EFFECTS OF LABOR MARKET AND FDI ON ECONOMIC GROWTH IN MALAYSIA

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Abstract: This paper examines the effects of labor market and FDI on economic growth in Malaysia. Economic growth and productivity improvement are among the most important issues in the field of economics. In the past decades, economists have attempted to find out the reason why some countries are able to grow faster than the others. Studies by Durlauf, Johnson and Temple (2005) and Sala-i-Martin (1997) identified more than sixty different variables that contribute to the growth performance. One of them is FDI, which is believed to bring positive externalities to the host country. FDI by MNCs has always been linked to new and superior technologies, extensive R&D activity, new managerial techniques, increased capital, job creation and improvement of working conditions, improvement in the quality of human capital, development of industrial sector, broadening of the tax base and better integration into the world markets (Caves 1974; Perez 1997; Haddad and Harrison 1993; Markusen and Venables 1999; Babic and Strucka 2001). This paper is examined relationship between labor market and FDI on economic growth in Malaysia. By using bound testing approach to cointegration and error correction model, developed within an autoregressive distributed lag (ARDL) framework developed by Pesaran et al. (1999) and data cover from period 1970-2017, we investigate whether a long-run equilibrium relationship exists between labor market and FDI on economic growth. The expected result for long run relationship between labor market and FDI in contribute the economic growth in Malaysia.

Keywords: Labor market, FDI, Economic Growth, Malaysia, ARDL

Introduction
Economic growth and productivity improvement are among the most important issues in the field of economics. In the past decades, economists have attempted to find out the reason why some countries are able to grow faster than the others. Studies by Durlauf, Johnson and Temple (2005) and Sala-i-Martin (1997) identified more than sixty different variables that contribute to the growth performance. One of them is FDI, which is believed to bring positive externalities to the host country. FDI by MNCs has always been linked to
new and superior technologies, extensive R&D activity, new managerial techniques, increased capital, job creation and improvement of working conditions, improvement in the quality of human capital, development of industrial sector, broadening of the tax base and better integration into the world markets (Caves 1974; Perez 1997; Haddad and Harrison 1993; Markusen and Venables 1999; Babic and Strucka 2001).

Based on these positive expectations, many countries have lifted a lot of restrictions on free flow of capital across border, leading to significant inflows of FDI globally. Global FDI inflows increased from $10.1 billion in 1970 to $1,319 billion in 2000 and reached at its highest record of $2,985 billion in 2007 before it dropped to $1,561 billion in 2014. According to the World Bank, global FDI flows into developing countries have surpassed the amount of FDI received by the developed countries. As in 2012, developing countries received $629 billion as compared to $516 billion received by developed countries, and in 2013 FDI flows into developing countries was $778 billion and only $565 billion FDI flows to developed countries. However due to global economic uncertainty, the flows of FDI dropped in 2014 where developed and developing countries received $753 billion and $499 billion of FDI inflows, respectively. Thus, FDI appears to be an important channel for international knowledge transmission and it therefore becomes a central element of development strategy for many developing countries.

Malaysia has transformed its economy from an agricultural to manufacturing and the services sectors have been change in the labour market (Inagami, 1998 and Kuruvilla, 1998). The demand for labour in Malaysia at the time when the agriculture sector was predominant is different from the nature of labour that is demanded now. While labour-intensive production methods were appropriate in the years after Malaysia’s independence, such methods of production are no longer desirable or optimal. Malaysia, ASEAN’s third largest economy is well on track to achieve its goal of becoming a high income economy by 2020. Despite modest GDP growth of 4.1 percent in 2016 that is below the ASEAN average of 4.5 percent, Malaysia is one of the top performing economies in the region in terms of efficiency and business regulations. This competitive edge has been maintained by continuous reform effort by the government. Malaysia is a net recipient of FDI, which accounts for the majority of inflows into the economy. Inward FDI is projected to have grown by 40 per cent year –on-year in 2016 to reach MYR 50 billion with the 2015 total MYR 36 billion and this figure having surprise and have been surpassed by the end of September. Manufacturing account for the majority (51.2 percent) of investment, followed closely by services (47 percent) and primary industries received final 1.8 percent.
The changing nature of the economies in the regions adds a further source of pressure on the supply of labour. Malaysia used to be favoured destination for foreign direct investment (FDI) because of its labour endowments; labour was cheap, abundant and pliant. These characteristics encouraged foreign investors to base their factories in Malaysia. The objective of this study is examining effects of labor market and foreign direct investment on economic growth in Malaysia.

