Impact of Economic Globalization on the Human Trafficking in the Greater Mekong Sub-region Countries

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Abstract—Integration of panel unit root tests using Levin, Lin & Chu (2002) and pooled OLS regression were introduced to test the hypothesized relationships covering data for the eight-year period 1996-2003. The findings indicated that the value of adjusted R² for human trafficking data was 0.946351. The results indicated that 94.6351 percent of the variation in human trafficking and economic globalization can be explained by the independent variables. Based on the F value was 93.11888, and Prob[F-statistic]= 0.000000, there are at least one of independent variables has statistically significant relationship with human trafficking. Based on the t value there are statistically significant relationships between Gross National Income (GNI) per capita, Trade, and Population as a facilitator influences and human trafficking problem. The two models are detailed with tables showing statistically significant relationships as a result of the empirical study of established trafficking in persons. New policy implications “Zero Human Trafficking” aims to eliminate labor exploitation and to prevent of abuse of vulnerable young people from ill-prepared migration. For regional development other policy measures and programs should be adopted for enhancing capabilities and empowering people to participate in the economy, leadership and education.

Index Terms—Human trafficking, Greater Mekong Sub-region, Pooled OLS regression

I. INTRODUCTION

Trafficking in women and children in the Greater Mekong Sub-region (GMS) is a long founded and complicated issues often incorporated with illegal migration and trans-national organized crime. In spite of various governmental and non-governmental efforts to oppose human trafficking, the problem seems to be frightening increase. Collecting accurate statistics is a challenge because of the criminal and underground nature of trafficking as well as different data collection methodologies. However, globally it is estimated that 800,000 to 2.5 million people are victims each year, including some 1.2 million children. At least 12.3 million people are engaged in exploitative labor practices. In the GMS alone, a quarter of a million people are victimized by trafficking each year (World vision, 2005). This is greatly recognized that trafficking in persons is an unpleasant violation of human rights. Trafficking still occurs from the Mekong developing countries to destinations further abroad. Therefore, a research problem can be conceptualized how economic exogenous factors influencing on the human trafficking in the GMS. The study investigated a research question how economic globalization as a facilitator influences on human trafficking problem. Pooled OLS regression was employed to test the hypothesized relationships covering data for the eight-year period 1996-2003.

II. METHODOLOGY

A conceptual model was specified including dependent variable (Y), control variable (Zi) and dummy variables (Di) adopted from previous and existing literatures as follows:

1) Dependent variable (Y) denotes An ordinal structure ranging from 0 to 5 (0 being no reported trafficked flows, 5 being very high), taken from UNODC Incidence Reporting Index, 2006.

2) Control variable (Zi) denotes economic exogenous factors influencing on trafficking in particular according to the previous literatures (Cho, S., Dreher, A., & Neumayer, E. 2011) including GDP from WDI, 2011, Gross National Income (GNI) per capita or National income per person from WDI, 2011, Trade (the ratio of imports and exports to GDP), FDI (FDI, net inflows) due to increasing of FDI, which can indicate of growing economic globalization. and Population (Zj) from WDI, 2011, as richer and more populous countries should experience higher flows.

3) Dummy variables(Di)

   a) Exchange rate denotes the dummy that is coded as 1 if that the appreciation of the currency and 0 otherwise. The appreciation of the currency can make exports more expensive in foreign markets and shifts resources from tradable to non-tradable sectors, which can slow down growth in employment and lead to further pressure for emigration. An index indicating exchange rate is taken from WDI (2011).

   b) DIM denotes the dummy that is coded as 1 if that country has number of migrants more than average of the number migrants in the GMS and 0 otherwise. Since potential victims might be attracted by the existence of pre-existing migrant networks (Mahmoud & Trebesch 2010). Data are taken from WDI, (2011) and are only available for 1990 to 2005.

   c) DDemocracy denotes the dummy that is coded as 1 if that country is the democracy and 0 otherwise. An index indicating democracy is taken from Cheibub, J.A., Jennifer, G., & James, 2011. National income per person from WDI, 2011) including

   d) DDemocracy denotes the dummy that is coded as 1 if that country is the democracy and 0 otherwise. An index indicating democracy is taken from Cheibub, J.A., Jennifer, G., & James, 2011.
R. V. (2010). In general, the authorities respected the human rights of its inhabitants; nevertheless, there was problem in stateless people. DRule of law denotes the dummy that is coded as 1 if that positive value which means better outcomes or will to reduce victim because trafficker has a higher risk of prosecution and 0 otherwise. An index indicating Rule of law is taken from the World Bank Governance Indicators (WGI) (Kaufmann, D., Kraay, A., & Massimo, M., 2009). The ranging is from -2.5 to 2.5.

