growth, as well as structural change.

Employment generation became a major pillar of Government policy in the Second and Third Malaysia Plans of 1971-1975 and 1976-1980 (Malaysia 1971 and 1976). Again, manufacturing was earmarked as the engine of growth. But, during this period, export-oriented

industries were being strongly encouraged, particularly through free-trade zones (FTZs) and other incentives under the 1968 and 1974 Acts. In addition, new land development programmes were implemented through various Government authorities such as the Federal Land Development Authority (FELDA). Besides expanding job opportunities in the rural sector, these programmes also aimed at increasing rural incomes and eradicate poverty. The public sector (Government) was also played an important part in creating jobs. Between 1970 and 1980, the rate of growth of Government employment was 5.7% per annum. As a result, government services share of total employment rose from 12.0% in 1970 to 13.7% in 1980 (Rasiah & Zulkifly 1998).

Resulted from these changes, especially the switch from import-substitution to export-oriented industrialization strategy, the economy as a whole has made substantial progress in jobs creation during 1970s. The employment growth achieved had an effect of reducing the unemployment rate from 7.3% in 1970 to 6.2% in 1980. Even though unemployment declined, it remained high, particularly among the young. In 1980, about 64% of the unemployed were in the age group of 15-24 (Malaysia 1984). The country also started to have a larger pool of relatively well educated unemployment.

As mentioned earlier, the manufacturing sector created the most jobs with average growth rate of 9.6% per annum during the said period. Resulted, its share in total employment increased from 8.7% to 15.7% between 1970 and 1980. The industries contributing to most of this growth were the labor intensive electronics and textiles industries. In these two industries, a substantial portion of the new young unskilled workers, male and female, were Malays from the rural areas. Consequently, there were reports that as at the end of the said decade (1970s), many rural areas including estate sector, faced emerging labor shortages. There were also reports of other economic consequences of their gradually ageing workforce, namely dropped in output and income. Similarly, by the late 1970s, the first signs of a tight labor market had emerged with reports of labor shortages in several labor intensive industries and the move toward the use of foreign labor. Subsequently, Malaysia started to become magnet for migrants (often illegal particularly in rural areas) from neighbouring countries, especially from Indonesia and Philippines, looking for better economic opportunities and higher incomes.

In 1980s, the government continued to emphasize employment generation as one of its key goals. Manpower development had also begun to receive a greater emphasis. The growth record of the Malaysian economy in 1980s, however, is less impressive. Following the sharp rise in world oil prices in 1979, the world economy experienced a sharp downturn in 1980. In response to this economic slowdown, in early 1980s, the government began to make explicit its intention to devote more resources to the development of heavy industries. The plan had emphasized that heavy industries would create new engines of growth and provide strong forward and backward linkages for the development of industries and thus the economy. Cement, iron, pulp and paper, petrochemical, and automobile industries received special attention.

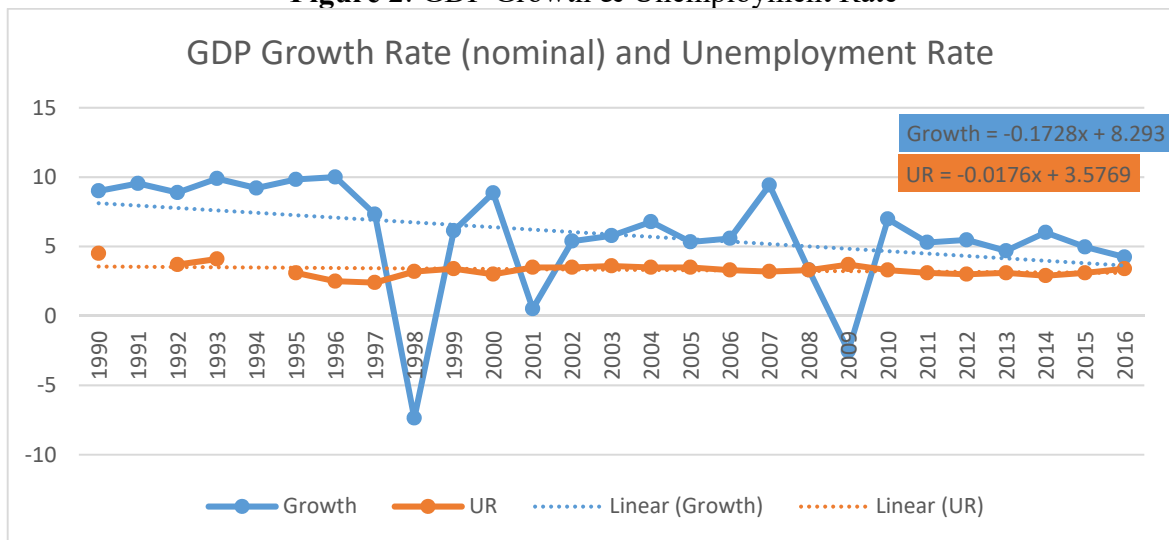
Malaysian GDP grew at 7.1% in 1981, but slowed to 5.6% and 5.8% in 1982 and 1983 respectively. Resulted, the three-year (1981-1983) growth rate averaged, 4.9%, well below the Fourth Malaysia Plan (1981-1985), target of 7.6%. Manufacturing growth of 4.9% per year was also below half the target set for 1981-1985 (Malaysia 1984). During the mid-1980s, growth slackened further with the collapse in commodity prices and stagnating exports. Slower private investment and the deflationary effects arising from the consolidation of public sector to contain the budgetary deficit lowered overall GDP growth for the first time since 1957. Output

contracted by 1.0% in 1985, and grew by only 1.2% in 1986, all below the growth target of the Fifth Malaysia Plan (1986–1990), namely 5.0% per year (Malaysia 1986).

