

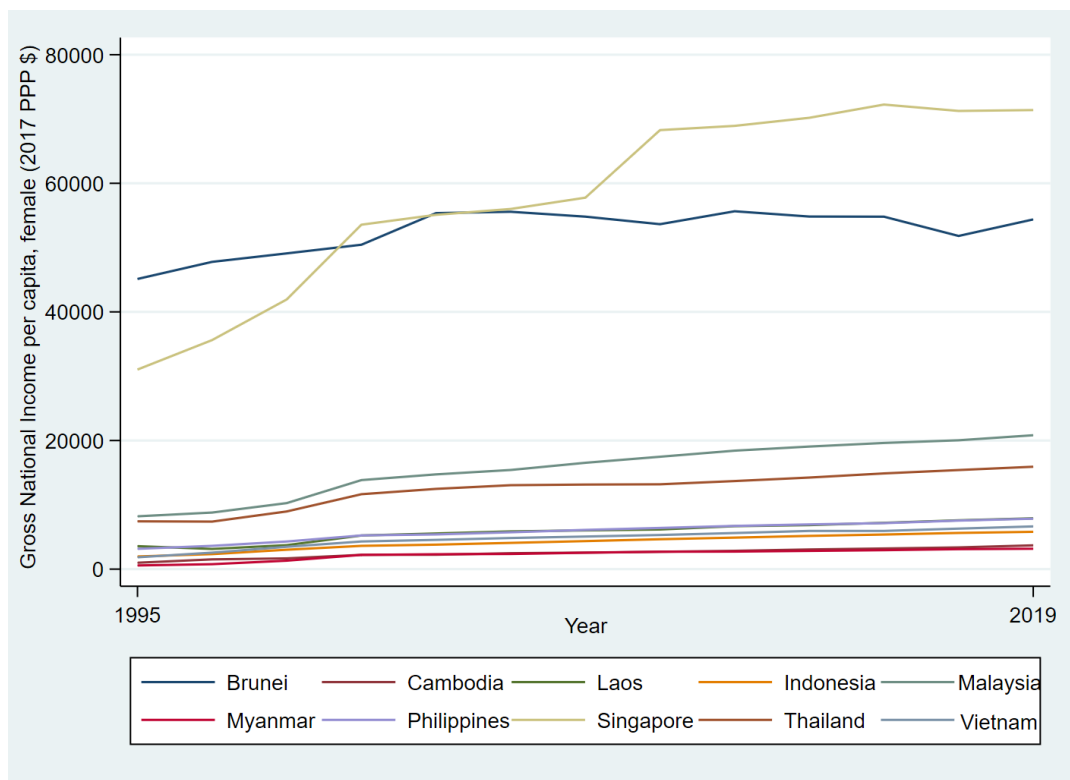
## **The effect of FDI on women's incomes and well-beings in 10 Southeast Asian countries**