The procedure works as follows:

The model variables must be stationary in order to correct a necessary condition of classical econometrics and minimize the potential for spurious results in regressions using time-series or panel data. Thus, this research comprised panel estimation and checked for stationarity, avoiding spurious regression results (Levin, A., C.F. Lin, C. Chu., 2002). Control variable (Zi) was tested using Levin-Lin-Chu (LLC) Test (2002). This test shows that by associating the time series information with that from the cross-section, the inference about the existence of unit roots can be made more accurate, particularly when the time series dimension of the data is not very long and similar data may be gained from a cross-section of units such as countries or industries. LLC test assumes that there is a common unit root process such that it is identical across cross-section. Individual unit root tests have limited power. The power of a test is the probability of rejecting the null when it is false and the null hypothesis is unit root. It follows that we find too many unit roots (Levin, 2002). LLC test suggests the following hypotheses:

\[ H_0: \rho = 0 \quad \text{(each time series contains a unit root)} \]
\[ H_1: \rho < 0 \quad \text{(each time series is stationary)} \]

where the lag order \( p \) is permitted to vary across individuals. The procedure has three steps. The first step, we run augmented Dickey-Fuller (ADF) for each cross-section on the equation

\[ \Delta y_i = \rho y_{i,t-1} + \sum_{j=1}^{m} \beta_j \Delta y_{i,t-j-1} + \alpha_m d_m + \varepsilon_i. \]

The second step, we run two auxiliary regressions \( \Delta y_{i,t-L} \) and \( d_m \) to get residuals \( \hat{e}_i \) and \( \Delta y_{i,t-L} \) on \( \Delta y_{i,t-1} \) and \( d_m \) to obtain the residuals \( \hat{\varepsilon}_i \). The third step involves standardization of the residuals by performing \( \hat{\varepsilon}_i = \hat{e}_i / \hat{\sigma}_\varepsilon \), \( \hat{\varepsilon}_{i,t-1} = \hat{\varepsilon}_{i,t} / \hat{\sigma}_\varepsilon \), where \( \sigma_\varepsilon \) denotes the standard error from each ADF. In the final step computes the pooled t-statistics (Levin, A., C.F. Lin, C. Chu., 2002).

III. RESULTS AND DISCUSSION

Estimation Results of panel unit root tests using LLC (2002) and pooled OLS regression were presented.

Table 1: Estimation Results of panel unit root tests using Levin, Lin & Chu (2002).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level (Prob.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null: Unit root (assumes common unit root process)</td>
<td></td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu</td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>0.0000***</td>
</tr>
<tr>
<td>Trade</td>
<td>0.0000***</td>
</tr>
<tr>
<td>GDP</td>
<td>0.0004***</td>
</tr>
<tr>
<td>GNI</td>
<td>0.0000***</td>
</tr>
<tr>
<td>Population</td>
<td>0.0000***</td>
</tr>
</tbody>
</table>

Note: ** indicates significance at 1% level

The research is conducted using the panel unit root test of five specified variables by LLC (2002). Table 1 shows the result of the panel unit root tests based on LLC (2002). This test is especially useful since the alternative hypothesis is that all the panels are stationary. As shown in Table 1, the test results indicated that the variables are stationary.

The LLC procedure proceeds from the assumption of a homogenous panel, which allows constructing a test statistic for the pooled regression estimator. After having estimated the stationarity of the variables, the study examines the relationship between economic globalization and human trafficking. The next part obtained the result of the pooled OLS regression.