In spite of a strong recovery (from recession 1985-1986) in 1987 and sustained growth thereafter, employment growth did not pick up until 1989. Unemployment stood at 7.3% in 1987 and 7.2% in 1988 and only fell to 5.7% in 1989. At the beginning of 1990s, however, unemployment rate continue to decline to reach full employment level of 3.7% in 1992, causing the economy with serious labor shortage.

Figure 2 gives the evolution of the unemployment rate for Malaysia as a whole since 1982. It shows the steady increase in unemployment from 3.4% in the 1982 to 7.4% in 1986, and a rough plateau with cyclical declines at the end of the 1980s and the beginning of 1990s. Since then, the unemployment rate, especially between 1995 and 2016, was below 4.0%. The figure has been consistently low for consecutive months of this year (2017) and the highest unemployment rate was recorded only at 3.5% in January. Consequently, overall unemployment rate for 2017 is estimated to remain low at 3.4% (Department of Statistics, Malaysia).

Figure 2: GDP Growth & Unemployment Rate



Interestingly, however to note that in 1990s, Malaysia achieved robust economic growth of above 6%. In fact, the country had an average annual growth rate of about 9.2% during the five years prior to 1998 when the Gross Domestic Product (GDP) plunged by 7.4%. Fortunately, the economy bounced back in 1999 and 2000 when it grew at 6.1% and 8.3% respectively, before contracting again in 2001. But since then the growth rate of GDP has been moderate. As shown in **Figure 2**, GDP growth rate has been highly variable over the past two decades especially between 1995 and 2015. Twice in 1998 and 2009, the rate was negative. In 2001 the rate was close to zero. Interestingly, during the said period, as discussed earlier, the unemployment rate on the other hand registered a very stable trend at full employment.

Therefore, it is quite surprising how the rate of unemployment during the said period could remain low for so long, in the absence of constant high economic growth. Clearly the relationships of this kind indicates that the absorption capacity of the economy (through aggregate demand or GDP growth) is unlikely to be the main source of low unemployment rate. In other words, the relationship between GDP growth and unemployment is rather weak.

Instead, the changes in the unemployment levels are very much due to other form of adjustments, namely flexibility in the demand for and supply of labor in the labor market. This study offers five possible sources that explains the missing link between GDP and employment growth

1. Inter-Sectoral Reverse Mobility

One interesting point to note that despite the Asian financial crisis of 1997-1999, unemployment rose to only 3.2% and 3.4% in 1998 and 1999 respectively, as most of the retrenchments carried out affected foreign workers. In fact, during the said period, as discussed in detail elsewhere (Rajah 2002 and Ishak & Zulkifly 2008), that inter-sector labor market flexibility helps workers from becoming unemployed. In short, reverse mobility from the manufacturing to agriculture sector reduced unemployment rate during the crisis. This is clearly shown in **Table 1**, total employment rose by 3.1% between 1997-1999. Within the said period, employment in agriculture and services increased by 9.9% and 2.6% respectively, while manufacturing employment recorded a decrease of 0.5%. In terms of total employment, the share of agriculture registered 17.3% in 1997 but increased to 18.4% in 1999. The share of manufacturing (and even services) employment on the other hand showed a downward trend.

The last column in **Table 1** shows a positive shift effect on employment in the agriculture sector, which recorded 1.1% change between 1997 and 1999. These changes indicate that for every 1,000 additional jobs in the national economy, 110 workers shifted from non-agriculture, namely manufacturing (80) and services (30) to agriculture sector. Thus, this evidence of inter-sector labor market flexibility reflects the fact that agriculture sector could absorb effectively laid-off workers from non-agriculture sectors during economic crisis, and subsequently helps maintained the unemployment rate at a low level.

In short, crowding into low productivity employment in the agricultural sector including those of urban informal sector, such as retail trade will intensify, depressing incomes and increasing poverty. Subsequently, there is no guarantee that those who work during tight labor market will get favorable treatments. The situation is worsening with the present of large number of foreign workers especially illegal foreign workers. Furthermore, unionism is now not a very powerful factor in the Malaysian labor market (Hazrul et al. 2016).

Table 1 Growth and changes of employment by industrial origin, 1997-1999

	Employment		Net Increase or Decrease		% of Total Employment		Shift in Employment Structure 1997-99
	1997 (a)	1999 (b)	(b) – (a)	%	1997 (c)	1999 (d)	% Point (d) – (c)
Total	8,569,000	8,838,000	269,000	3.1	100.0	100.0	0.0
Agriculture	1,481,000	1,628,000	147,000	9.9	17.3	18.4	1.1
Manufacturing	2,002,000	1,991,000	-11,000	-0.5	23.4	22.5	-0.8
Service/Others	5,086,000	5,219,000	133,000	2.6	59.4	59.1	-0.3

Source: Adopted from Ishak & Zulkifly (2008).