### **1. Introduction**

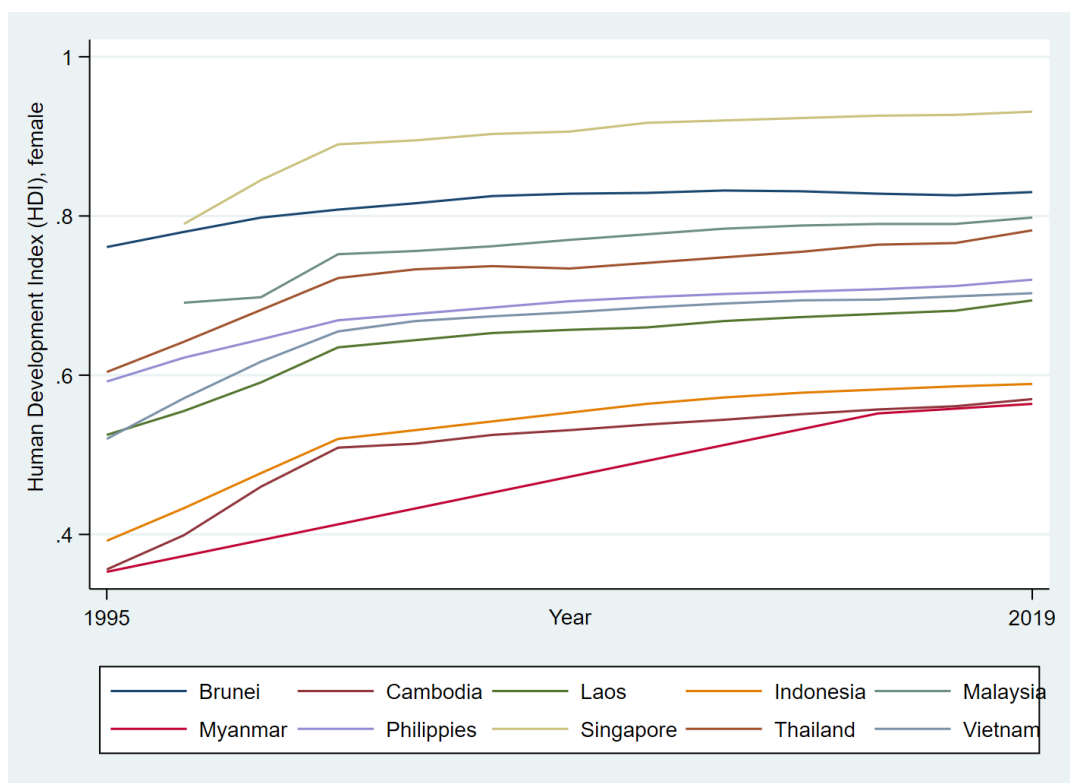
The ten states in the Southeast Asia emerge as the fifth largest regional economy in the world and serve as a trade powerhouse and a prosperous investment destination over the past few decades (ASEAN Integration Report, 2019). In 2015, the Association of Southeast Asian Nations (ASEAN) implemented the ASEAN Economic Community Blueprint 2025 plan to accelerate the region's economic integration and various trade agreements with many developed countries. The leaders firmly express their provisions and commitment to becoming an open regional economy. Consequently, the countries of ASEAN have the total trade values reaching 2.8 trillion USD in 2018 – a 23.9% increase since 2015, international attractions in multiple industries, and increasing foreign direct investment (FDI) inflows over the years (ASEAN Statistical Leaflet, 2020; ASEAN Integration Report, 2019).

As international trade becomes more indispensable within the region's economic growth, Southeast Asian leaders need to be aware of the effects of this movement on income and well-being for women in the manufacturing sector. Higher frequencies of trading activities and investment inflows lead to a higher demand for local cheap female labor and low-cost working conditions in the export-oriented workplaces (Khor, 2012; Benería, Berik, and Floro, 2015). The foreign investors sought to profit from these comparative advantages of the market-oriented industrialization among several Southeast Asian countries since as early as the 1990s (Hill, 1997). Despite growth in earnings (Figure 1) and employment in this industry, women suffer from unresolved gender discrimination by the employers and colleagues, decreasing women's speed of achieving basic human capabilities and well-being (Figure 2). In other words, the promoted international trade activities might persist improvement of inherent gender issues and harm women in the long run (Benería, Berik, and Floro, 2015). Given the complex domestic gender inequality in the Southeast Asia (ASEAN Post Team, 2018), it is important that the state leaders and authorities investigate export-led policies in which manufacturing female workers' well-being and sustainable development are at the center of discussion. Doing so requires gender and

development perspectives with feminist and moral criticisms rather than solely economic justifications for large but short-term gains raised from the globalization activities.



**Figure 1. Gross National Income per capita, female (2017 PPP \$) (1995-2019)**



**Figure 2. Human Development Index, female (1995-2019)**

The paper aims for two investigations using a panel data set. The first is to measure the relationship between economic growth and FDI inflows while the second focuses on the effects of FDI inflows on the manufacturing female workers' incomes and well-being. The data set covers from 1995 to 2019 and includes updated trading and well-being information for women of ten member states in the ASEAN. I argue that (1) increased FDI activities significantly lead to an increase in Gross Domestic Products (GDP) per capita, on aggregate, and (2) increased FDI inflow values decrease Gross National Income (GNI) per capita for women and harm the progress of Human Development Index (HDI) for women working in the export-oriented industries in the Southeast Asia.

