**A Revisit of Trade Openness and Unemployment Rate: Malaysian Evidence**

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**Abstract**

Employment is determined by a combination of labour demand and labour supply. External trade, on the other hand, affects lab or demand through the demand for products and services, thereby affecting domestic employment and unemployment in Malaysia. This paper aims to1) examine the relationship between trade openness and unemployment rate; 2) to understand the effect of fair wage on unemployment rate; 3) examine the effect of labour force participation rate on unemployment rate. This paper will utilize the secondary data such as unemployment rate, fair wage and labour participation rate from 2012 to 2021 from the World Bank and Malaysia statistical database. This paper used multi regression analysis. represent Malaysia *t* year of unemployment rate. The trade openness (export + import/GDP) denotes by t. The fair wage is denoted by t after the wage divide by GDP. The labour force participation rate is measured by labour force at time t for Malaysia. represent residual. This paper found that there is a significant correlation between trade openness and unemployment. In Malaysia, open trade is associated with a decrease in unemployment rates. An analysis of economic indicators such as fair wages and labour force participation found no significant effect on unemployment rates. This study suggests that Malaysia needs to improve its labour market conditions, including making labour market regulations more flexible and expanding labour freedom from existing employment conditions. The future study should consider compare the effect of trade openness, fair wage, labour force participation rate effect on Malaysia unemployment rate with other countries.

**Keywords:** Unemployment rate, trade openness, fair wage, labour force participation rate, Malaysia

1. **Introduction**

Trade economists have tended to abstract away from unemployment despite being one of the biggest economic problems. Trade models generally have full employment, fully flexible wages, and no risk of unemployment. The implication is that these economists believe trade is not a significant determinant of unemployment trade is regarded as one of the main causes of mass unemployment since destroying jobs is one of its primary effects. There is a great deal of this reporting in the various forms of media, which the people widely adopt yet completely ignore that international trade is creating new jobs (Davidson & Matusz, 2004). This study aims to examine the effects of trade on unemployment not only theoretically but also empirically. Trade is largely advantageous because economic gains are accrued by countries that trade with each other. The economics of scale causes international trade to concentrate production at one location. Thus, international trade is the route to achieving efficiency gains through the specialization of international activities (Krugman, 1980). Throughout economic history, gains from trade have been gained through many different channels. A more integrated economy with increased exposure to foreign trade affects the labour market. There is a perception that trade destroys traditional jobs, causing unemployment to rise and sociopathic conditions to emerge. In empirical studies, trade openness affects the equilibrium unemployment rate, but the signs of the effects are different, so the conclusions are unclear. Bernard et al. (2007) asserts that, despite the benefits of open markets, in the short run, job turnover may occur as shrinking industries are reallocated to expanding ones. Free trade has raised frictional unemployment at an aggregate level in the short run, but its impact on wage equilibrium is less clear over the long run (Trefler, 2004). Different theories have been proposed to explain international trade in this area.

**Figure 1. Malaysia Balance of Payment 2011-2021 (World Bank, 2022)**

Figure 1 show the Malaysia Balance of Payment from 2011 to 2021. The figure show that Malaysia BOP has been declined from the last ten years from approximately 32 billion USD by 2011 to the lowest of approximately 7 billion USD in five years’ time by 2016. In 2021, Malaysia BOP rise to 14 billion. The decline of BOP indicates that Malaysia country are import more goods than export and Malaysia are suffering from general reserve deficit. The trade between Malaysia and China increased by 8.1% in 2019, making it Malaysia's largest trading partner for the 10th consecutive year (Rosli, 2019). The Ministry of International Trade and Industries (MITI), a government agency, estimates that Malaysian exports comprised approximately 16% of the country's exports in 2019. A total of RM138.88 billion was exported to China, mainly because of the increased exports of chemicals, chemical products, and electrical components. Approximately one-fourth of Malaysia's total trade was with Asean in 2018 (about 500 billion MYR) (Rosli, 2019). Table 1 show that China remains Malaysia biggest trading partner followed by Singapore, US and Hong Kong. The Asian country is the major trading partner for Malaysia.

