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# New Zealand Agricultural & Resource Economics Society (Inc.)

## **The Employment Effects of Regional Integration: A Case Study of the Association of Southeast Asian Nations (ASEAN)**

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*Invited paper presented at the New Zealand Agricultural and Resource Economics  
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## The Employment Effects of Regional Integration: A Case Study of the Association of Southeast Asian Nations (ASEAN)

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The growth and output effects of ASEAN integration have been extensively explored in the literature. Relatively less attention has been paid to the equally important issue on how ASEAN integration has affected employment or unemployment in the member countries. This study aims to determine whether membership in ASEAN for selected members has had a positive (or negative) impact on employment among the ASEAN member-countries for which data are available. In theory, the expansion of the export industries resulting from the reduction or removal of barriers to trade result in increased employment or reduced unemployment in the member-countries. This study applied econometric methods and other approaches including the Synthetic Counterfactual Method.

The results show that integration has led to a reduction in unemployment in the majority of the ASEAN member-countries. The largest gain in terms of reduced unemployment goes to Thailand and the three new members of ASEAN (Lao PDR, Cambodia and Myanmar). The sole exception is Indonesia, where actual unemployment has been higher than the counterfactual since 1997. The Philippines and Singapore show mixed results, although towards the end of the period (2014) actual unemployment is much lower compared to the counterfactual.

The study also evaluates the impact of selected variables, which include, difference between actual unemployment and the counterfactual, export performance, degree of openness to trade, foreign direct investment, institutional and governance indicator. The results and analysis are potentially useful for addressing immigration and employment.

## **Introduction**

The growth and output effects of regional integration have been more or less extensively explored. Relatively less attention has been paid to the employment effects of integration. Using the synthetic control (or counterfactual) method and ASEAN as a case study, the paper aims to determine if membership in ASEAN (for members who joined after 1992) or AFTA (for the five original members) has had a positive or negative impact on unemployment among the eight member-countries for which data are available. The results show that integration has resulted in lower unemployment among majority of the ASEAN member-states. The clear exception is Indonesia, where actual unemployment has been higher than synthetic unemployment since 1997. The clearest gain goes to Thailand and the three new members of ASEAN (Lao PDR, Cambodia and Myanmar; no available data for Vietnam), where actual unemployment is unambiguously lower than synthetic unemployment. The Philippines and Singapore show mixed results, although towards the end of the period, actual unemployment is clearly much lower than synthetic unemployment. To explain why performance differs among the ASEAN member states, the difference between the actual and synthetic unemployment will be regressed on certain variables that have yet to be specified, but which will probably include export growth, trade orientation, foreign direct investment growth, and governance.

In an earlier study, Tabbada and Bano (2017), using a new methodology known as “synthetic control method”, explore the growth and output/income effects of the ASEAN Free Trade Agreement (AFTA), which took effect in 1992, in the case of the five original members of ASEAN (Indonesia, Malaysia, Philippines, Singapore, and Thailand) plus Brunei, which joined in 1984, and of the accession to ASEAN in the case of the countries which joined ASEAN in the 1990s (Vietnam Laos, Cambodia, and Myanmar). This paper extends the said paper by looking at the employment effects of ASEAN integration and the country-specific factors that explains why some member-countries perform better than others on employment/unemployment.

## **Regional Integration and Employment: The theory of the second best**

We start from the proposition that trade enhances or promotes welfare, and that free trade does it even more so. Economic integration through regional trade agreements (RTAs) or free trade agreements (FTAs) is a move towards free trade, at least between/among members of the RTA or FTA. Therefore regional integration is welfare-enhancing – that is, it promotes growth, income and employment in the member-countries.

According to Jacob Viner (Viner 1950), regional integration enhances welfare through trade creation. By shifting production from high-cost members to lower-cost members, trade makes available to consumers a greater quantity of goods and services at lower prices. But trade can also be welfare-reducing if, because of economic integration, there is trade diversion, which is a shift in production (and consumption) from a lower-cost non-member to a higher-cost member. Regional integration can thus have both trade creation and trade diversion effects; overall welfare is increased if the former is greater than the latter.

The employment effect stems or is derived from the growth-inducing effects of economic integration. Regional integration brings about increased trade and investment between/among the members as well as with countries outside the region which are drawn into or attracted by the larger market. Increased trade and investment in turn cause an expansion of the import/export and invested industries, shifting their demand curves for labour outward, resulting in increased employment or, alternatively, reduced unemployment.