## **2. Literature Review**

The collapse of Rana Plaza in Bangladesh on April 24, 2013 has struck the world with the deadliest garment factory disaster involving more than one thousand workers. The garment workers under the risky working condition had been exploited as the demand for garment and textile and the assembly productions skyrocketed. The incident which involved mostly female workers raises urgent gendered critiques of the expanding neoliberal ideologies, globalization in the form of international trade, and gender inequality in the developing countries (Islam & Hossain, 2016). The inhumane working conditions in the Rana Plaza factory require further investigations into women laborers in the export-oriented sectors that are highly demanded due to accelerated international trades mostly in the emerging and developing countries like in the Southeast Asia. Indeed, there has been many works from various economic and social viewpoints regarding women and globalization.

Over the last few decades, the ASEAN has facilitated the economic integration in goods, services, and capital investment among the state members within the region and with the global markets. Pangestu and Ing (2016) argue that ASEAN's role as a major production base should expand to be more competitive and effective, attracting more foreign direct investment (FDI) and capitalist players from around the world. Viewing diplomacy and labor abundance in the low- and middle-income countries as advantages, they suggest that increased openness and trade liberalization help these economies generate more revenues from export-oriented industries and assembly operations. Therefore, employees in these sectors financially benefit from the movement. However, Pangestu and Ing (2016) mainly focus on the financial indicators and lack an accountability of gender factors in their analysis; thus, it is not comprehensive to capture the well-being and wage differentials of the women workers especially in the manufacturing workplaces.

The necessity to include women factors is emphasized as Blancheton and Chhorn (2019) and Mamoon and Murshed (2013) find that there is a significantly positive relationship between trade openness and income inequality among genders in the developing countries. They research different educational levels and find that the income gap between men and women with similar skills is widening, negatively affecting gender justice and social development.

Seguino (2000) sets out to take gender into consideration in Asian economic growth from 1975 to 1990 and asserts that analyzing macroeconomic outcomes and state ideologies on trades from a gendered perspective helps social activists and policymakers understand the causes of unequal distribution of national income and gender bias in the manufacturing workplaces. Seguino (2000) finds that the gender discrimination and persistent patriarchal norms are deeply inherent to the political and economic system in the Asia-Pacific countries. Moreover, the macroeconomic sources of rapid growth in these countries are due to either a liberalized trade regime with a market-friendly environment or an export-oriented economy with strict state regulation over policies and resources without critical gendered calculation. The irony is that several Asia-Pacific economies like South Korea or Malaysia with the widest wage gaps between men and women in the industrial areas grew the most rapidly during the 1990s (Seguino, 2000). More recently, Bui, Vo, and Bui (2018) add a perspective from another party, the foreign investors and employers, and find that efficiency-seeking and low-cost behaviors among them aim to take advantage of gender discrimination and thus increase their capital production accumulation. However, the authors mostly focus on the political and business mindsets and do not provide updated evidence about the female progress or the effect of capital accumulations on women's wages and well-beings.

Before analyzing literature that is more specific to the Southeast Asian nations, it is worth comprehending the two significant works on the issue of vibrant manufacturing activities in relation to gender and development. Avent-Holt and Tomaskovic-Devey (2012) analyze the relational inequality with four different hypothesis models and data on manufacturing plants in the United States and Japan during the 1980s. They incorporate the workplace's exploiting culture and institutional gender politics into the analysis. On a local scale, in Indiana and Kanagawa, they find that men had more privileged access to high-wage positions and skilled men earned higher than skilled women. Indeed, many high-wage manufacturing plants tended to employ few women and pay them less based on inherent sex stereotypes rather than skill assessments, thus devaluing women's labor and giving higher wages to men (Avent-Holt & Tomaskovic-Devey, 2012). During the 1980s, the United States subverted its domestic manufacturing power so the chances for women to work in this sector were even fewer. In other case, however, Japan was a major

production powerhouse for electronics and household appliances at the time, yet women did not stand a chance in these workplaces to be equally paid compared to men who took the advantages of their gender identification. Considering variation across the plants in the United States, the authors note, income inequality persisted, and manufacturing female workers might need more social and workplace resources to claim a fair pay for them. Despite male-dominated data in the 1980s, Avent-Holt and Tomaskovic-Devey (2012) demonstrate that the manufacturing sector needs investigations into the workplace culture and behavior towards women and gender stereotypes on a local or regional scale.