**Table 1: Top Ten Export Countries in 2019 (Global Edge, 2019)**

|  |  |
| --- | --- |
| **Top 10 Export Countries** | **Export USD $** |
| China | 33,690,411,939 |
| Singapore | 33,035,653,791 |
| United States | 23,149,658,257 |
| Hong Kong | 16,063,269,155 |
| Japan | 15,755,421,828 |
| Thailand | 13,479,611,675 |
| India | 9,063,700,973 |
| Vietnam | 8,382,722,945 |
| South Korea | 8,147,912,723 |
| Indonesia | 7,441,921,506 |

Analysing the effect of international trade on the unemployment rate mainly relies on comparative advantage and product differentiation models (Felbermayr, 2011). In the case of Davidson et al. (1999), comparative advantage models would not include frictional unemployment. These researchers found a correlation between trade openness and unemployment rate, but the correlation magnitude depended on the countries' capital and labour positions. Dutt et al. (2009) found clear and strong evidence supporting the proposition that trade openness has a negative correlation with unemployment. Another study by Helpman and Itskhoki (2010) concluded that foreign trade could promote the employment rate. In other words, the literature on trade openness and unemployment is inconclusive—trade openness results in varying effects on unemployment across individuals, regions, and income groups. Further research is needed to investigate the relationship between unemployment rates and the degree of trade opening. Malaysia, for example, is one of the developing countries where there is little research focused on trade openness and unemployment. Existing studies focus on the trade openness includes trade export and import effect on unemployment rate, but the fair wage and labour force participation has a considered effect on unemployment. Hence the question of what are the factors that will affect unemployment rate is crucial for economist, researcher, and policy maker. In previous studies on unemployment rate the problem have been rated to the migration, cultural factors, early retirement, education, economy cycle. However, there are little research on trade openness, labour force participation rate and fair wage effect on Malaysia unemployment rate. This research tends to fill the gap considering the literature below. This study focuses on developing countries like Malaysia and how the external trade affects its unemployment rate. The unemployment rate is the dependent variable, the exploratory variable such as trade openness, fair wage and labour force participation rate. The data gathered are from Malaysia government statistical data and the period of data utilized are from 2005 to 2015 subsequently analysed via multiple regression approach.

With the advent of the era of globalization, Malaysia's foreign trade is also gradually increasing. Foreign trade has had many impacts on Malaysia's domestic economy, including labour and employment. In today's growing foreign trade, it is of great significance to study how Malaysia's trade openness, labour force participation rate and fair wage affects the unemployment rate. By using this study, the government will be able to gain valuable insight into the effect that international trade has on unemployment rates and devise a policy that guides the structure of the economy. This study also help business to understand how the foreign trade affect their business operation and reduce business cost. The findings are important for the Malaysia economist and other researchers to obtain the empirical evidence on trade openness, labour force participation rate and fair wage affect Malaysia unemployment rate. The manager or business leader also could utilize the findings and recommendations to draw out a proper business planning to full use of the worker that are available.

The remainder sections are segregated as follows: section 2 discusses on literature review while section 3 enlighten on methodology. Section 4 elaborates on discussion of findings and finally section 5 is on conclusion and policy recommendations.

1. **Literature review**

**2.1 Trade Openness and Unemployment Rate**

Several theoretical models have been proposed to explain how trade can affect aggregate unemployment. Researchers were unable to agree on the effects of boosted trade on unemployment. Several empirical studies have shown that trade reduces unemployment by increasing the marginal product of labour across an economy. Dutt et al. (2009) found that unemployment and trade openness were negatively correlated across developing countries from 1985 to 2004. Cross-sectional and panel analyses show a negative correlation between unemployment and trade openness. They reasoned that trade openness reduces unemployment by creating more jobs and job searches. The same points are made by Felbermayr et al. (2011), who analyse the search-unemployment model and argue that trade liberalization may reduce unemployment if it increases aggregate productivity. Most likely, this happens because labour is reallocated into more productive firms as the least productive ones are squeezed out. The choice of available intermediates increases the division of labour due to trade (Matusz,1996). The economy's productivity across the board has improved through this process, resulting in a reduced unemployment rate. A study conducted by Feldermayr et al. (2011) uses panel data regressions to evaluate trade patterns in 20 OECD countries from 1983 to 2003 and cross-section regressions to evaluate trade patterns in 62 countries. The study's authors find that trade openness reduces the incidence of structural unemployment when endogeneity and business cycle effects are considered, as well as an array of institutional and geographic factors. The researchers state that the decline in unemployment is primarily due to the decline in wow. OECD countries reduced aggregate unemployment by an average of 1% from 1983-2003 by increasing total trade openness by approximately 10%.

