Analysis Effectiveness of International Trade toward Poverty Reduction in Indonesia

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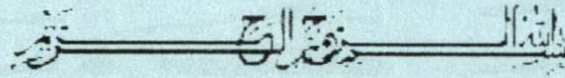Prof.Dr.H. Syafruddin Karimi, SE, MA
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بسم الله الرحمن الرحيم

I swear by this city (Mecca)

and you (Muhammad) are an inhabitant of this city

I swear by parent and offspring,

that we have created man for toil and trial. (QS. Al-Balad: 1-4)

The start line for the bright future,

A result of long journey,

Strict Struggle,

Hard work,

Tears,

And Pray

Small gift to makes my family proud of me

Thanks Mom Dad..........

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Analysis Effectiveness of International Trade toward Poverty Reduction in Indonesia
Thesis by: Subrini   Thesis Advisor: Prof.Dr.H. Syafruddin Karimi, SE, MA

ABSTRACT

This research study about Analysis Effectiveness of International Trade toward Poverty Reduction in Indonesia. This thesis analyzes the effectiveness of international trade toward poverty reduction in Indonesia using GLS (Generalized Least Square) by using cross-province data and regress it each year from 2000-2008. Variables used are poverty rate (P) as a dependent variable and trade openness (TO), foreign direct investment (FDI), unemployment (U), consumption (C) as an independent variables. Based on empirical result, suggests that trade openness and FDI are not significant and has negative relationship in order to decrease poverty rate. Furthermore, unemployment rate and consumption are significant but unemployment has positive relationship and consumption has negative relationship in order to decrease poverty rate. That means, only unemployment rate and consumption had been effective toward poverty reduction in Indonesia.

Keywords: international trade, poverty reduction, generalized least square, effective

This thesis has been presented before the examiners in the Thesis Examination and successfully passed the Thesis Examination on August 30th 2010.
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PREFACE

Alhamdulillah writer says to the God as a Lord of the World because gives writer strength, opportunity and capability in finished the thesis. The thesis is a final task as a requirement to getting Bachelor degree. The writer interested to research about international trade and poverty reduction. So, the thesis entitled "Analysis Effectiveness of International Trade toward Poverty Reduction in Indonesia". For this thesis I got data from BPS and BI, then some references from journal to adding my information.

The writer realizes that this thesis is far from perfect and good thesis. So that writer needs positive critics and suggestion from the readers in order to make the thesis better.

Finally, writer hopes that this paper could be gives information about international trade and poverty reduction in Indonesia and wish have benefit for readers.

Padang, August 2010

SUBRINI

ACKNOWLEDMENTS

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CHAPTER I

INTRODUCTION

1.1 Background

The period since 1990 has been a decade of trade policy reform. According to the World Bank's World Development Indicators, the average tariff rate in the world went down from 10.5% to 6.0% between 1990 and 2002 and the ratio of imports plus exports in GDP rose from 75.2% to 86.8%. In 1990, the General Agreement on Tariffs and Trade had been signed by 96 countries: between 1990 and 2005, 65 countries joined it either as the GATT or in its most recent incarnation as the WTO. In analysis of trade liberalization experiences by Wacziarg and Welch's (2002), they account that 49 countries liberalized between 1990 and 2001.

International trade has some variables as indicators to measure whether after a country applied international trade, it has positive impact to the balance of trade. There are some indicators of international trade such as export, import, foreign exchange rate, investment, GDP, unemployment, etc. But in this thesis writer focus on openness (which openness formula is export plus import divided by RGDP), foreign direct investment, and unemployment.

On trade liberalization country episodes, shows that trade shares and growth increase significantly and substantially after trade is liberalized. Kose et al. (2004), look at interaction effects between trade openness measures and other variables. Kose complementing their research on financial openness and growth, report robust

positive effects of trade openness on growth and find that trade openness turns the negative effect of volatility on growth into a positive one. Even on trade liberalization significantly to the growth, but does not has guarantee it will be significant to the poverty reduction.

Another empirical evidence about trade openness is come from Sergei Dodzin and Athanasios Vamvakidis (2003). The research is about the impact of international trade on the allocation of production across sectors in developing countries. The research estimates from a panel of 92 developing countries in the period 1960–2000. As a conclusion, they find developing economies that increased their openness to international trade during the period 1960–2000 experienced an increase in the production share of the industrial sector, at the expense of agricultural production. Since the industrial grows faster than the agricultural sector, the evidence suggests that one of the channels through which the positive openness.

By applied international trade, foreign direct investment as a capital inflow will be increase. Usually, foreign direct investment mostly comes from developed countries which have capital abundant. The ratio of private capital inflows to GDP as a growth determinant and have also evaluated the impact of different types of capital flows on growth (Bosworth and Collins 1999, Mody and Murshid 2002, Calderón and Schmidt-Hebbel 2003). Most of studies have found a positive impact of private capital inflows on growth, with a stronger effect in the case of foreign direct investment.