2. Influx of Foreign Worker

Recent progress in the labor market (low unemployment rate) generally implies that the economy of Malaysia is having a tight labor market. A common belief of the economists is that this notion of the labor market will bring positive effects to workers in terms of finding job, getting higher wages and obtaining better benefits. During tight labor market, job seekers will find themselves easier to get a job, not only because of more vacancies are available but hiring standards are typically loosening. On the other hand, as firms find it harder to hire new workers, they might offer existing part-time worker more hours or convert temporary workers to permanent position and perhaps go one step further to increase workers' wages and benefits. Better pay will definitely entice reentrants (some people who had given up on the labor force to look for work again) into the labor market. Thus, in-out flows of the labor market will increase. A scarcity of workers could drive investment in machines or perhaps more foreign labor.

The foreign (particularly unregistered) workers, serve as a counter-cyclical instrument. A serious labour shortage in the early 90s has forced the employers to resort to foreign labor. In this context, the country gains from the presence of foreign workers since they help to ameliorate labor market. This is particularly true in the agricultural (particularly plantation), construction and manufacturing sectors. Furthermore, their presence also lessens the upward pressure on wages.

Since then, labor migration not only continues, but it grows and later becomes a permanent feature of the Malaysian labor market. There are currently 1,781,598 foreign workers in the country, with the majority hailing from Indonesia with 728,870 workers. Followed by Nepal with 405,898 workers, Bangladesh with 221,089 workers, Myanmar with 127,705 workers and India with 114,455 workers. Pakistan, the Philippines, Vietnam and China have 59,281; 56,153; 29,039; and 15,399 workers respectively. Thailand on the other hand, has 12,603 workers in the country while Sri Lanka has 5,964. Cambodia has 5,103 and Laos has only 39 workers (Ministry of Home Affairs 2017). The details of their distribution by industries between 2000-2015 are shown in **Figure 1**.

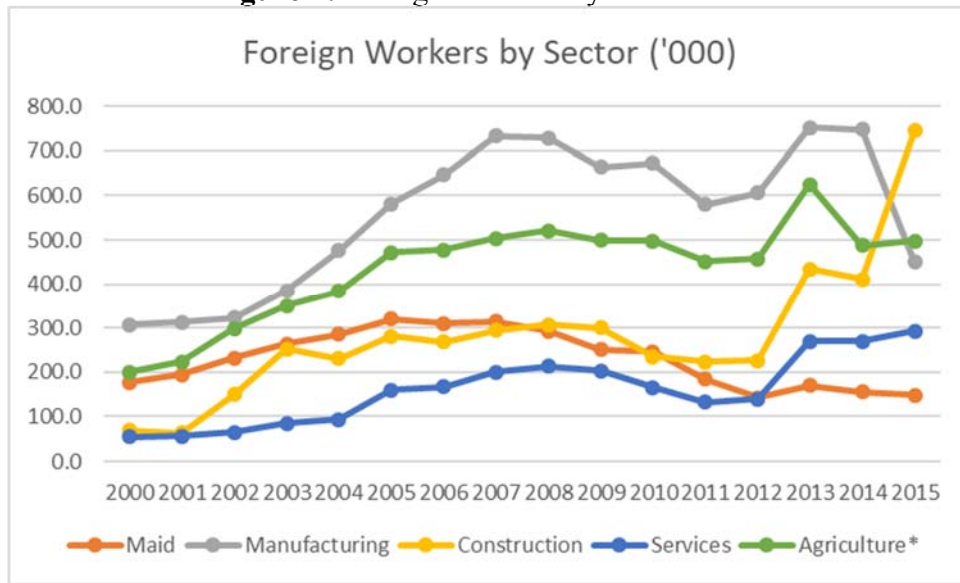
Majorities of foreign workers were employed in the manufacturing sector. In 2000, out of 807,096 foreign workers about 38.1% were in manufacturing sector and followed by agriculture (24.8%). The percentage of foreign worker in agriculture could have been higher if undocumented workers were included. Unfortunately, data on illegal immigrants were not published. Other important sectors that used foreign workers were construction (8.5%) and 8% were engaged in services. But by 2015, the distribution was completely changed. Majority of them (2,135,035) were found in the construction sector (34.9%), followed by agricultural sector (23.3%) and manufacturing sector (21.1%), while services 13.7%.

There was a mixed trend in number of foreign workers in selected sectors since 2000. It suggests that employment of foreign worker depends on fluctuation in economic activities in certain sectors such as manufacturing, agriculture, and services. The 'in and out' process among foreign worker in selected sectors indicates that there is a job retrenchment during the economic slowdown. However, the job retrenchment had taken place largely within foreign worker labor market. As a result, the economic slowdown does not translate into higher unemployment rate at the aggregate level.

The situation could happen if foreign worker serves as a complement to local worker in the labor market. In particular, foreign worker is not employed to replace the existing local workers' job. Their employment is taken place to fill up the vacuum in the labor market instead. The unique and exclusive characteristic of the job prevents firm to employ local if the foreign

workers exit labor market. Therefore, the local labor market is expected to be less affected in term of unemployment in particular if the change in economic activities only involve foreign worker. Several studies have shown that foreign worker presence does not necessarily reduce native employment (see Friedberg & Hunt (1995) and Venturini (1999)). The study on Italy labor market by Venturini (1999) proved that the employment effect of foreign worker presence is heterogeneous across sector.