The two concepts, employment and unemployment should be clearly distinguished. Employment rate is the **proportion of the total population** that is employed; it usually ranges between 50-70 per cent of the total population. Unemployment rate, on the other hand, is the **proportion of the labour force** that is looking for a job but (as of the period covered by the survey) is not successful in finding one. Labour force is the proportion of the population, usually between the ages 15-18 and 60-65 depending on the official rule or practice in the particular country. This paper uses data on unemployment rather than employment. But not all growth can result to an increase in employment or a decrease in unemployment. Growth may not increase employment if the production process which caused output to grow is labour-saving. Growth

caused by increased labour productivity, defined as output per employed person, may not also result in an increase in employment.

Regional integration may have both short-run and long-run effects on unemployment. The effect on employment may initially be negative (i.e. an increase in unemployment) when, as a result of the removal or reduction of trade barriers, some domestic industries are unable to withstand the competition from lower-priced goods from other countries within or outside the region. This is what opponents of free trade (and of regional integration), who are usually a vocal and politically-influential group, are afraid of. (Tariffs not only raise revenue; they also protect domestic producers, which may have higher costs than the competition.) In the long-run, however, unemployment is expected to decline or go down when, and as, a member-country finds its niche or comparative/competitive advantage under the liberalized trade regime.

## **Review of literature**

What is the empirical evidence on the relationship between regional integration and (un)employment?

A study on the effects of the accession of 10 new members to the EU in the 1990s found the effects to be very positive for the new members, most of them former socialist states with high unemployment rates. But the effect was only slightly positive for the EU-15 (the members before the post-1990 enlargement), which received many of the migrants from the former socialist countries. Overall, the effect on unemployment was not as strong as predicted and the reason for this is that many barriers to labour mobility still remain.

One of the most comprehensive studies on the effect of integration on ASEAN member-states is Petri et al. (cite title) Using computable general equilibrium (CGE), Petri et al in a study for the International Labour Office (ILO) and the Asian Development Bank (ADB) found ASEAN integration to have a positive effect on income of almost 6 per cent (and growth?) But the authors suggest that a more advantageous arrangement – one that would bring about even higher growth

and employment -- would be an ASEAN plus 3 (the three being China, Japan and South Korea) or ASEAN plus 6 (Plus 3 + Australia, New Zealand and India). ASEAN Plus 3 would expand the regional market to almost 2 billion people, many of whom have acquired substantial purchasing power due to recent rapid growth.

A study (author, title) on the employment effects of NAFTA (North America Free Trade Area) on the Canadian manufacturing industry found the effect to be negative in the immediate term but positive in the longer term. This finding is consistent with the theoretical formulations.

## **Methodology**

For this study, we use the synthetic control method (SCM) pioneered by Abadije (American Economic Review 2003, as cited in Coletti et al. 2012). SCM combines quantitative and qualitative analysis, and has been in use in comparative politics and economic development studies. Although SCM is relatively new, it has been applied to a wide range of issues. To cite a few of them: the effect of German reunification on the economy of West Germany, the effect of the anti-tobacco smoking law on California, the effect of NAFTA on unemployment in Canada, and the effect of terrorism on the Basque region in Spain. On regional integration in particular, Colletti et al (2012) used SCM to study the effect of EU integration on growth and output; they found the effect to be positive, the sole exception being Greece, where it was negative. Tabbada and Bano (2017) also used the method to assess the effect of ASEAN integration on members' output, income and growth, with the finding that it was generally positive.

The procedure involved in doing SCM is fairly simple and is analogous to the conduct of medical experiment, in which the therapeutic effect of, say, a newly-discovered drug is tested on patients (called the "treatment group"), or in agricultural research, in which the effect of the application of fertilizer on the growth of plants is tested. In both cases, there is on one hand a treatment group, which is the subject of the intervention, and on the other hand a control or "donor" group, whose characteristics are similar or close to those of the treatment group and which is not subject to the treatment or experiment. Sometime after the application of the fertilizer or the medicine, the difference in growth or size and health between the treated and the donor group is measured to find out what effect, if any, the application of the fertilizer or the medicine has had on the subject of treatment. The difference between the treated group and the control group is the effect of the intervention.