Trade stimulates economic growth as well as creates employment. The basic principles (of the WTO) make the system economically more efficient and cut the production and marketing costs. It gives consumers more choice, and a broader range of qualities to choose from. These are the basic benefits of world trading given by the WTO. WTO (2003).

Poverty is a multi-dimensional problem requiring holistic solutions that are sustainable over time. As a country characterized by great diversity in culture, religion, ethnicity, ecology and economies, Indonesia has experienced many challenges in pursuing poverty reduction. Economic growth and increased income are important but not the only routes to poverty reduction. These need to be complemented by better access to basic services, empowerment of the poor, and reduction of social exclusion, insecurity and vulnerability.

By doing international trade expect that social welfare will be increase. The determinant of increasing social welfare is increasing term of trade. Measurement of increasing term of trade is increasing amount of production and consumption. In international trade, comparative advantage is important to create production efficiency and to get maximum gain.

Poverty and inequality of income distribution always being a problem almost in all of countries in the world, but poverty rate and inequality of income distribution each country is different. Inequality of income distribution will be appearing from wages gap between skill labor and unskilled labor. Ways which can decrease inequality is by effective strategy for poverty reduction. Effective strategy for poverty

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reduction must be based on: pro-poor sustainable economic growth, inclusive social development, and good governance.

In absolute poverty, inequality of incomes is a problem. Somebody called in absolute poverty condition if level of income below the poverty line. Measurement of absolute poverty based on the Central Bureau of Statistics by "the basic-needs approach" was reflected by the establishment of the poverty line at 2100 calories of intake per capita per day. In global measurement is per capita income of US$1 a day. The extent and magnitude of absolute poverty depends on two factors: the growth of the mean level of real per capita income and the degree of inequality in the distribution of income. At any given level of per capita income, the more unequal the distribution of income, the greater is the incidence of poverty. Likewise, for any given pattern of income distribution, the lower the level of per capita income, the greater is the incidence of poverty.

Indonesia's record in reducing poverty in the two decades preceding the crisis has been exceptional. From a country with widespread poverty, it rose to the ranks of a middle income country in two decades. According to the Central Bureau of Statistics, the incidence of poverty fell from 40 percent in 1976 to about 11 percent in February 1996. Indonesia's rapid economic growth thus proved to be effective in reducing poverty, although the crisis in 1997 revealed unsustainable elements in this pattern of development. The crisis in 1997 had an immediate impact on the poor and near poor. Although the sharp increase in the incidence of poverty has receded with the

economic recovery, the surge in poverty during the crisis has left a large segment of the population in a vulnerable state.

According to the Central Bureau of Statistics data, poor people in Indonesia last 10 years are decreasing. We can see decreasing in year 2000, poverty rate 19,14 % become 17,41 % in year 2003. Next year poverty rate always decrease until 2005 around 15,97 %. In 2006 poverty rate increase 1,96 %. But next year amount of poor people in Indonesia decrease 4,34 million from 39,30 million in year 2006 to 34,96 million in year 2008. Relatively, also occurs declining amount of poor people from 17,75 % to 15,42 % in the same period.

There is, moreover, a wide dispersion of the incidence of poverty across regions. While the largest number of absolute poor live on Java, the incidence of the population below the poverty line is greater in the outer islands. Java has 7 % of the land and 60 % of the poor. Another 20 % are in Sumatra, with the rest spread across the archipelago. While Jakarta has the lowest poverty incidence at 7 %, Papua, Maluku, and East Nusa Tenggara are the poorest with the poverty incidence exceeding 35 %.

Trade policy is only one of many determinants of growth and poverty reduction. Trade openness has important positive spillovers on other aspects of reform. So that the correlation of trade with other pro-reform policies speaks to the advantages of making openness a primary part of the reform package. Besides openness, flow of foreign direct investment tend to be increase capital inflow in home country and can

creates new job field to absorb many employment and reduce unemployment. This way is also determinant of poverty reduction.

Therefore, based on that condition the writer interest to observe and doing analysis about **"Analysis Effectiveness of International Trade toward Poverty Reduction in Indonesia".**

The writer try to investigate whether international trade effective to reduce poverty in Indonesia. How openness in international trade reduce poverty in Indonesia. How foreign direct investment from abroad can add capital and create new job field to absorb employment in order to reduce unemployment rate and poor people.

Is international trade will be increase social welfare Indonesian people?