Benería, Berik, and Floro (2015) observe that, in the emerging and developing countries like Colombia or Mexico, there has been an increasing preference for women workers in export-oriented and labor-intensive industries that operate on low-cost production and ensure regional and global competitiveness. Due to persisted gender norms in the workplace without intensive security policy enforcement, women's labor is perceived as higher productive but exploited and paid much lower than men. Benería, Berik, and Floro (2015) find that there are three reasons plant employers and governments use to justify for women's decreasing wages (or known as female labor cost): (1) women are classified as secondary earners and dependent on male breadwinners, (2) assumed temporary absence from work due to maternal duties, and (3) expected behavior to work excessively even under dangerous conditions. So, it means the more urgent and serious problem that needs more attention is the inherent gender norms and discriminations. Benería, Berik, and Floro (2015) stress that the statistics presenting women's higher participation rate and higher wages from the trade openness promotion on the media miss a thorough consideration of women who are left no choice but to work overtime and conform to employers' norms and disciplines so that they can earn more money. Although female laborers are preferred in trending export-oriented employments, women suffer from the risky working environments (like in the case of Rana Plaza) and unfair sources of earnings in the developing countries (Benería, Berik, and Floro, 2015).

To assess women's overall social position in the Southeast Asian societies, Francisco (2007) finds that each country has taken the matter of women and development with different levels of intensity and attention. Singapore and Brunei Darussalam are regarded to be the most efficient countries that work well on the human development matter. Malaysia, Thailand, and the Philippines are among the high end, Vietnam and Indonesia at mid-range, and Myanmar, Cambodia, and Lao People's Democratic Republic at the low end of the average human development level. However, Francisco (2007) analyzes Sen's seven types of inequality (Sen, 1999)

with the corresponding male-female indicators in the Southeast Asian communities and suggests that males are still more advantaged than females overall. That is, males are preferred over females culturally and professionally which affects wages differentials. In the manufacturing employment data surveyed from 1997 to 2003, despite increasing “feminization” in the workplace, all wages of women are either lower than that of men or equal to an average of about two-thirds of that of men’s income in the same position; only Myanmar experience higher women’s wages in the sector (Francisco, 2007). This problem remains unresolved for at least nearly a decade later as Davies (2016) finds lacking a proper Women, Peace and Security Agenda reflects that the ASEAN has not completely committed to solving gender inequality and has failed to catch up the global human right development.

One major limitation in the literature in the Southeast Asia’s gender issues is a lack of data specialized in gender discriminations and manufacturing industries. Sangaji, Miyasto, and Kurnia (2018) are not aware of the caveat and they primarily work on the effect of GDP per capita, trade, and foreign trade investment on Gender Inequality Index without considering many relevant control variables. They conclude that gender inequality soon declines as income shares are equally distributed if, they recommend as well, the policymakers in the ASEAN countries pursue to actively stimulate macroeconomic determinants regarding GDP, investment, and exports. The authors fail to account for complex gendered factors such as different industries in different countries and cultures, working conditions, or different severity level of gender norms that inherently affect every woman’s bodily health, integrity, and wages. Moreover, their regression model potentially generates endogeneity bias because it excludes the fixed effects.

It is necessary to produce more literature on the relationship between trade openness and women’s social and economic states from different perspectives. In this paper, I examine a causal effect of accelerated FDI inflows in the Southeast Asia from 1995 to 2019 on two aspects. The first aspect regards an increase in National GDP per capita across the ten countries and the second regards a decrease in incomes and HDI for female manufacturing workers in the region. This investigation can contribute to the literature in two ways. First, the paper provides a feminist perspective that critiques the inefficiency of these policies on improving women workers’ financial and well-being states in the Southeast Asia. As the ASEAN has been widely promoting the integration agenda, the leaders might pay little attention to current social problems that silently hamper women and focus on large but short-term profits. Benería, Berik, and Floro (2015) note that female workers in factories are exploited under poor working conditions due to low enforcement intensity of the policies that secure women from the employers’ negligence and

gender discriminations. Second, the study adapts a panel analysis of updated data and controls for relevant trading and gender elements like private capital flows, export and import values, and female-to-male unemployment rate. The regression models aim to show the recent negative country-constant and year-constant effects of international investment inflow on women's basic life conditions like incomes and well-being security.