Figure 1: Foreign Workers by Sector



3. Definition of Employed Worker

The number of unemployed worker continues to rise despite Malaysia manages to maintain a low unemployment rate since 1990. In 1990, the number of unemployed workers was recorded only at 300,000. However, during 2016 the number had reached to 500,000. In the meantime, there existed a significant number of underemployed workers in Malaysian labor market. Unfortunately, the existence of underemployed workers was overshadowed by the long trend of full employment situation in Malaysian labor market.

By definition, a person is considered employed if he or she works at least one hour during the reference week. International Labor Organization (ILO) during Sixteenth International Conference of Labour Statisticians (ICLS) (ILO 1998) considered a person is underemployed if the person satisfies the following three criteria during the reference period:

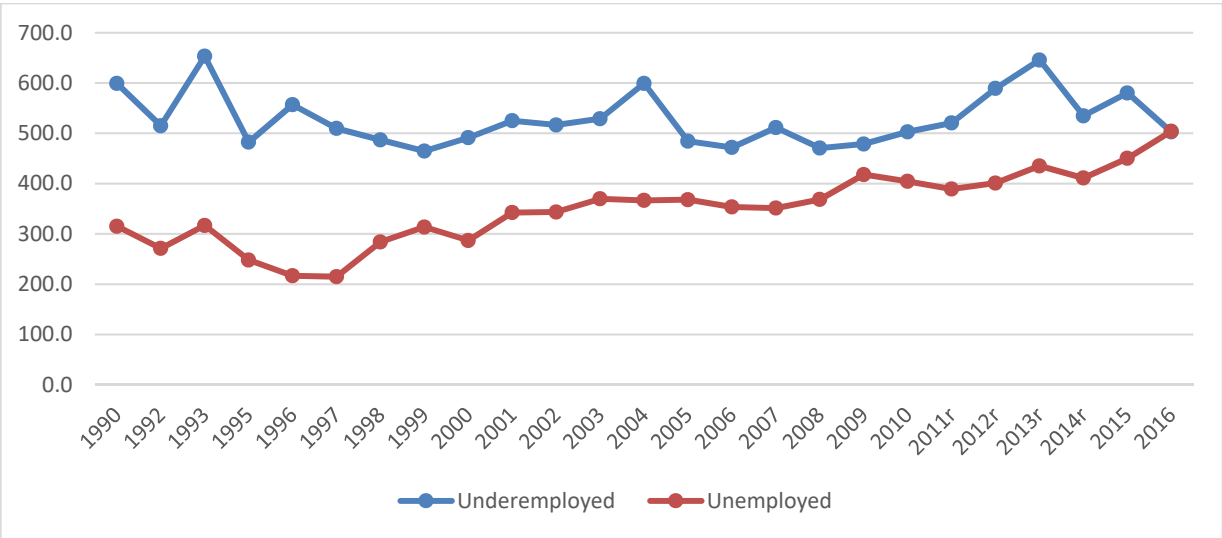
- 1) Willing to work additional hours, i.e. wanted another job (or jobs) in addition to their current job (or jobs) to increase their total hours of work; to replace any of their current jobs with another job (or jobs) with increased hours of work; to increase the hours of work in any of their current jobs; or a combination of the above;
- 2) Available to work additional hours, i.e. are ready, within a specified subsequent period, to work additional hours; and
- 3) Worked less than a threshold relating to working time, i.e. persons whose hours actually worked in all jobs in the reference period, were below a threshold, to be chosen according to 'national circumstances'.

This share of workers working less than 30 hours a week out of the total employment is used in Malaysia as a proxy for measuring underemployment. Their number are significantly large and larger than the total of unemployed worker most of the time. As shown in **Figure 3**, the trend is mixed since 1990 to explain that the type of underemployed in Malaysian labor market is related to fluctuations in economic activities.

During the crisis period, for example in 1998, a total of 486,000 workers were underemployed (working less than 30 hours a week) and 284,000 were unemployed. The number of unemployed worker could reach 770,000 if those who are working less than 30 hours is also considered as unemployed. In other word, the summation of unemployed workers and underemployed workers could yield a double increase in the unemployment rate at 8% during the economic crisis. In 2016, the number of unemployed and underemployed were almost equal (approximately 500,000) to reach 1 million workers for the first time. These workers in particular would represent 7% share of total available labour force in 2016. This is not surprising since the issue of unemployment rate understates the true effect of underemployed labor has been mentioned widely in the literatures (see for example Bosworth and Westaway, 1987; Bregger and Haugen, 1995; Denniss, 2003; Ross,1985).

The significant existence of underemployed worker indicates that economic grew slowly during the period. Department of Statistics, Malaysia identifies two key factors that explain why they work less hours namely job nature and insufficient works. During the economic slowdown, the demand for final goods and services experiences a decreasing trend. The fact that the demand for labor is derived demand, less labor was required in the production during the economic slowdown. In many cases, labor was hired on part-time and temporary basis since the demand for goods and services was weak and not sustain. These type of workers are not working full time but are able and willing to work more if demand does exist.