Applying the methodology to regional integration, the treatment group consists of the countries that have entered into an FTA or RTA, whereas the control or donor countries are those which have not entered into the same FTA or RTA as those of the treatment group, but which has characteristics similar to or closely resembling those of the treatment group. The test involves a comparison of the performance of the two groups along the output variable(s) after the “treatment” - in the case at hand, after (and as a result of) the subject countries’ accession to the FTA. If the performance of the subject country is better (worse) than that of the control group, the subject country is said to have gained (lost) from integration. The magnitude of the gain (or loss) is simply obtained by subtracting the actual from the counterfactual and is called the “treatment effect”. The specific steps involved in performing the synthetic control method are as follows:

**Step 1.** Select a number of countries (at least 2) whose features or characteristics are close to or similar to those of the subject country or country of interest. In the case at hand, the relevant characteristic is the unemployment rate, but other similarities can be considered, and the greater the similarities the better or closer the “fit”.

**Step 2.** Once the potential “donor” countries are identified, the subject country’s outcome variable, in this case its unemployment rate, is regressed individually and collectively with the same variable of the potential donor countries, using a simple formula

$$Y_{ti} = a_k + B_k Y_{si}$$

Where  $Y_{ti}$  and  $Y_{si}$  are the treated and untreated variables respectively

$a_k$  is the intercept, and

$(B_k)$  is a vector of coefficients

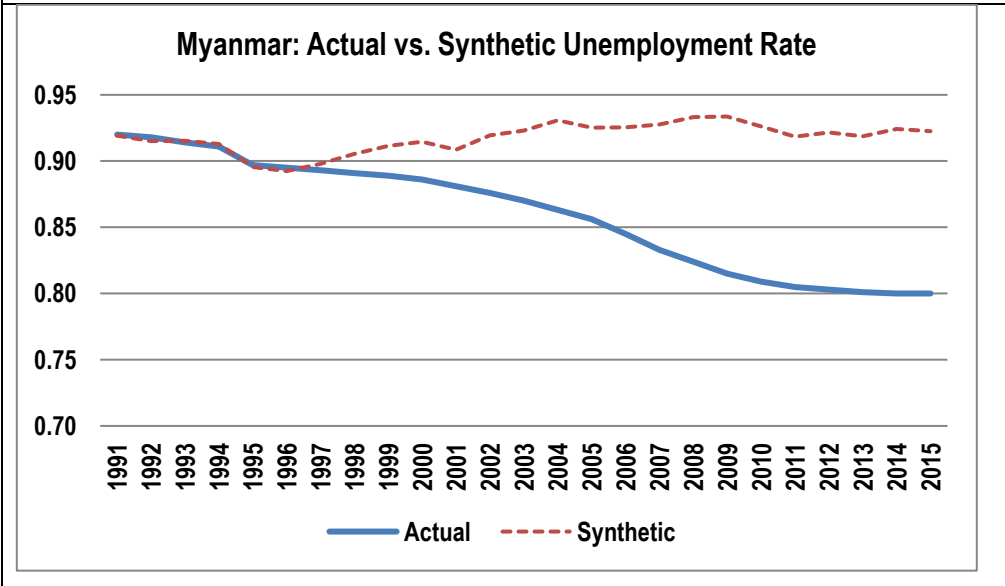
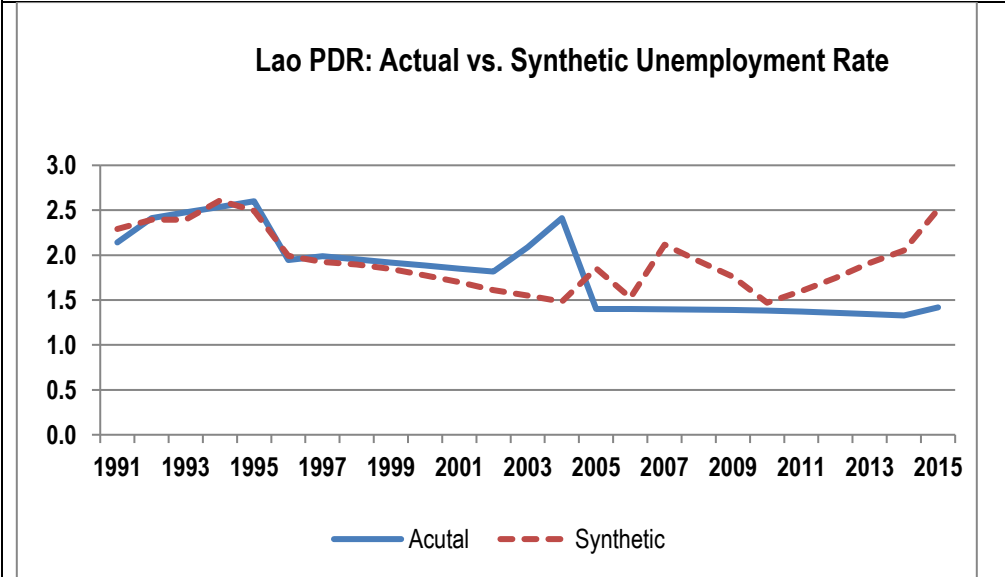
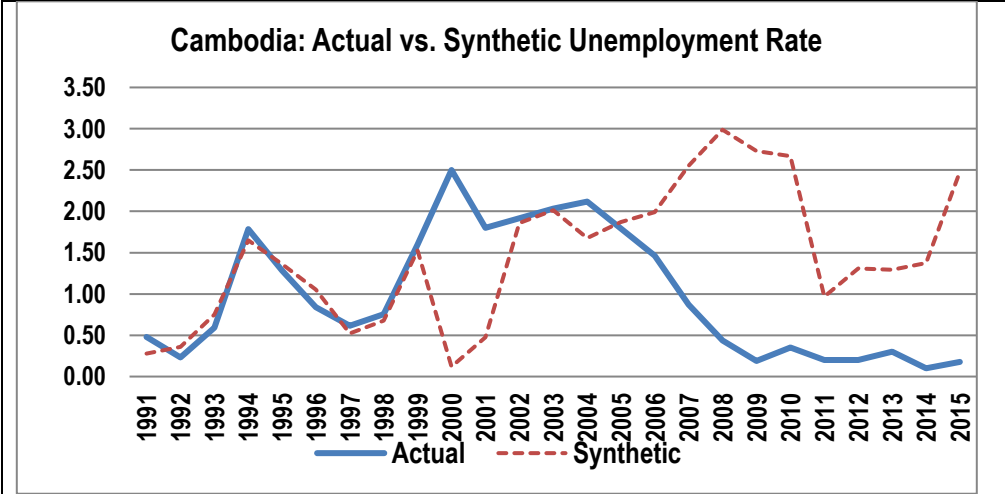
**Step 3.** Estimate a regression line for the synthetic for the synthetic country that fits as closely as possible the actual path of the subject or treated country before the intervention or “treatment”, in the case at hand before AFTA or joining ASEAN, as the case may be.