### 3. Data and Methods

In this paper, I use a panel data set constructed from Human Development Data Center, under the establishment of United Nations Development Programme (UNDP) on manufacturing employment/income status and economic integration elements in the Southeast Asia with the central focus on women. Particularly, I gather data on GDP per capita (2017 U.S. dollars), GNI per capita for female (2017 U.S. dollars), HDI for female, FDI net inflows (percentage of GDP), export and import values (percentage of GDP), private capital flows (percentage of GDP), remittance inflows (percentage of GDP), and female-to-male unemployment rate. Covering a course of 24 years from 1995 to 2019, the panel data reflects the dynamic activity changes in the ten state members of the ASEAN – Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. The units of measurement of all variables are kept originally according to the UNDP database. Overall, there are maximum 130 observations and 11 variables.

Variable	Description	Unit of measurement
GDP	Gross Domestic Product (GDP) per capita	PPP 2017 U.S. dollars
female_inc	Gross National Income (GNI) per capita, female	2017 U.S. dollars
HDI_female	Human Development Index (HDI), female	Index point: 0 to 1
FDI	Foreign Direct Investment, net inflows	Percentage of GDP
export_import	Exports and imports (% of GDP)	Percentage of GDP
capital	Private capital flows (% of GDP)	Percentage of GDP
remittance	Remittances, inflows (% of GDP)	Percentage of GDP
unemployment	Total unemployment rate (female to male ratio)	Rate: 0 to 1 percent

**Table 1. Data Codebook**

In Table 2, there are missing observations for the explanatory variables and some variables have odd values, thus this is a unbalanced panel. That is, *remittance* variable misses sufficient data

while exports and imports, *export\_import*, has significantly high maximum value. Another small issue associated with this dataset is that some trade variables like *FDI*, *export\_import*, *capital*, and *remittance* are highly correlated with *GDP*. However, it means the dataset has provided almost sufficient variables to reduce endogeneity bias. The primary limitation of the dataset deals with the missing data specialized on women's employment rate and employers' bias behaviors in the manufacturing sector in the Southeast Asian region. The data collectors on trade and development data like UNDP or the World Bank fail to consider these areas in their data. It would be ideal to access the information.

Variable	Obs	Unique	Mean	Std. Dev.	Min	Max
GDP	130	130	21816.01	27336.05	775	97745
female_inc	130	130	16403.54	20528.62	573	72244
HDI_female	119	106	0.6822101	0.1305332	0.353	0.931
FDI	125	76	6.0544	6.210157	-2.8	28.6
export_import	125	118	126.9696	89.34757	0.2	420.4
capital	111	85	-2.477477	5.965411	-14.4	14.9
remittance	102	88	3.351275	3.265703	0.02	12.78
unemployment	130	63	1.179538	0.4376928	0.7	5.25

**Table 2. Summary Statistics**

The model identifications contain fixed effects models for three according hypotheses. The purpose is to compare the effects of the foreign direct investment inflows (*FDI*) on the outcome variables: (1) *GDP*, (2) *female\_inc* and (3) *HDI\_female* in which *GDP* is the main measurement of economic growth whereas *female\_inc* and *HDI\_female* are the women's financial and well-being states. Including country-fixed and year-fixed effects allows the panel study to take heterogeneity in countries and years into consideration, thus we can control for variations within the Southeast Asian countries over time and limit potential omitted variable bias which raises when we exclude fixed effects and do a pooled ordinary least squares (OLS) regression. One omitted variable bias example deals with the workplace cultures and business mindsets that possibly affect the performance of the economy (*GDP*), female income (*female\_inc*), and female human development progress (*HDI\_female*) while being correlated with the effectiveness of FDI inflows.

For the first model regarding economic growth as the outcome variable, the explanatory variables include foreign direct investment (*FDI*), private capital (*capital*), export and import values (*export\_import*), and female-to-male unemployment (*unemployment*). *FDI* is the variable of interest



and it represents the popular condition in trade deals and export agreements. The other explanatory variables are trade and export factors that reflect the activities in economic integration in the Southeast Asia. They also control for the female unemployment in this industry. In the first regression model,

$$GDP_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 capital_{it} + \beta_3 export\_import_{it} + \beta_4 unemployment_{it} + \gamma_t + \alpha_i + u_{it}$$

subscript  $i$  denotes each country and  $t$  denotes each year. The variable  $\gamma_t$  represents the year fixed effects and  $\alpha_i$  represents the country fixed effect. According to my hypothesis, I predict the coefficient on  $FDI$  to be positive as Pangestu and Ing (2016) suggest that there is often a positive relationship between trade activities and economic growth.