**Empirical Literature**

Labour market showed to be an important element in the development strategy. For instance, the reform of labour market played an important role in attracting the FDI inflows especially for FDI flows with resource seeking motive, asset seeking and export oriented. Benacek et al. (2000) and Normaz (2009) studied on ASEAN countries, where according to Benacek et al., (2000), location advantage available in ASEAN region like cheaper input factors, particularly labour costs and natural material costs and complemented with preferential investment policies encourage more inflows of FDI. However, the availability of labour may not benefit the host countries, because the link between FDI inflows and labour abundance may be negative (Zhang and Markusen (1997)) Instead, Zhang and Markusen (1997) revealed that other factors like the skill of labour was more important in attracting FDI inflows.

Moreover, policies implemented in labour market (rigidity and flexibility) may also influence FDI inflows. Beatson (1995) defined labour market flexibility as ability of labour markets respond to changing economic conditions. The importance of labour market flexibility as determinant of FDI inflows was discussed in Whyman and Baimbridge (2006) this factor was considered vital to the choice of FDI decision because an entire production process was entrusted in the hands of the host country labour force. According to Whyman and Baimbridge (2006), the measurement of labour market flexibility is based on three categories; supply side; labour cost; and functional. The supply side flexibility can be divided by two elements; skills and qualification, and numerical flexibility (i.e. quality comprise fiscal policy and regulation). The second category of flexibility are labour cost that includes minimum wage, aggregate wage
flexibility, institution and patterns of wage bargains, incentive pay, workplace and wage flexibility. The third category is the functional flexibility that includes job diversification, multi-skills, teamwork, employee participation, subcontracting and human resource management initiative.

The precise relationship between labour market flexibility and FDI inflows was harder to predict because the impact depends on the indicator used to measure labour market flexibility. For instance, by using labour market standard and regulation as indicator for labour market flexibility, there are different impacts towards FDI. On the single hand, labour market standards and regulations increases costs and diminishes the power of a firm to react to market changes, which deters FDI. On the other hand, labour market standards and regulations enhance labour productivity, which attracts FDI. (i.e study by Nicoletti et al. (2003) who found that tight employment protection will reduces FDI in OECD nations). Other studies that suggested flexible labour markets were significant attractors for FDI are Cooke, (1997); Cooke and Noble (1998); Ferner and Quintanilla (1998); Bentolila and Bertola, (1990); Cooke (2001); Gorg, (2002); Dewit et al. (2003) and Haaland et al. (2003). Haaland et al. (2003) demonstrated a trade-off between FDI incentives and labour market flexibility and showed that a nation with a more flexible labour market may find it easier to attract FDI. Javorcik and Spatareanu (2004) stated that the higher the flexibility of labour market in the host country would encourage higher inflows of investment with a bigger volume.

In addition to the impact on FDI inflows, labour market may also correlate with economic growth. A few studies examined this issue. Nickell and Layard (1999) and Schultz (2004) established that countries with more flexible labour markets were expected to generate higher productivity and faster growth. Meanwhile, Forteza and Rama (2000) noticed that nations with more flexible markets recovered faster from recessions. Calderon and Chong (2005) examined the influence of a flexible labour market on economic growth in a sample of 76 developing countries for the period 1970 to 2000. Using the GMM method, they confirmed that less regulated labour markets could foster productivity growth. Betcherman (2015) examined the impact of labour market regulation indicators, namely the minimum wage and the employment protection legislation, in developing countries. The author concluded that the minimum wage has a positive impact on productivity growth and this finding is parallel to Bassanini and Venn (2007), who examined 18 OECD countries for the period 1979 to 2003. Meanwhile, the finding of Betcherman (2015) was similar to Basanini et al. (2009), where the impact of employment protection legislation was negatively with productivity growth. Generally, the empirical literatures suggested that labour market flexibility was among the important determinants of FDI inflows, productivity and output growth.