**Step 4.** Use the estimated regression line to project or trace the path of the synthetic country after the treatment, the treatment again being AFTA and membership in ASEAN. The path so traced is the counterfactual.

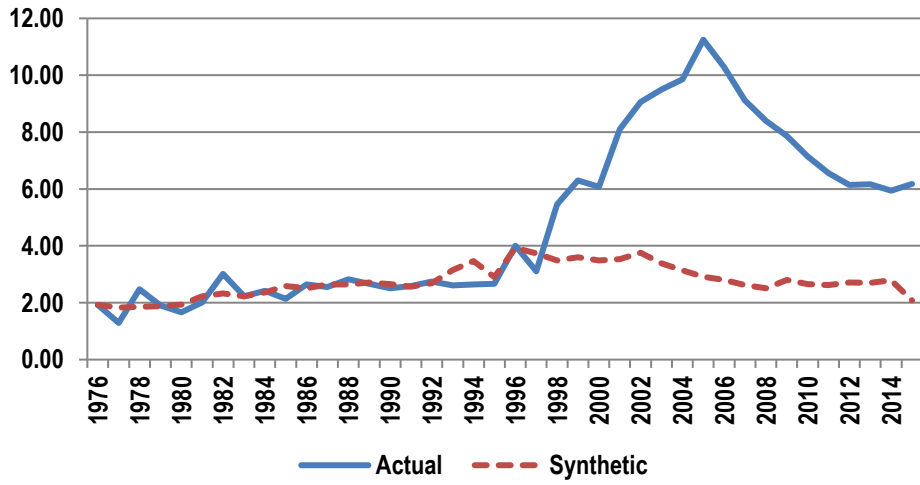
**Step 5.** Compare the synthetic and the actual values obtained. The difference between the two, called the “treatment effect”, represents either gain or loss to the subject country.