For the second and the third regression model,  $female\_inc$  and  $HDI\_female$  are the dependent variables and the explanatory variables along with the subscripts are similar to the first, as follows,

$$female\_inc_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 capital_{it} + \beta_3 export\_import_{it} + \beta_4 unemployment_{it} + \gamma_t + \alpha_i + u_{it}$$

$$HDI\_female_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 capital_{it} + \beta_3 export\_import_{it} + \beta_4 unemployment_{it} + \gamma_t + \alpha_i + u_{it}$$

These two models are the paper's focus of argument. I expect the coefficient on the variable of interest ( $FDI$ ) to be negative, which means that increasing trading activities and finances have a negative effect on manufacturing female workers' financial and well-being states, similarly to Benería, Berik, and Floro (2015) in their works in Colombia and Mexico. If so, the results contribute further to the gender development issues in the Southeast Asia and rebuke the accelerated promotion effort of international trade and market globalization.

#### 4. Results

Table 3 presents my regression results of the first model identification. I measure the effect of foreign direct investment (FDI) on the Gross Domestic Product (GDP) per capita, aggregately across the countries in the Southeast Asia. Column (1) includes pooled OLS estimates, Column (2) is two-way fixed effects and Column (3) includes fixed effects without time fixed effects. The year dummy variables are not jointly significant in the joint significance test; thus, it is not included in Column (3). For this model, we mainly discuss the results in the fixed effects in Column (1) as

Column (1) adapts OLS model which possibly pose a threat by endogeneity bias while the results in Column (2) face insignificant year fixed effects.

**Table 3. The Effect of Foreign Direct Investment on ASEAN's Gross Domestic Product**

Independent variables	Dependent variable: GDP per capita, 1995-2019		
	Pooled OLS (1)	Fixed Effects 1 (2)	Fixed Effects 2 (3)
Foreign Direct Investment	1,576*** (501.2)	1,392** (470.2)	1,634** (549.9)
Private Capital Flows	2,040*** (414.5)	78.87 (135.2)	121.1 (179.4)
Exports and imports	73.29** (35.81)	-51.68** (21.26)	-76.66** (27.61)
Female-to-male unemployment rate	13,188* (7,578)	8,386 (4,882)	4,906 (4,323)
Constant	-18,056 (11,416)	2,651 (13,137)	18,738 (10,463)
Year fixed effects	Y	Y	N
Observations	109	109	109
R-squared	0.614	0.661	0.472
Number of countries		10	10

*Notes:* Robust standard errors in parentheses; \*\*\* represents p-value<0.01 (highly significant), \*\* represents p-value<0.05, and \* represents p-value<0.1. Association of Southeast Asian Nations (ASEAN) is consisted of 10 countries.

Across the three columns, the estimated coefficients on FDI variable are relatively similar and positive, suggesting a consistent estimator of FDI and the unobserved effect be uncorrelated with the variable of interest. In the last fixed effects results, holding other factors constant, an additional percentage point of the FDI of GDP is associated with an increase in GDP by 1634 U.S. dollars per capita (2017 constant PPP dollars), on average. This magnitude is the largest among the three models and presents a feasible, slightly bigger, economic size in practice, and it is statistically significant. The R-squared values across the three models are relatively similar, showing a consistent goodness of fit. Generally, the FDI growth is significantly correlated with the GDP per capita, on average, holding other factors constant, showing that the globalization and international trade have a positive impact on national GDP in the ASEAN. The estimates in all columns are consistent with the first hypothesis that FDI inflows have a positive impact on GDP per capita in the Southeast Asia.