Table 2: Estimation Results of pooled OLS regression.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>C (other variables)</td>
<td>1.472291***</td>
<td>0.188677</td>
<td>7.803237</td>
</tr>
<tr>
<td>GDP (Zi)</td>
<td>-2.73</td>
<td>1.57</td>
<td>-0.017335</td>
</tr>
<tr>
<td>GNI per capita (Zi)</td>
<td>-0.000155**</td>
<td>6.97</td>
<td>-2.222133</td>
</tr>
<tr>
<td>FDI (EGi)</td>
<td>-1.59</td>
<td>2.04</td>
<td>-0.777614</td>
</tr>
<tr>
<td>Trade (EGi)</td>
<td>0.012704***</td>
<td>0.002414</td>
<td>5.263416</td>
</tr>
<tr>
<td>Population (Zi)</td>
<td>1.21*</td>
<td>6.09</td>
<td>0.198315</td>
</tr>
<tr>
<td>DExchange rate</td>
<td>0.061307</td>
<td>0.097607</td>
<td>0.628095</td>
</tr>
<tr>
<td>DInternational migration (IM)</td>
<td>1.492361***</td>
<td>0.200978</td>
<td>7.425509</td>
</tr>
<tr>
<td>DDemocracy</td>
<td>1.349290***</td>
<td>0.099913</td>
<td>13.50462</td>
</tr>
<tr>
<td>DRule of law</td>
<td>-0.020212</td>
<td>0.166564</td>
<td>-0.121284</td>
</tr>
</tbody>
</table>

R²: 0.956264 Adjusted R²: 0.946351

F-statistic: 93.11888 Prob[F-statistic]: 0.000000

Note: *** indicates significance at 1% level

3The result showed that other variables are associated with a higher degree of trafficking victims inflows

Pooled OLS regression was employed to test the hypothesized relationships covering data for the eight-year period 1996-2003. The ordinary least squares estimation of the pooled model is specified as follows:

\[ Y = 1.472291 - 0.000155 \times \text{(GNI per capita)} + 0.012704 \times \text{(Trade,)} + 1.21 \times \text{(Population,)} + 1.492361 \times \text{(DIM,)} + 1.349290 \times \text{(Di,)} \]

From table 2, adjusted R² indicated that 94.6351 percent of the variation in the incidence of trafficking inflows can be explained by the independent variables. The F value was
There are statistically significant relationships between GNI per capita, Trade, and Population as a facilitator influences on human trafficking problem. There are statistically significant positive relationships between the dummy DInternational migration (IM) (coded as 1 if that country has number of migrants more than average of the number migrants in the GMS and 0 otherwise) since potential victims might be attracted by the existence of pre-existing migrant networks (Mahmoud & Trebesch 2010) as a facilitator influences on human trafficking problem. There are statistically significant positive relationships between the dummy DDemocracy (1 if that country is the democracy and 0 otherwise.) An index indicating democracy is taken from Cheibub, J.A., Jennifer, G., & James, R. V. (2010). In general, the authorities respected the human rights of its inhabitants; nevertheless, there was problem in stateless people. Sometimes, democracy may be the cause of human trafficking inflows as an unpleasant violation of human rights. New policy implications “Zero Human Trafficking” aims to eliminate labor exploitation and to prevent of abuse of vulnerable young people from ill-prepared migration.

IV. Conclusion

The research examined the impact of economic globalization on the human trafficking inflows into selected six GMS developing countries. Incorporation of panel unit root tests using Levin, Lin & Chu (2002) and pooled OLS regression were employed to test the hypothesized relationships covering data for the eight-year period 1996-2003. The models are detailed with tables showing statistically significant relationships as a result of the empirical study of established trafficking in persons. The findings indicated that there are statistically significant relationships between GNI per capita, Trade, and Population as a facilitator influences and human trafficking problem. Also, there are statistically significant positive relationships at the 1% level between International migration (IM) Democracy (D) and human trafficking.

Finally, new policy implications “Zero Human Trafficking” aims to eliminate labor exploitation and to prevent of abuse of vulnerable young people from ill-prepared migration. For regional development as a case of selected six GMS developing countries, other policy measures and programs should be adopted for enhancing capabilities and empowering people to participate in the economy, leadership and education.

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References