**Findings and Analysis:**

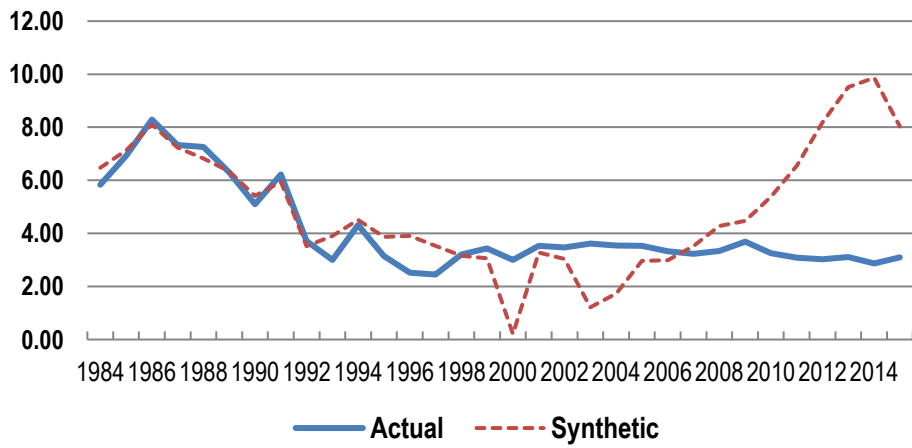
The results of the application of the SCM to the eight member-states of ASEAN for which unemployment data are available are presented in Figures 1-8 below:



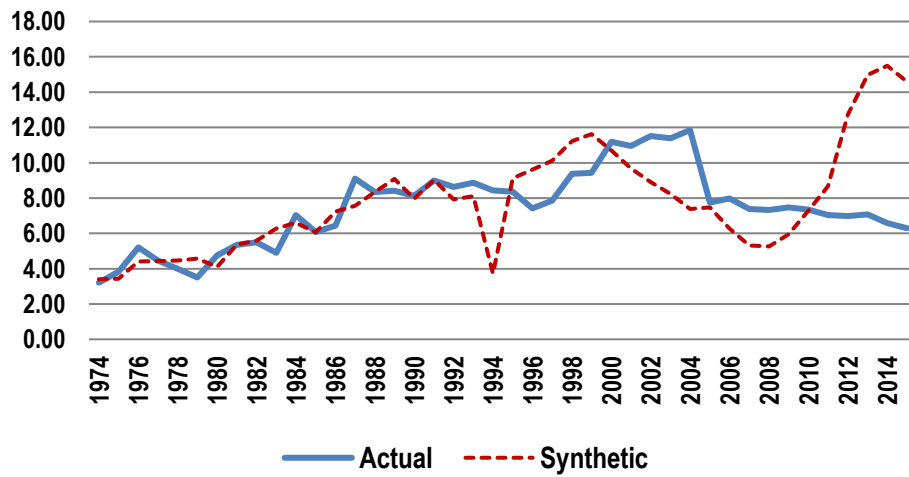
**Indonesia: Actual vs. Synthetic Unemployment Rate**



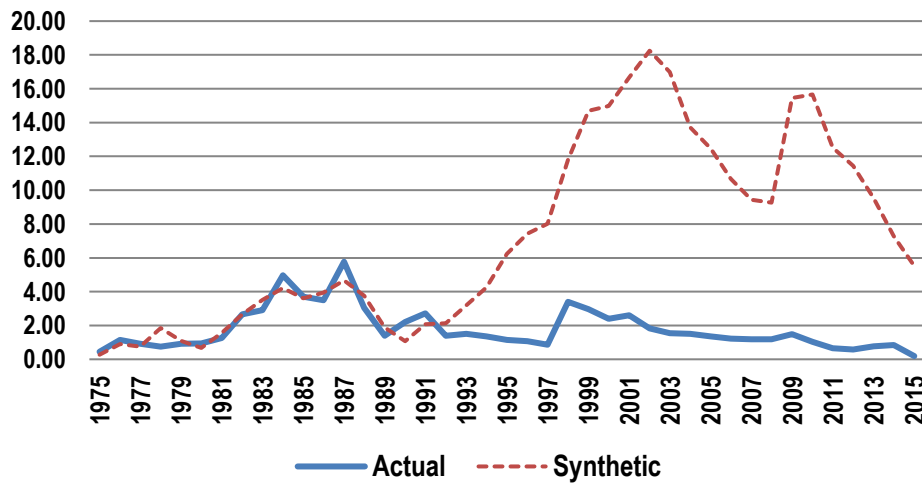
**Malaysia: Actual vs Synthetic Unemployment Rate**