According to these researchers, an increase in trade openness shown empirical evidence in reducing unemployment. Felbermayr et al. (2011) extend their analysis of a significant sample panel regression to show that 10% increase in trade openness can reduce unemployment by approximately 1%. Researchers have found that by using a more reliable Sys-GMM model, they can reduce equilibrium unemployment of 0.55 % and a reduction in unemployment of 0.8 percentage points over time following an increase in trade openness of 10%. Cahuc and Zylberberg (2014) emphasize that when labour markets differ among trading partners, the extent to which trade affects unemployment may be unclear. Labour market frictions and differences between countries can hinder rapid employment adjustment. The North American Free Trade Agreement (NAFTA) has initiated a trade policy change expected to affect labour market churn. A study by Kim and Sun (2009) determined that the introduction of NAFTA greatly affected the labour market using the Ordinary Least Square regression method: tariffs and non-tariff barriers are used as proxy measures of trade openness. Tariffs and non-trade barriers may increase churning in some industries, while on the other hand, they may reduce churning in other industries. According to the difference-in-differences methodology analysis, the authors conclude that there is no evidence of a more fluid labour market due to increased churn.

**2.2 Fair Wage and Unemployment Rate**

The minimum wage and the economy have been extensively studied. In general, opinions on its effects tend to either see it as a necessary step to halt labour exploitation and reduce income inequality or as creating an oversupply of labour which in turn creates unemployment. Most of the studies were conducted specifically for the labour markets of advanced economies. Among this, Australia and New Zealand were the first countries to institute minimum wage policies. Despite heterogeneous labour markets and the difficulty of concluding such policies' positive and negative effects, research on the minimum wage has advanced significantly in the past few years for developing countries.

The research led by Brown et al. (1982) found that teen workers tended to face problematic health effects, whereas young adult workers experienced similar yet much less harmful consequences. Deere et al. (1995) found that employment for all teenagers decreased by seven per cent after the increase in the minimum wage in 1990-1991. Burkhauser et al. (2000) suggests that employment declines by a few per cent per ten per cent increase in the minimum wage. As the Joint Economic Committee of the United States concluded in 1995, following a survey of all empirical studies on minimum wages, a rise in the minimum wage reduced teenage employment. Neumark and Wascher (2013) also reached the same conclusions, but they did so less significantly concern young workers. Most research on the minimum wage and unemployment rate is done in developed countries. This study aims to fill the void by examining the impact of minimum wage rates on Malaysia's unemployment rate.

**2.3 Labour Force Participation Rate and Unemployment Rate**

The prospective informational value of the unemployment rate can be considerably affected by discouraged workers withdrawing from the labour force due to market forces (Gustavsson & Osterholm, 2006). A key concern in labour and development economics is the relationship between unemployment and participation in the labour force. An underutilized labour force can negatively impact a nation's development and growth potential if there are many unemployed. Hidden unemployment results in lost output and income for the economy, as it does with overall unemployment (Acoss, 2003). Wooden (1996) argues that sustained growth may not result in similar declines in unemployment rates (because of underemployment and hidden unemployed persons). The hidden unemployment problem is significant for the United States and Australia (Mitchell, 2000). It is estimated by Mitchell (2000) that Australia and the United States have a net discouraged worker effect of 3% and 5%, respectively. Additionally, he finds that both countries' hidden unemployment levels and the trend in labour-force participation rates are similar. Agbola (2005) indicate that hidden unemployment in developing countries contributes to wasting labour resources and is the cause of facilitate countries output gaps. The unemployment and labour-force participation rates generally exhibit a long-run positive association in developed countries like Japan and Sweden (Osterholm, 2020; Kakinaka & Miyamoto, 2012).