Empirical evidence suggests that not all countries have benefited from FDI inflows. In fact, the literature reveals that the growth-effect of FDI is ambiguous (Gorg and Greenaway, 2004; Alguacil, Cuadros and Orts, 2011). In some cases, FDI appears to exert positive impacts on growth of host countries but in some other cases, there were no impacts or even negative impacts. This study argues that the ambiguous findings for the growth–effect of FDI are due to the failure to account the contingency effect in the FDI and growth relationship. Several factors has been highlighted in the literature such as financial markets (King and Levine, 1993; Beck, Levine and Loayza, 2000; Hermes and Lensink, 2003; Alfaro et al., 2004; Durham, 2004 and Azman-Saini et al., 2010), trade
regime (Balasubramanyam, Salisu and Sapsford, 1996), human capital (Noorbakhsh, Paloni, Youssef, 2001; Borensztein et al., 1998), economic freedom (Azman Saini et al., 2010) and institutional quality (Masron and Abdullah, 2010; Cristina and Levieuge, 2013; and Esew and Yaroson, 2014).

The present study argues that the growth-effect of FDI is possibly influenced by the flexibility of labour market in the host country. This factor is expected to affect FDI spillovers because when market is flexible, managers and workers who were employed and trained by MNCs can easily join local firms and bring along all the knowledge and technology they have acquired while working with MNCs. MNCs is known to be the most technologically advanced firms as they invest substantially in R&D activity. In this way, new technology, skills, managerial and organization best practices may be transferred from MNCs to local firms. This process is expected to enhance the productivity of local firms which eventually lead to the expansion of local economy.

Data and Methodology

In this study, we employed time series data analysis. To examine the order of integration, autoregressive distributed lags (ARDL) or a bounds test was used to examine the relation between exogenous and endogenous variables. In addition, a unit root test was used to test for stationarity. The time series data were annual and covered the period 1970-2017 for Malaysia. The economic growth was in GDP per capita. The independent variables are divided for several indicators such as labor market (LM), foreign direct investment (FDI) and inflation. All data were obtained from the World Bank Indicator and they were converted into natural logarithmic form before the empirical analysis.

To examine the effects of the labor market and foreign direct investment (FDI) on economic growth, ARDL bounds testing as introduced by Pesaran et al. (2001) was used on the following model. The economic growth as measured by GDP per capita (GDPC) was predetermined as the dependent variable, while the independent variable was the labor market (LM) and foreign direct investment (FDI) and the control variables were inflation rate (INF).

The model specification was as follows:

$$GDPC_t = f(LM_t, FDI_t, INF_t)$$ (1)

$$GDPC_t = \beta_0 + \beta_1 LM_{t-1} + \beta_2 FDI_{t-1} + \beta_3 INF_{t-1} + \mu_t$$ (2)

For multiple regression analysis, the log likelihood function of this model can be written as:

$$\text{LNGDPC}_t = \beta_0 + \beta_1 \text{LNLM}_{t-1} + \beta_2 \text{LNFDI}_{t-1} + \beta_3 \text{LNINF}_{t-1} + \mu_t$$ (3)
By using the autoregressive distributed lags (ARDL), the model is transformed into:

\[
\Delta \text{LGDP}_t = \beta_0 + \beta_1 \text{LNLM}_{t-1} + \beta_2 \text{LNFDI}_{t-1} + \beta_3 \text{LNINF}_{t-1} + \sum_{i=1}^{3} \beta_i \Delta \text{LNLM}_{t-1}
\]

\[
+ \sum_{i=1}^{3} \beta_{5i} \Delta \text{LNFDI}_{t-1} + \sum_{i=1}^{3} \beta_{6i} \Delta \text{LNINF}_{t-1} + \mu_t
\]

Where:

\( \text{GDP} = \text{Gross Domestic Product per capita} \)

\( \text{LM} = \text{Labor Market} \)

\( \text{FDI} = \text{Foreign Direct Investment} \)

\( \text{INF} = \text{Inflation Rate} \)

\( \Delta = \text{First difference operator} \)

To examine the long-run relationship, bounds testing for cointegration based on critical values adopted from Pesaran et al. (2001) was used with the following null hypothesis (for no long-run relationship) and alternative hypothesis (for a long-run relationship): \( H_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0 \) and \( H_A \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq 0 \)

**Results and Discussions**

**Unit Root Test**

A unit root test was done for all variables using the Augmented Dickey Fuller (ADF) and Phillips-Perron tests to satisfy the pre-requisite condition of the dependent variable’s being non-stationary or containing a unit root in I(1) and stationary at I(0) as prescribed by Pesaran (2001).