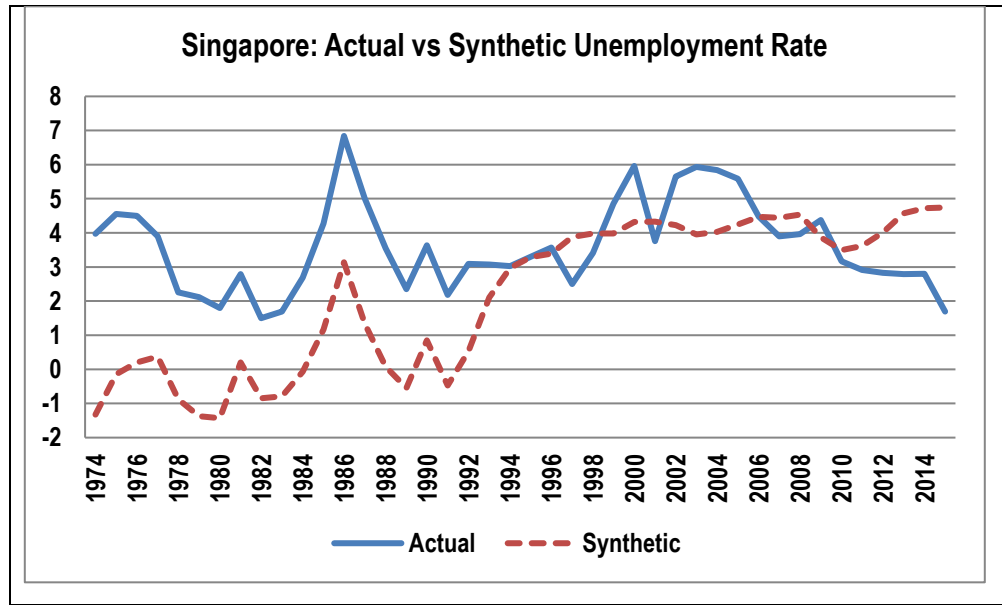


**Philippines: Actual vs. Synthetic Unemployment Rate**



**Thailand: Actual vs. Synthetic Unemployment Rate**





### **Cambodia.**

Actual is lower than synthetic unemployment – meaning, that Cambodia benefitted from integration in terms of lower actual unemployment – although, it should be noted that the immediate effect of integration was an increase in unemployment after the country became a member of ASEAN in 1999. From 2000, actual unemployment has been much lower than synthetic unemployment. Overall gain in terms of reduced unemployment is 0.74%

### **Lao PDR.**

For Laos, actual unemployment was also initially higher than synthetic unemployment, but from 2004 the actual has been consistently lower than the counterfactual. Thus, Laos also benefitted from integration in terms of reduced unemployment by 0.18 per cent.

### **Myanmar.**

From the time that Myanmar joined ASEAN in 1997, its actual unemployment rate has been consistently lower than its synthetic unemployment, meaning, that Myanmar has clearly and consistently benefitted from regional integration. The reduction in its unemployment rate is 0.08 per cent.

### **Indonesia.**

From the time of the Asian financial crisis in 1997-1998, Indonesia’s actual unemployment has been consistently above its synthetic unemployment. This is a clear case of a member-state not

benefitting from integration in terms of reduced unemployment. It may be recalled from another study (Tabbada and Bano in Co and Tabunda 2017) that Indonesia, along with Thailand, also did not gain from integration in terms of growth and higher GDP per capita. Its actual unemployment is higher than the counterfactual by 3.64 per cent.

### **Malaysia.**

Actual unemployment was lower than synthetic unemployment from 1992 (the start of AFTA) to 1997 (the beginning of the Asian crisis). From 1998-2006, however, actual was higher than synthetic unemployment, suggesting no gain from integration. But from 2006 to 2014, actual has been clearly lower than synthetic unemployment, suggesting gains from integration. Actual unemployment is lower than the counterfactual by 1.15 per cent.

### **Philippines.**

Among the ten ASEAN member-states, the Philippines historically has the highest unemployment rate. The situation has hardly changed, despite the fact that there are more than 10 million Filipinos (almost 10% of the total Philippine population) who have left the country in order to work abroad either temporarily or permanently. Actual and synthetic unemployment alternated positions (i.e. higher or lower) from 1992 to 2009, making it hard to tell whether the country benefitted or lost in terms of employment. From 2010, however, actual unemployment has been clearly lower than synthetic unemployment, indicating gain from integration. Overall actual unemployment is lower than the counterfactual by 0.72 per cent.