The correlation between unemployment, labour force participation, and macroeconomic theories has attracted a growing amount of empirical research in recent years. Osterholm (2010) adopts the Johansen approach to cointegration analysis to analyse this Swedish linkage as a methodology for the empirical analysis of this phenomenon. Using both aggregate and gender-specific data, he reaches the conclusion that discouraged workers have a negative impact on the economy. According to Emerson (2011), both the United States and Japan use the same methodological frameworks, but the United States finds an effect due to discouraged workers. In contrast, Kakinaka and Miyamoto (2012) have found that young males are discouraged from working, but middle-aged and elderly males are encouraged to work more. Based on their findings, the labour force participation rate affects unemployment rates. Using panel cointegration models composed of numerous OECD and European countries, Filatriau and Reynes (2012) and Ozerkek (2013) provide evidence for the interaction between labour force participation and unemployment in OECD countries. According to the analysis results based on data from 1990-2010, higher levels of participation in the labour market result in lower levels of unemployment. However, most of the literature conducted in OECD countries does not contain any empirical studies that study the relationship between unemployment in Malaysia. This study aims to fill that gap by puzzling the unemployment rate and participation in the labour force.

1. **Methodology**

Research studies of all types rely on collecting data. The results of a study can be affected if the data collection is incorrect, and the study results can be impacted in this way. In designing a study, it is important to determine what type of data will be used in the study. The hypotheses and research questions were addressed using secondary data. According to Hair et al. (2006), secondary data refers to information collected for a different purpose than the data. Utilizing secondary data offers the advantages of cost and time savings that secondary data provides. A researcher can find useful secondary data information online or on a relevant website associated with relevant articles or journals relevant to their research. Additionally, secondary data can be used to identify problems, better identify problems, define problems, develop a research strategy, and identify the key variable in a study (Malhatra et al., 2002). Hence, secondary data must not be ignored by researchers. This paper will utilize the secondary data such as unemployment rate, fair wage and labour participation rate from 2012 to 2021 monthly basis from the World Bank and Malaysia statistical database. Multiple linear regression involves using more than one predictor variable in addition to simple linear regression (Keith & Marill, 2004). Consider the case where the investigator suspects that more than one predictor variable may affect the outcome of interest. A simple linear regression approach might be inappropriate in that case. Multiple regression models can be used to account for multiple predictor variables at the same time. For this study, factors such as Malaysian trade openness, Malaysian fair wages, and Malaysian labour force participation that may influence the unemployment rate will be evaluated to avoid these problems in the linear equation model. Below is the multiple linear model equation:

Yi: Unemployment rate in Malaysia.

X1: Malaysia's trade openness

X2: Malaysia fair wage (used log function)

X3: Labour force participation rate (used log function)

Equation Model: Multi Regression Model

represent Malaysia *t* year of unemployment rate. The trade openness (export + import/GDP) denotes by t. The fair wage is denoted by t after the wage divide by GDP. The labour force participation rate is measured by labour force at time t for Malaysia. represent residual.This study covers the ten years data from 2012-2021. Openness to trade is considered a valuable indicator of the degree to which a country is open to international trade since it indicates how exposed it is to international trade (Alcala & Ciccone, 2004). A measurement of trade openness has traditionally relied on the total amount of exports, the total amount of imports or the exports as a percentage of GDP. The amount of goods and services exported and imported, and the sum of these amounts is another indicator of trade openness. A study by the International Monetary Fund suggests that trade openness can be calculated by taking the relationship between imports, exports, and GDP (MYR), per nominal GDP (MYR). As a measure of trade openness, the World Development Bank uses trade (proportion of GDP) as the number of exports and imports of goods and services relative to gross domestic product for each country. Alcala & Ciccone (2004) estimate nominal price openness to having been distorted by the Balassa-Samuelson effect. The authors propose that real openness be used in this context, which removes from the nominal measure of trade openness differences in relative prices of non-traded services across countries. A real trade openness assessment in this study is determined by dividing the total exports and total imports by the Malaysian GDP (MYR). Real trade openness data are obtained from World Bank and Malaysia government statistic database. The unemployment rate might be affected by different institutional variables. To this, the researcher has included other variables such as fair wage and labour force participation in our regression model.