**Table 4. The Effect of Foreign Direct Investment on ASEAN's Gross National Income per capita, female**

Independent variables	Dependent variable: Female's Incomes, 1995-2019		
	Pooled OLS (1)	Fixed Effects (2)	Random Effects (3)
Foreign Direct Investment	1,097*** (400.5)	1,151** (438.5)	1,097 (722.4)
Private Capital Flows	1,525*** (340.8)	73.72 (107.2)	1,525*** (543.3)
Exports and imports	48.03* (26.39)	-69.30*** (19.99)	48.03 (41.56)
Female-to-male unemployment rate	10,604* (5,936)	6,088 (3,914)	10,604 (13,311)
Constant	-14,792* (8,902)	4,982 (10,223)	-14,792 (17,330)
Year fixed effects	Y	Y	Y
Observations	109	109	109
R-squared	0.546	0.692	
Number of countries		10	10

*Notes:* Robust standard errors in parentheses; \*\*\* represents p-value<0.01 (highly significant), \*\* represents p-value<0.05, and \* represents p-value<0.1.

Table 4 has estimates results of pooled OLS, fixed effects, and random effects – all measure the effect of FDI on women's gross national incomes (GNI) per capita in the Southeast Asian nations. The year dummy variables are jointly significant in this joint significance test; thus, the year fixed effects are included in the columns. Again, we should note that the pooled OLS model possibly generates heterogeneity bias.

In Table 4, across the three columns, the estimated coefficients on FDI are relatively similar, suggesting consistent results. In the pooled OLS results, holding other factors constant, one percentage point increase in FDI net inflows significantly leads to an increase in women's gross national incomes by 1097 U.S. dollars (2017 constant PPP dollars). After adding the consideration of unobserved variables or fixed effects in the Column (2), we see an increase in the effect of FDI on GNI for females from 1097 to 1151 U.S. dollars per capita, a relatively significant result. Column (3) with the random effects presents the coefficient on FDI of 1097 U.S. dollars, similarly to that in the pooled OLS model and a decrease from the fixed effects results. However, this coefficient is only significant if we conduct a one-side alternative hypothesis test.

In this case, the random effects model is more similar to the pooled OLS model. This is confirmed by the rho coefficient, meaning that 0% of the unexplained error term variance is attributed to the country fixed effects. Therefore, after controlling for the independent variables, the random effects estimates are close to the pooled estimates, so the observed effect is relatively unimportant. However, it is comprehensive to include and look at all the models and understand that we focus on the pooled OLS and random effects models. In conclusion, on average, an increase in FDI by one percentage point leads to an increase in Gross National Income for female by 1097 U.S. dollars, holding other factors constant. This rebukes the second hypothesis which I argue women's income decreases as an effect of increased FDI inflows.

**Table 5. The Effect of Foreign Direct Investment on ASEAN's Human Development Index, female**

Independent variables	Dependent variable: HDI for female, 1995-2019		
	Pooled OLS (1)	Fixed Effects (2)	Random Effects (3)
Foreign Direct Investment	-0.00416* (0.00223)	0.00161* (0.000821)	-0.00416 (0.00333)
Private Capital Flows	0.00944*** (0.00157)	-0.000106 (0.000207)	0.00944*** (0.00261)
Exports and imports	0.000841*** (0.000144)	9.04e-05 (6.63e-05)	0.000841*** (0.000218)
Female-to-male unemployment rate	-0.0146 (0.0411)	-0.000654 (0.00659)	-0.0146 (0.0691)
Constant	0.570*** (0.0581)	0.564*** (0.0137)	0.570*** (0.0951)
Year fixed effects	Y	Y	Y
Observations	104	104	104
R-squared	0.676	0.958	
Number of countries		10	10

*Notes:* Robust standard errors in parentheses; \*\*\* represents p-value<0.01 (highly significant), \*\* represents p-value<0.05, and \* represents p-value<0.1.

Table 5 presents the results regarding Human Development Index for female. The index is constructed by the United Nations Development Programme (UNDP) to emphasize people and capabilities as the center of assessing the development of a countries rather than economic growth alone. There are estimates of pooled OLS, fixed effects, and random effects. The year dummy variables are jointly significant by the joint significance test; thus, the year fixed effects are included. Similar to the Table 4, the estimates in pooled OLS and random effects models are close to each

other and the unobserved variables or fixed effects are not important in this case, confirmed by the rho coefficient in the random effects model.