### **Singapore.**

Like the Philippines, Singapore alternated between higher actual compared to synthetic unemployment for a number of years since 1992, the start of AFTA. Initially, actual unemployment was higher than synthetic unemployment, indicating that there was an adjustment period for Singaporean industries. Since 2010, however, actual unemployment has consistently been lower than synthetic unemployment. The gain in terms of lower actual unemployment is 0.08 per cent.

### **Thailand.**

This is a very clear case of gain from integration in terms of lower unemployment. From 1992, actual unemployment has been lower than synthetic unemployment. This is in contrast with the finding in Tabbada and Bano (2017) that Thailand did not gain from integration in the form of higher GDP per capita, and this was due mainly to the 1998 Asian financial crisis, from which

Thailand took a long time to recover. In terms of reduced unemployment, however, Thailand gained 6.61 percent, the highest among the eight ASEAN member states.

Some of the results come as a surprise. Indonesia did not benefit from integration in terms of reduced unemployment. The newer members, with the exception of Vietnam (for which no data were available), all benefited, as did the Philippines, Thailand and Malaysia. Even if initially integration resulted in increased unemployment, in the long run the effect is positive, i.e. lower unemployment. This is consistent with the findings in other FTAs or RTAs, e.g., in Canada as a result of the North American Free Trade Area where the employment effect is initially negative but eventually becomes positive (Zhang, et. al. 2015). The effect may be initially negative because of the dis-employment effects of the loss or exit of the uncompetitive industries, but eventually positive when and after the member-country has made the necessary adjustments and found its comparative/competitive niche. The length and difficulty of adjustment varies from country to country depending on its readiness in terms of having the right policies and institutions.

### **Why unemployment rates differ among ASEAN member-states**

The foregoing results may be better understood if the specific mechanisms through which regional integration affects unemployment are analysed. What indeed are these mechanisms or channels?

There are three channels through which unemployment may decline as a result of integration: increased trade, increased foreign direct investment (FDI) inflow, and increased labour mobility. Increased trade and investment causes a shift in the demand for labour in the export as well as import industries and the industries in receipt of FDI, thus increasing employment or reducing unemployment. Increased labour mobility as a result of the removal of restrictions, such as through the easing of visa requirements and standardization of qualification requirements, should enhance the mobility of labour and thus reduce unemployment in the labour-sending member-countries. The latter, admittedly, is the most difficult to liberalize in any effort at integration.

It is also important to note that among the ASEAN member-countries, there are labour-sending countries and labour-receiving countries. Labour-receiving or destination countries are usually the more developed or richer members while labour-sending or origin countries are the poorer, less developed members. In ASEAN the labour-sending countries are the Philippines, Indonesia and CLMV, while the receiving countries are Singapore, Brunei Darussalam, Malaysia



and Thailand. With integration, unemployment should go down in the sending countries, as some of their excess labour cross national borders in order to work or seek employment in the richer member-countries, whereas in the receiving countries, unemployment may remain unchanged or may even slightly go up initially as a result of the influx of migrants seeking employment.

In order to explain the difference in employment (or unemployment) performance, regression analysis is performed, with the unemployment rate as the dependent variable and GDP growth, trade to GDP ratio, foreign direct investment as per cent of GDP, and dummy variables for sending and receiving countries (0 for sending and 1 for receiving countries) as the independent variables. It is hypothesized that the unemployment rate is negatively related to GDP growth (the higher the GDP growth the lower the unemployment rate), openness (the higher the trade-to-GDP ratio, the lower the unemployment rate), and the amount of foreign direct investment (the greater the investment or the higher the investment to GDP ratio, the lower the unemployment rate). Whether one is a sending country or a receiving country also has something to do with the sign: reduction in unemployment for the sending country and increase in unemployment for the receiving country. However, if the receiving country is experiencing acute shortage of labour, immigration may not increase unemployment because, in the first place, the new entrants from the outside just fill in the excess demand.

**Summary/Conclusion:**

The overall conclusion of the paper is that as far as reducing unemployment is concerned, being a member of an RTA or FTA is advantageous to a country. But the extent to which a member-country benefits in terms of reduced unemployment depends on factors that are largely domestic in nature.

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