Figure 3: Number of Unemployed & Underemployed ('000)



4. Vulnerable workers

Influx of worker into low productivity employment, foreign worker presence and low unionism (Hazrul et al 2016) are to some extent demonstrate the unhealthiness of competition and uncalled for flexibility in the labor market, particularly in the light of zero hours contract. Low unemployment rates, therefore, do not necessarily creating favorable labor market conditions to the best interest of labor. It is therefore coming as no surprise that some recent studies indicate the presence of ‘vulnerable workers’ in the Malaysian labor market (Zulkifly 2006 and Zulkifly & Hazrul 2014 and Hazrul & Zulkifly 2017).³

Previous study by ILO (2013), Law Commission of Ontario (2012) Pollert (2007) and Pollert & Charlwood (2009) have shown that there exist vulnerable workers in labor market. Its number is close to half of number of work forces worldwide. It is worth noting that the number is expected to continue rising in the future (ILO, 2013). Family worker, self-employed worker and foreign worker are likely to be associated with vulnerable worker. They are considered most vulnerable due to the nature of their job that are dirty, difficult and dangerous. These jobs are unsecured and often associated with unpleasant working condition and long working hours. This study develops vulnerable worker indicator based on three criteria in Work Act 1955.

The study considers a worker is vulnerable if he or she does not meet at least one of the following criteria;

1. Contract of service.
2. Maximum working hours of 8 hours per day or 48 hours per week.
3. 1 rest day per week and 11 public holidays per year.

In order to identify the existence of vulnerable worker in Malaysian labor market, a survey was conducted to 1,729 workers in private sectors that are covered under Work Act 1955. Basically, Work Act 1955 aims to protect low-paid worker whose monthly income is less than RM2,000 per month. At present, the law is only subject to labors who works in Peninsular Malaysia. In order to understand the impact of influx of foreign worker on work conditions and wages of current labor, the survey consisted of respondents among the local labor only. Foreign workers exploits their low reservation wage to create a threat to the existing workers in term of wages and benefits. Therefore, there is a huge likelihood for the existing worker to be vulnerable.

Based on above criteria, the study found that there about 1,184 people or 68.5% from the sample of workers with wages less than RM2,000 are considered to be vulnerable. The distribution of workers in the sample is shown in table 2.

Table 2: Distribution of Workers in the Survey

Gender	Permanent	Contract	Temporary	Years of schooling (Average)	Age (Average)	Wages (Average)
Male	521	144	68	12	28.9	1,189

³ This is one of the reason why the national minimum wage was introduced for the first time in Malaysia in 2012. The purpose of this minimum wage is to protect vulnerable low wage workers or the working poor from exploitation and poverty. The minimum wage is often criticized for allegedly introducing rigidities and distortions in the labor market.

Female	722	139	135	12.6	27.3	1,032
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Probit model regression is then employed to identify significant factors that are associated with vulnerable worker. The dependent variable of interest takes the value of 1 if a worker is vulnerable and 0 otherwise. Thus, the expected value of a dichotomous variable $Y_i \in \{0,1\}$ is the probability that it takes the value 1:

$$E(Y_i) = 0.P(Y_i = 0) + 1.P(Y_i = 1) = P(Y_i = 1) \quad (1)$$

In the *Probit estimates*, we consider a latent variable that is not observed but linearly depends on X_i

$$Y_i^* = X_i'\beta + \varepsilon_i, \quad E(\varepsilon_i) = 0 \quad (2)$$

The latent variable Y_i^* can be interpreted as the utility difference between being a vulnerable, $Y_i = 1$ and non-vulnerable, $Y_i = 0$. Only the choice of Y_i is observed. An individual chooses $Y_i = 1$ if the latent variable is positive and 0 otherwise. Hence the observed variable is

$$\begin{aligned} Y_i &= 1 \text{ if } Y_i^* > 0 \\ &= 0 \text{ if } Y_i^* \leq 0 \end{aligned} \quad (3)$$

Further we assume that the individual observations (Y_i, X_i) are iid. That is the explanatory variable is *exogenous* and the error term is normally distributed,

$$\varepsilon_i | X_i \sim N(0,1) \quad (4)$$

Therefore, the probability that worker i to be vulnerable, $Y_i = 1$ can now be derived from the latent variable and the decision rule

$$\begin{aligned} P(Y_i = 1 | X_i) &= P(Y_i^* > 0 | X_i) = P(X_i'\beta + \varepsilon_i > 0 | X_i) = P(\varepsilon_i > -X_i'\beta) \\ &= 1 - \Phi(-X_i'\beta / \sigma) = \Phi(X_i'\beta / \sigma) \end{aligned} \quad (5)$$

The marginal effect of a change in X_{ik} on the expected value of the observed variable Y_i is following;

$$\frac{\partial E(Y_i | X_i)}{\partial X_{ik}} = \frac{\partial P(Y_i = 1 | X_i)}{\partial X_{ik}} = \phi(X_i'\beta) \beta_k \quad (6)$$

where this marginal effect depends on the characteristics X_i of observation i . Therefore, every individual has a different marginal effect

The result from Probit regression analysis suggests that education level, gender, job status, work region, and foreign workers' presence have significant effects on vulnerable worker's likelihood. In particular, the vulnerable workers are more prevalent among female, non-permanent position, and those with low education level. The presence of foreign worker in the firm reduces the likelihood of being vulnerable. This suggests that foreign workers in the firm substitutes local labor to involve in vulnerable jobs. Besides, labors who work in central region is less likely to be vulnerable than their counterpart in east region. It indicates that the likelihood of

being vulnerable is associated with region economic development. Table 3 show a probit regression of vulnerable worker.