Tables 1 and Table 2 present the results of the ADF and Philips-Perron tests. The order of integration was tested at 1, 5, and 10 percent significance levels, and the critical values were obtained from the Mackinnon (1991) Tables. The results were robust regardless of the lag length. They showed that after differencing the variables once, they were confirmed to be stationary. The ADF and Phillips-Perron tests applied to the first difference of the data series rejected the null hypothesis of non-stationarity for all the variables; therefore, it is worth concluding that all the variables used in this study were not I(2). Based on the ADF test statistic, it was found that the series stationary at different level for GDPC and FDI are stationary at level I(0), and the others variable are integrated at I(1) while for Philips-Perron test the variables GDPC, LM, FDI, and INF are integrated at I(1).
Table 1: ADF and PP Unit Root Tests Results for Stationary of The Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Difference</td>
</tr>
<tr>
<td></td>
<td>Intercept &amp; Trend</td>
<td>Intercept &amp; Trend</td>
</tr>
<tr>
<td>LNGDPC (Gross Domestic Per Capita)</td>
<td>-0.3957 (0)</td>
<td>-3.7032 (1) **</td>
</tr>
<tr>
<td>LNLM (Labor Market)</td>
<td>-0.0321 (2)</td>
<td>-0.4194 (2)</td>
</tr>
<tr>
<td>LNFDI (Foreign Direct Investment)</td>
<td>-3.5949 (0) ***</td>
<td>-1.1014 (0) **</td>
</tr>
<tr>
<td>LNINF (Inflation rate)</td>
<td>3.1742 (0)</td>
<td>0.0660 (1)</td>
</tr>
</tbody>
</table>

*** Significant at 1% level, ** significant at 5% level, *significant at 10% level.

Table 2 represents the long run cointegration test analysis, and existence of long run relationship which has been found among the model’s variables. Result illustrate that the computed F-statistic is 6.5890. The relevant critical value bounds at one percent level upper bound critical value. Subsequently, the computed F-statistics is higher than the critical value of the upper bound, the null hypothesis of no long cointegration relationship among the variables can be simply rejected. Having established the presence of a long run association between gross domestic product per capita, labor market, FDI and inflation rate the model can be used to estimate long run and short run parameters.

Table 2: Bounds Test for Cointegration Analysis Based on Equation (4)

<table>
<thead>
<tr>
<th>k</th>
<th>10 percent level</th>
<th>5 percent level</th>
<th>1 percent level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2.696</td>
<td>3.898</td>
<td>4.630</td>
</tr>
</tbody>
</table>

Notes: The reported bounds critical values are taken from Narayan (2004), Table C[III]. k is the number of regressors.

The estimated of long-run and short run coefficient for economic growth with labor market and foreign direct investment is presented in Table 3. The result indicates that, labor market and FDI are influence economic growth in Malaysia. Nickell and Layard
(1999) and Schultz (2004) established that countries with more flexible labour markets were expected to generate higher productivity and faster growth.