1. **Discussion of findings**

**4.1 Descriptive analysis**

The original data must be analysed descriptively before modelling and analysing each variable. Table 2 presents the results for the period 2012-2021. On average, the unemployment rate within the sample research range is 3.476%, the opening of trade is 1.220, the wage is 1000, and the labour force participation is 24.707%. Salary fluctuated between 2012 and 2021 with a standard deviation of 115.470, which can be observed from its maximum (1200) and minimum (900). In addition, labour force participation fluctuates relatively much compared with unemployment rate and trade openness, with a standard deviation of 1.256. In the research sample, the trade openness variable has the most stable performa``nce, with only a standard deviation of 0.139, followed by the unemployment rate, with a standard deviation of 0.592. Using the skewness value, the time series distribution of trade openness shows left-skewness characteristics (skewness is less than 0). In contrast, the other variables show right-skewness characteristics (skewness is greater than 0). In the original sequence modelling analysis, we will use two logarithmic variables: salary, labour force participation, unemployment, and trade openness.

**Table 2: Descriptive Analysis**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean | Max | Min | Std. | Skew | Kurt | Jarque-Bera |
| UNEM | 3.476 | 4.610 | 2.880 | 0.592 | 1.222 | 2.945 | 2.491 |
| OPEN | 1.220 | 1.348 | 0.924 | 0.139 | -1.152 | 3.113 | 2.216 |
| WAGE | 1000.000 | 1200.000 | 900.000 | 115.470 | 0.913 | 2.500 | 1.493 |
| LAB | 42.707 | 44.970 | 41.470 | 1.259 | 0.985 | 2.542 | 1.703 |

## **4.2 Correlation test**

According to Table 3, each variable has a correlation coefficient matrix. Based on the results in the first column, we can conclude that the unemployment rate, trade openness, and labour force participation are statistically significant. Specifically, there was a significant negative correlation between UNEM and OPEN at a 1% confidence level (p<0.01) and a significant positive correlation between UNEM and LNLAB at a 1% confidence level (p<0.01). OPEN and LNLAB show that correlation coefficient is greater than 0.8, suggesting that one or both variables having higher degree of association.

**Table 3: Correlation Matrix**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | UNEM | OPEN | LNWAGE | LNLAB |
| UNEM | 1.000 |  |  |  |
| OPEN | -0.913\*\*\* | 1.000 |  |  |
| LNWAGE | 0.548 | -0.490 | 1.000 |  |
| LNLAB | 0.963\*\*\* | -0.907\*\*\* | 0.624\* | 1.000 |
| *Note: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1* | | | | |

**4.5 Analysis on the regression**

Table 6 shows the results of multiple regression. Firstly, the goodness of fit R-squared of the overall equation is 0.921, indicating that the combination of all explanatory variables had a good effect on explaining 92.1% of the explained variables. From the statistical value of F, its value is 19.421, and the statistical value of p is 0.003, less than 0.01, indicating that the overall equation conforms to the linear equation at the 1% confidence level. From the perspective of each variable, it is apparent that the statistical value p of fair wage t is 0.123, which is bigger than 0.1, meaning that it is not significant at a 10% confidence level. Thus, it is rejected the null hypothesis of hypothesis 2. The Malaysia fair wage cannot reduce unemployment. The research result is in line with the research by Carpio and Pabon (2014) as there is a lack of evidence on the connection between the minimum wage and employment. There are times when layoffs result from the measure, but in other cases, the impact is minimal due to low law compliance and because large segments of the population do not work under the labour laws. Carpio and Pabon (2014) note that moderate adjustments in the minimum wage level can keep the adverse effects to a minimum and lead to positive economic effects. Carpio and Pabon (2014) argue that an explicit formula for setting minimum wages is necessary to avoid excessive rigidity and facilitate understanding and application by all stakeholders. According to these researchers, a transparent process (with pre-determined formulas) would not negatively affect employment since policies could better plan for future labour costs as policymakers have no discretion to set minimum wages.