Table 3: Probit Regression of Vulnerable Worker

Variable	Coefficient
Constant	1.6489 (7.59)***
Male	-0.1668 (-2.51)*
Age	0.0049 (1.33)
Foreign Worker	-0.3051 (-4.37)***
Permanent	-0.1057 (-0.97)
Contract	-0.9465 (-7.19)***
Years of Schooling	-0.0701 (-5.30)***
North	0.2589 (1.87)
Central	-0.2060 (-2.38)*
South	0.1295 (1.55)
Pseudo R^2	0.0892
Sample Size	1729

Note: Point in the parenthesis represents z statistic.

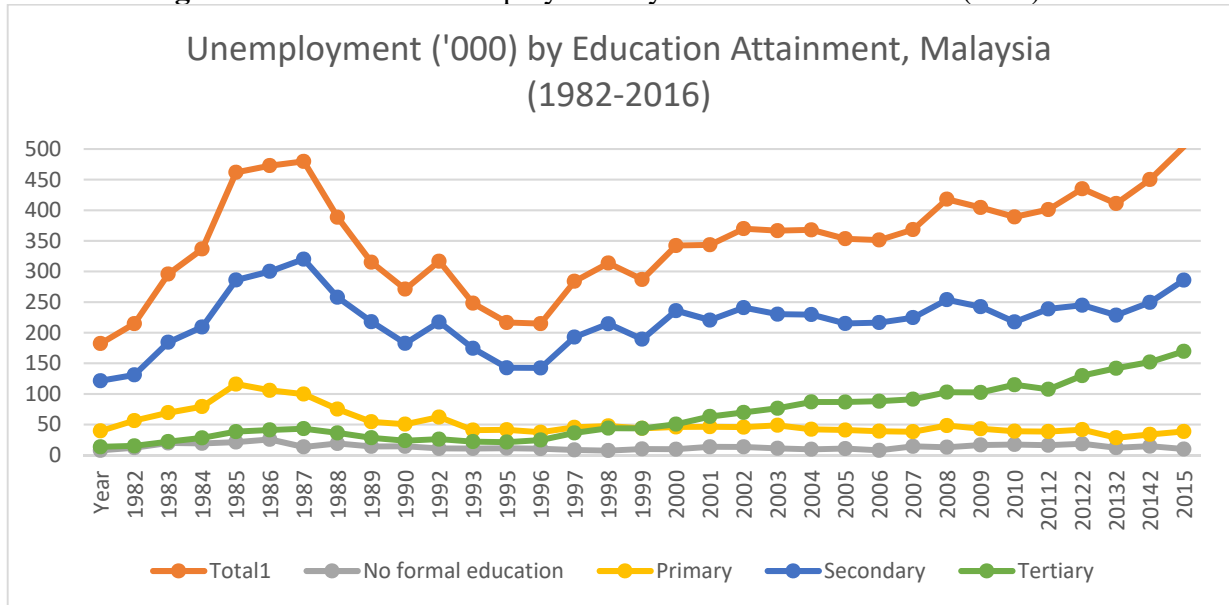
5. Over-education and Educational Inflation

There are two practices in Malaysian wage setting seem to be particularly pertinent to the problem of wage flexibility in labor market. Firstly, many collective bargaining agreements provide for at least two-year coverage. Even when the work place is not unionized, formal sector employers are keen to follow this ongoing practice of wage setting. Clearly, with contracts fixed for a long period of time, employers cannot cut the wages of those employees who are not retrenched. Secondly, Malaysian employers, at least in the formal sector, follow automatic seniority increments system of granting pay increases based on years of service in the firm (Zulkifly & Ishak 1998 and Zulkifly et al 2012). The World Bank (1989) report has pointed out that while wages of senior workers are relatively rigid, reduction in entry level salaries is a major element in the downward flexibility of wages. This is, however, rather difficult to be implemented during the period of tight labor market as recently experienced by Malaysia. If this does not happen, then, employers would tend to adjust by upgrading the educational requirements of the labor force. Job seekers of a particular educational skill also will lower their expectations and accept jobs requiring lower skill levels.

This is due to the increasing number of worker with good education. A large supply of worker with the same education level results in high job market competition and reduces the

likelihood to obtain job. Furthermore, as a larger proportion of the labor force, employed and unemployed, having higher education (figure 4) will surely make mismatching (occupational mismatching) under full employment a pressing issue that need to be addressed amicably. Occupational mismatch, defined as a discrepancy between the competences that the workers can offer and the ones required to perform the occupation he or she is at the moment. In the literatures, this phenomenon is known as an issue of ‘over-education’. It must be pointed out, however, that very few is yet known about this phenomenon in Malaysia (Zulkifly et all 2010 and Zulkifly & Hazrul 2013).

Figure 4: Number of Unemployment by Education Attainment (‘000)



Source: Department of Statistics, Malaysia

Note: ¹Total includes unknown educational attainment

²The 2011-2014 statistics were updated based on the population estimates of the respective years

This paper uses the most recent 2013 Labor Survey (LS) which is intended to serve as a nationally representative sample of Malaysian workers collected for the Department of Higher Education, Malaysian Ministry of Education under the Fundamental Research Grant Scheme (FRGS). The main object of this survey was to provide comprehensive information and national-level estimates for Malaysia labor force behavior and other associated such as demographic status and human capital characteristics, employment background, individuals’ attitudes and satisfaction at work, and a number of geographic dimensions. The LS conducts on a sample of currently employed workers between 15 and 60 years of age distributed nationwide. For the present paper, the 2013 LS is particular suitable. It is intended to serve as a national sample of interviews with workers across all sectors and the most recent dataset that provides relevant information on the current trends among labor unions in the Malaysian labor market, (see previous studies by Osman-Rani (1980) and Zulkifly and Ishak (1998) that analyzed with different data). However, we are concentrating solely on private sector employees, the largest sector subgroup. We restrict the 2013 LS to salary workers from the age of 15 to 60, so that self-employed and unpaid family-employed workers are not included in the sample because of data

gaps make calculation of their wages impossible. Thus, we are left with a sample of 1,651 private sector workers.