For the short run estimation, the result of Error Correction Model (ECM). From the result it shows that the negative sign of ECM and this confirm that there has a long run relationship with variables. The coefficient of ECM for economic growth are negative sign and significant. These results are confirmed that there have long run relationships between the variables. The result in short run estimation indicates that labor market is influence the economic growth with 0.4908 and significant at five percent significant level and for FDI, the result indicates that effect is higher than labor market. For the control variable, inflation rate also give a positive effect to the economic growth.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Long run coefficient (1,0,1,0,0)</th>
<th>Short run coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor Market (LM)</td>
<td>0.7876 (0.5825) **</td>
<td>0.4908 (0.8932) **</td>
</tr>
<tr>
<td>Foreign Direct Investment (FDI)</td>
<td>0.5014 (0.6895) **</td>
<td>0.3201 (0.5890) **</td>
</tr>
<tr>
<td>Inflation rate (INF)</td>
<td>0.8912 (1.5843) **</td>
<td>0.6932 (3.8932) ***</td>
</tr>
</tbody>
</table>

Table 3: Long-Run and Short-Run Coefficient Based on The ARDL Model

Long run and Short-run results were presented using Microfit, 4.0.
Note: *** indicate significant at 1 percent, ** 5 percent and * 10 percent significance level.

To test the ARDL model, we applied a series of diagnostic tests and the result report in Table 4. It is clear that from the Table 4 that the model is clear from basic econometric problems for example serial correlation, normality and functional form. To test the stability of the model, cumulative sum of recursive residual test (CUSUM) and cumulative sum of square of recursive residuals test (CUSUMQ) proposed by Brown et al. (1975) were performed. CUSUM test is a residual test based on the cumulative sum of the residuals based on the first n-observation by updating recursively and then to be plotted against the break points. If the CUSUM plot stays within the 5 percent significant level (shows by two straight lines as a critical value lines), the estimated coefficient is stable. Similar measure also applies on CUSUMQ test which based on the square of the recursive residuals. The graphical presentation of health care expenditure for CUSUM and CUSUMQ describe on Figure 2 until figure 5 confirm that coefficient over the sample period stays within the critical value lines, and then it can be concluded that the coefficient is stable.
### Table 4: Diagnostic Test

<table>
<thead>
<tr>
<th>Test</th>
<th>F-Statistic (p-value)</th>
</tr>
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<tbody>
<tr>
<td>A. Serial Correlation</td>
<td>2.6976 [0.105]</td>
</tr>
<tr>
<td>B. Functional Form</td>
<td>0.0225 [0.891]</td>
</tr>
<tr>
<td>C. Normality</td>
<td>1.1047 [0.554]</td>
</tr>
</tbody>
</table>

Note:
A: Lagrange multiplier test of residual serial correlation
B: Ramsey’s RESET test using the square of the fitted values
C: Based on a test of skewness and kurtosis of residuals
Source: computation using Microfit 4.0

![Figure 2: Cumulative Sum of Recursive Residuals](image)

![Figure 3: Cumulative Sum of Squares of Recursive Residuals](image)
Conclusion

This study takes a step further by examining the role of labour market and FDI on economic growth. The estimation was employed to data collected from 1970 to 2017 for Malaysia. The main finding indicates that the FDI-growth link is influenced the level of labour market in the Malaysia. Specifically, it shows that the impact of FDI on output growth is positive and significant only after host countries has achieved a certain level of flexibility labour market which allows new knowledge to be transferred to local firms via labour mobility. This finding is robust to different indicators of labour market flexibility ((i.e. labour market regulation, hiring and firing and minimum wage).

The issue highlights the important role of labour market and FDI to promote country growth rate in Malaysia. Therefore, the main policy implication indicates role of labour market flexibility should emphasize as one of main factor to attract foreign investment and as an additional factor that contributes to growth. The results thus support the initiatives aiming to encourage more FDI inflows, because FDI is a major source for economic development. Among the factors that provided the environments conducive for inflows of FDI is the labour market standard and regulation.

The limitations in this study that can be addressed in future research. For the first issue, this study focuses on the role of labour market flexibility as an absorptive capacity in the FDI-growth link, further analysis of labour market flexibility may examine on FDI-productivity growth link or trade-growth link or trade-productivity link. Although there is evidence regarding the linkage of labour market flexibility and FDI-growth link, the contribution of this study is still sketchy. Therefore further research is essential in order to provide more accurate and detailed explanation of this issue. This study has therefore proposed for further research to emphasize this issue from macroeconomic approach to microeconomic approach where further estimation with econometric analysis are complemented to study on individual countries that may focus on the specific sectors like manufacturing; agriculture; construction; commerce/trade; transport and finance.

References