It is apparent that the statistical value p of labour force participation rate t is 0.185 which is bigger than 0.1, meaning that it is not significant at a 10% confidence level. Thus, it is rejected the null hypothesis of hypothesis 3 and confirmed that Malaysia labour force participation rate has little effect on reducing unemployment rate. Osterholm (2010) argued that there are significant implications for policy and empirical modelling concerning the relationship between unemployment and labour force participation. According to Osterholm (2010), the long-run relationship between Swedish unemployment and labour force participation has been examined using cointegration techniques. Despite this, the unemployment-invariance hypothesis suggests that the unemployment rate will not change over the long run regardless of the labour force (Osterholm, 2010; Thaker et al., 2022

There is a significant correlation between trade openness and unemployment, with the coefficient of this variable being -1.342. For every one unit increase in trade openness, the unemployment rate falls by 1.342 units. Nevertheless, the wage and labour force participation coefficients are insignificant (p>0.1), and the null hypothesis that the coefficient is 0 cannot be rejected for hypothesis 1. In other words, the null hypothesis that trade openness can reduce unemployment rate is confirmed. The result is in line with the study conducted by Hasan et al. (2012), that analyse the labour force survey data from India, and found that trade liberalization (when combined with trade protection data) had a positive relationship with unemployment at the state and industry levels. Over time and across states, an analysis of state-level unemployment has found no relationship between overall unemployment and average protection. Labour market flexibility and growth in export industries facilitated the decrease in urban unemployment. In the same vein, Kim (2011) asserted that in 20 OECD countries with flexible labour markets, trade openness could lead to a reduction in unemployment by fostering a more competitive market. A similar conclusion has also been reached by Hasan et al. (2012) in the case of India. There should also be increased labour freedom and more labour market flexibility as part of trade openness.

**Table 6: Regression Results**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| OPEN | -1.342 | 0.610 | -2.199 | 0.079 |
| DLNWAGE | 6.790 | 3.664 | 1.853 | 0.123 |
| DLNLAB | -9.490 | 6.183 | -1.535 | 0.185 |
| C | 1.726 | 0.785 | 2.200 | 0.079 |
| R-squared | 0.921 | Mean dependent var | | 0.168 |
| Adjusted R-squared | 0.874 | S.D. dependent var | | 0.441 |
| S.E. of regression | 0.157 | Akaike info criterion | | -0.566 |
| Sum squared residual | 0.123 | Schwarz criterion | | -0.478 |
| Log likelihood | 6.545 | Hannan-Quinn criterion | | -0.755 |
| F-statistic | 19.421 | Durbin-Watson stat | | 2.900 |
| Prob(F-statistic) | 0.003 |  |  |  |

1. **Conclusion and policy recommendations**

This study examined the effect of trade openness, fair wage, labour force participation rate effect on Malaysia unemployment rate using data from the period 2012-2021. This study advances the existing literature by analysing the effects of trade on different aspects of unemployment in least-developed countries (Malaysia)by controlling other economic and labour market indicators in this study. In Malaysia, open trade is associated with a decrease in unemployment rates. An analysis of economic indicators such as fair wages and labour force participation found no significant effect on unemployment rates. Still, a study of trade openness found that it had a considerable impact. In addition, strict labour market regulations tend to increase the unemployment rate. Accordingly, this study suggests that Malaysia needs to improve its labour market conditions, including making labour market regulations more flexible and expanding labour freedom from existing employment conditions.

Through proper capital infusion into the business environment, domestic and foreign investors are likely to be encouraged, thereby maximising the use of resources to their full potential. Providing more funds for industrial establishments would be possible by reducing the remuneration of political executives. Moreover, Malaysia's economy should be free from high import duties and multiple forms of taxation. Malaysia's low tax environment will provide more opportunities for foreign investors to invest in the country, as well as provide employment opportunities to the local population. According to Odusola (2006), municipalities and states levy and tax various taxes and levies on businesses in addition to the federal income tax. Through economies of scale and scope and greater competition, trade integration allows a more efficient allocation of resources. Malaysia should reduce the levy charged on foreign company at the same time induce domestic firm protection policy to protect the local firm. Since trade openness can reduce unemployment rate, the Malaysia also can use subsidy policy to encourage foreign firm to establish factory in Malaysia and give subsidy by hiring local worker. This will attract foreign investment at the same time giving more working opportunities to the local worker. The openness of trade facilitates the diffusion of knowledge and the transfer of technology and work opportunities, which affect costs, productivity patterns, and the development of new technology. The future study should consider compare the effect of trade openness, fair wage, labour force participation rate effect on Malaysia unemployment rate with other countries.

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