Table 2 shows the summary statistics from the sample survey. The GROSS WAGE variable is the individual wages including permanent allowances received in the workplace. In this data set, the gross wage is derived from data on the individual's current job. In the data, the minimum basic monthly wage obtained by a worker is RM500, while the maximum wage is RM5,600. The MALE variable refers to the gender of workers, assigned a value of 1 if male and zero if otherwise. The MARRIED variable refer to the marital status of the worker, assigned a value of 1 is assigned if the worker is married and zero if otherwise. The present study consists of an almost equal number of male-female and married-unmarried workers. The education level variable (EDUC_LEVEL) shows a mean of 3.6075, with a minimum level of education at primary school and a maximum level of education at first degree and higher. The average education level of 3.6075 implies that, on average, workers are able to at least finish high school and receive SPM certificate before entering the job market. The variables of AGE refer to workers current age in the labor market. On average, workers in the labor market are 28 years old. The last variable included in the present study is JOB_PERT, which refers to whether a worker is a permanent worker or contract worker. Workers are assigned a value of 1 if they are permanent workers, 2 contract and 3 for temporary. The mean of job status is about 1.3353, implying that the present study is largely represented by the permanent workers

Table 4: Summary Statistics

Variable	Mean	Std. Deviation	Min	Max
<i>GROSS WAGE</i>	1253.36	620.37	500	5600
<i>MALE</i>	0.4451	0.4971	0	1
<i>MARRIED</i>	0.4513	0.4978	0	1
<i>AGE</i>	28.21	8.6164	16	60
<i>JOB_STATUS</i>	1.3353	0.6302	1	3
<i>EDUC_LEVEL</i>	3.6074	1.3057	1	6
<i>OVER-EDUCATION</i>	0.1641	0.3705	0	1
Observation	1651			

Note: The sample is salaried workers aged 16 to 65 from the 2012 Labor Survey.

OVER-EDUCATION variable is the central interest to this study. There are 271 overeducated labor which accounts for about 16% of the total sample. The over-educated labor is dominated by permanent workers. Nevertheless, it is worth noting that there is a significant number of overeducated labor among temporary workers at 56. These workers are willing to hold a temporary job that lower than their qualification to avoid being unemployed. Thus, the traditional estimation of unemployment rate would not be able to capture this group of workers. A distribution of over-education across education level is shown in table 5.

Table 5: Distribution of Over-education Across Education Levels

Education Level	Under-education	Equal education	Over-education
Primary School	6 (8.1%)	54 (72.9%)	14 (19%)
Lower Secondary School	10 (6.9%)	120 (83.9%)	13 (9.2%)
High School	22 (2.7%)	703 (87.3%)	80 (10%)
Diploma	20 (4.5%)	308 (70.3%)	110 (25.2%)
First Degree	4 (2.1%)	133 (69.6%)	54 (28.3%)
Total	62	1318	271

Share of over-educated labor is considerably large among diploma and first-degree holders. It indicates that there is a huge likelihood of educational mismatch as the labors continue to invest in education. This finding also suggests that two years investment in schooling after high school might not be sufficient for these labors to add significant value added and differentiate them from those with only high school certificate.

To analyze the effect of over education on wages, the study employs an adjusted Mincer (1974) wage regression model. The study extends the standard model by introducing interaction dummies between over education and education achievement in model 2 and model 3. In the model 3, the effect of education is measured based on workers' tertiary educational level status. The models are shown as following;

$$\ln(W_i) = \alpha + \beta_1(YRS_i) + \beta_2(EXP_i) + \beta_3(EXP^2_i) + \beta_4(MALE_i) + \beta_5(MARRIED_i) + \beta_6(OVEREDUCATED_i) + \varepsilon_i \quad (7)$$

$$\ln(W_i) = \alpha + \beta_1(YRS_i) + \beta_2(EXP_i) + \beta_3(EXP^2_i) + \beta_4(MALE_i) + \beta_5(MARRIED_i) + \beta_6(OVEREDUCATED_i) + \beta_6(OVER_YRS_i) + \varepsilon_i \quad (8)$$

$$\ln(W_i) = \alpha + \beta_1(TERTIARY_i) + \beta_2(EXP_i) + \beta_3(EXP^2_i) + \beta_4(MALE_i) + \beta_5(MARRIED_i) + \beta_6(OVEREDUCATED_i) + \beta_6(OVER_TERTIARY_i) + \varepsilon_i \quad (9)$$