To have a sense of the HDI, the mean of HDI in our sample data is 0.68, minimum and maximum values are 0.35 and 0.93, respectively. According to pooled OLS estimates, holding other factors constant, an increase in FDI net inflows by one percentage point is associated with a decrease in HDI for female by 0.004 index points, on average. This relatively small magnitude is similar to the estimated coefficient on FDI in Column (3) as expected. However, the coefficient on FDI in Column (1) is statistically significant using a 10% significance test while the coefficient on the variable of interest in Column (3) is not. Meanwhile, in the Column (2), holding other factors constant, an increase in FDI net inflows by one percentage point is significantly associated with an increase in HDI for female by 0.002 index points, on average. In Column (2), the standard error of the coefficient on FDI decreases in value and the confidence interval contains values that are mostly positive, showing that the FDI and HDI for female have a positive relationship. We should note that the control variables in the model 2 have negative estimated coefficients, meaning the possibility of a negative relationship might be stronger.

To conclude in this table, Column (1) and (3) present a negative relationship between HDI for female and FDI yet Column (2) is more confident about its significantly positive relationship. However, because the unobserved variables or fixed effects are not important in this case and pooled OLS might have endogeneity bias, we should take note of all the results of the models and conclude that foreign direct investment potentially has mixed effects on the human development index for female. This suits my final hypothesis that the FDI values reduce the progress speed of the HDI or the human capabilities and well-beings for women.

## **5. Discussion and Conclusion**

Overall, the regression results suggest that the FDI net inflows have a positive impact on the GDP and GNI for female laborers in the Southeast Asia while the variable of interest has a slightly negative effect on the HDI for female laborers in the region. It poses a little surprise to my second hypothesis as I predicted FDI net inflows would decrease women's incomes. The positive effects of FDI on GDP and incomes are supported by works of Pangestu and Ing (2016) and Benería, Berik, and Floro (2015) as the increased integration activities in the manufacturing sector brings financial benefits to all including women. Other than that, the critical result is the negative relationship between the HDI for women and FDI net inflows. Specifically, manufacturing female workers in the Southeast Asian countries have higher incomes yet lower

human development index or human capabilities given the higher FDI net inflows. Benería, Berik, and Floro (2015) offer a possible explanation that since the manufacturing women are considered to be the second class and suffer from gender norms, they are paid lower and forced to work overtime in factories to compensate for the earning unfairness. Therefore, higher income does not equal better human capabilities. If we solely look at numerical values such as GDP or incomes for females, we might conclude that females are treated well and the increased foreign direct investment inflows from the global market greatly benefit women's well-beings.

However, there are several problems with the model specifications. First, they miss some specific variables that characterize the economic life and human well-being of female workers in the manufacturing workplaces and factories. The Human Development Index for women is an efficient dependent variable but the control variables might not present all possible factors regarding the workplace cultures and conditions of mainly female workers in the industry which might affect the results about the HDI. It sets a need for data availability and data collections of wider range of elements such as household work responsibility or employers' gender discrimination in the factories and export-oriented workplaces in the Southeast Asian countries. Avent-Holt and Tomaskovic-Devey (2012) can provide detailed results about the gender inequality in the manufacturing sectors in the United States and Japan because of the quality and diverse data. Secondly, we see that the fixed effects are not important in this data sample despite using a panel dataset. It might be due to the small sample size and the scale of data. That is, the sample data is conducted on a national and regional macroeconomic scale, so it does not reflect the local situation in each country. It needs more specialized investigations into manufacturing sectors with specific data available for each country as emphasized by Francisco (2007). In Table 3 which I consider to be the most important results table, the results are mixed in terms of significance and different outcomes (the coefficients on FDI are positive and negative). Nonetheless, the magnitude difference is not large, there is little variance from the zero center. We might conclude that the FDI is not a stable support for women's capabilities; that is, even if it increases the HDI for women, the magnitude effect is significantly low. The fact that human well-beings are cared less and ranked the second after the economic growth might postpone the progress of achieving sustainable development goals in the Southeast Asia region.

In conclusion, the study has results consistent with most of the feminist and progressive works; that is, the increased openness to globalization and international trade in the form of foreign direct investment has a negative effect on women's capabilities and well-being. It presents a critical perspective that policies that heavily promote globalization prosperities and manufacturing

outcomes need re-investigations with a critical consideration of women labors' well-being being the center of the policymaking. Moreover, the paper suggests further necessity and effort to collect data specialized in the Southeast Asian countries and industrial workplaces for gender analyses.

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