Where

YRS = Years of Schooling

TERTIARY = Tertiary educational level status

OVER_YRS = Interaction dummy between years of schooling and overeducation

OVER_TERTIARY = Interaction dummy between tertiary education and overeducatio

Table 6: Mincer Wage Regression of Over-education

Model	(1)	(2)	(3)
Constant	5.6945 (0.0596)***	5.6275 (0.0619)***	6.6645 (0.0239)***
Years Schooling	0.0910 (0.0041)***	0.0969 (0.0043)***	
Experience (EXP)	0.0239 (0.0031)***	0.0231 (0.0031)***	0.0226 (0.0032)***
Experience Square (EXP^2)	-0.000 (0.0001)***	-0.0003 (0.0001)***	-0.0005(0.0001)***
Male	0.1675 (0.0177)***	0.1684 (0.0177)***	0.1591 (0.0179)***
Married	0.0710 (0.0216)***	0.0739 (0.0215)***	0.0920 (0.0217)***
Overeducated	-0.2059 (0.0241)***	0.1982 (0.1084)	-0.1401(0.0494)***
Over_Years		-0.0312 (0.0082)***	
Tertier_Edu	-		0.4662 (0.0225)***
Over_Tertier			-0.1491(0.0494)***
Adjusted R^2	0.2978	0.3040	0.2816
Sample Size	1651	1651	1651

Note: Point in the parenthesis represents *t* statistic.

*, ** and *** significant at 1%, 5%, and 10% confidence level.

Table 6 shows the results of the OLS mincer regression of log wage on independent variables for different models. Over-education variable shows a negative significant coefficient on worker wages in model 1 and 3. Thus, overeducated labor receives wage penalty of 20 percent and 14 percent reduction in the gross wage respectively.

Further, the interaction term of overeducated with schooling variables provides more intuitive results. In model 2, the return to years of schooling is estimated at 9%. Nonetheless, for the overeducated labor, one year increases in schooling results in only 6.5 percent increase in wage. In particular, there is about 2.5% wage penalty for the overeducated labor.

Model 3 shows that overeducated labor in general receives 14% lower wage regardless of the education levels. Unfortunately, overeducated labor that have tertiary education suffer another 14% of wage reduction. On a different view, while those with tertiary education is estimated to receive 46% wage return compare to other education groups, those whose work in the occupation that require lower qualification are estimated to receive lower wage return at 32%.

Concluding Remarks

The main objective of this paper was to highlight important key issues relating to missing link between GDP and employment growth in Malaysia. One important observation emerged from a brief discussion on historical background of these issues shows that external factors, such as foreign investments, and the government policies have successfully expanded manufacturing sector and the growth of the economy as a whole over the last four decades. Nonetheless, its ability to absorb labor is very much depending on government direct intervention in the economy. Most recent evidence of this notion is clearly pictured in terms of weak relationships between economic growth and the unemployment rate. In fact, since early 2000, the performance of the Malaysian economy not only moderate but its long trend growth is highly variable. On the other hand, labor market is working quite well at least in terms of unemployment rate. In fact, since 1992, and now more than 24 years, unemployment continuously stay low at full

employment unemployment rate, namely below 4%. Subsequently, labor shortage emerged in many if not all pockets of labor market. As a result, reliance on foreign labor if not properly control will continue to be a permanent feature of the Malaysian labor market in the future.

Definition of employed worker is identified to be a major source of the missing link between economic growth and unemployment rate. By definition, a person is considered employed if he or she works at least one hour during the reference week. This share of workers working less than 30 hours a week is not counted in the calculation of unemployment rate. Their number are quite large and larger than the total of purely unemployed labor. During the crisis period, for example in 1998, a total of 860,600 workers (or 14% of the total employed) were underemployed (working less than 30 hours a week). Therefore, if the share of underemployed worker is considered in the calculation of unemployment rate, it is very likely that the actual unemployment rate increases dramatically.

Besides that, several internal nonconventional adjustment factors seem to play an important role in shaping changes in the labor market for the past several decades. First, the nature of agricultural and informal sectors that have low barriers to entry (so that most who really wants to work can find something to do) and combine with flexi work arrangements serve as an avenue of employment generation. Under reverse mobility, for instance during the period of severe recession, the agriculture sector acts as a buffer to lessen the impact of job losses in the manufacturing sector. Second, the availability of large number of foreign labors also help to ameliorate labor market. The later, particularly illegals, however, is sometimes harmful because of its depressing effect on the wages of the poor, unskilled workers and is likely therefore to increase the number of vulnerable workers in the depressing regions. Third, hiring standards is another factor and unfortunately since it is used not in accordance with tight labor market conditions causes occupational mismatch in labor market or also known as over-education phenomenon. Both of these two key issues, namely vulnerable workers and over-education are tested using empirical studies and their findings are as follow.

Data on recent survey shows that there exists a significant number of vulnerable workers in Malaysia labor market. More importantly, the conclusions of the econometric (probit regression analysis) evidence on vulnerable suggests that education level, gender, job status, work region, and the presence of foreign worker have significant effects on vulnerable worker's likelihood. The vulnerable workers are more prevalent among female, non-permanent position, and those with low education level. In addition, the result also indicates that the likelihood of being vulnerable is closely associated with region economic development. Workers in less developed region are more likelihood of being vulnerable.

The conclusions of the econometric (Mincer equation) evidence on over-education shows that the share of over-education is considerably large among diploma and first degree holder. It indicates that there is a likelihood of educational mismatch as the labors continue to invest in education. In terms of its effect on wages, study shows a negative significant coefficient of over-education variable which indicates that those who are over-education has to pay a penalty in the form of reduction in the gross wage. Therefore, both issues need to be addressed with greater concern from the authority. However, on a more cautious note further study and in particular tests of the statistical presented here is necessary to test the robustness of the result.

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