1.2 Research question

There are several question posed in this research:

1. How does international trade reform in Indonesia?

2. How does condition of poverty framework in Indonesia?

3. How do the effectiveness of openness, FDI, and unemployment rate toward poverty reduction in Indonesia?

4. How do international trade increasing household consumption and decreasing poverty rate?

1.3 Research Objectives

In this thesis, writer tries to analyze about effectiveness of international trade toward poverty reduction in Indonesia. This thesis research, takes some international trade variables. The independent variables are openness, FDI, and unemployment rate. Dependent variable is poverty rate as a measurement of effectives or not international trade toward poverty reduction in Indonesia. The data is comes from certain provinces in Indonesia. Writer selects provinces data because writer wants to know the economics performance of Indonesia by see framework of each province.

According to the literature review, openness has positive relationship with growth but could be negative relationship with poverty reduction because it can create inequality and imbalance income distribution. But, FDI as capital inflow will give positive impact on growth. Theoretically, high economics growth can reduce amount of poverty rate in a country. Trade will be stimulating economic growth as well as create employment. By international trade, there is no barrier to entry, so that a foreign country can be invested capital or foreign direct investment to the home country. This is, FDI will be used by home country to create new job field or expand a business. Automatically, job finding will be increase and job separation will be decrease.

The Stolper-Samuelson Theory (S-S) explains how the movement from autarky to free trade affects the distribution of real income (GDP) among different factors within nations. Trade, of course, tends to increase the level of real income in trading nations. Increasing in real income tend to be increasing of consumption. As we know

that consumption is a one of measurement in society welfare. The next theory Bergson-Samuelson theory explains about trade and social welfare. The social welfare increases when one individual becomes better off with no one else being worse off, with indicator of utility is increasing consumption. This condition could be support poverty reduction process.

1.4 Hypothesis

There is some hypothesis in this research:

1. Estimates that not all of international trade variables is effectives in order to poverty reduction.

2. Openness is estimates has positive impact to the growth but not significant to the poverty reduction.

3. FDI is estimates has positive impacts to the growth and significant to the poverty reduction.

4. From increasing amount of FDI, could be decrease amount of unemployment which has effective to the poverty reduction.

5. Estimates that Stolper-Samuelson theory and Bergson-Samuelson theory could be implement in Indonesia in order to reduce poverty rate.

1.5 Limitation of the Study

Based on hypothesis, scope of the study is effectiveness of openness, FDI, unemployment and consumption toward poverty reduction in Indonesia. Openness is measured as the exports plus imports as a share of GDP (Dollar and Kraay). In this research, analyze impact of openness toward poverty reduction in Indonesia. Which see from export plus import each province in Indonesia and the changing in **RGDP (Regional Gross Domestic Product)** 24 provinces in Indonesia to see effect of that to the poverty rate. Furthermore, to make sense some effects of international trade toward FDI, unemployment and consumption to measure social welfare by using Stolper-Samuelson theory and Bergson-Samuelson theory. In this research, amount of export plus import is total of export import activities in all sectors. This research using GLS (Generalized Least Square) by use panel data and regress it each year from year 2000-2008.

CHAPTER II

LITERATURE REVIEW AND EMPIRICAL EVIDENCE

2.1 Literature Review

To make this thesis writer needs many reference from past author as guidance for writer. So that, writer was read many journal and literature and catch the main idea of each journal. It is very useful to support this thesis. Therefore, from many journal writer got empirical evidence from some country which was analyzed relationship between international trade and poverty reduction.

According to Watkins (2002), appointed that openness along with associated free market reforms, holds the key to making globalization work for the poor. International trade has the potential to act as a powerful catalyst for poverty reduction, as the experience of East Asia demonstrates. It can provide poor countries and people with access to the markets, technologies, and ideas needed to sustain higher and more equitable patterns of growth.

Some of authors give empirical result about openness and FDI. For example, Edwards (1998) and Yanikkaya (2003), calculate openness by using formula of trade openness (import + export divided by GDP). According to Shahbaz (2006, 2007). FDI (Foreign Direct Investment) is an important source of capital, is used as proxy of financial openness, which measures the medium, and long-term ability of a country to attract investment from abroad. Moreover, FDI also complements domestic private investment, which is often associated with new job opportunities, enhancement of technology transfer thereby boosting overall economic growth in host countries.

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Thus, one of the most important features of globalization to international trade beside trade openness is financial openness. A huge increase in capital inflows especially in the form of foreign direct investment is also due to the liberalization of financial markets. Therefore, the concept of FDI can be used to interpret financial openness of an economy (Figini et al, 2004)

High rate of economic growth leads to sustained increase in the productive capacity of the economy through productive policies, which in turn leads to increasing employment opportunities in the country. This process allows a progressive absorption and integration of the unemployed and under-employed "including skilled and un-skilled" into expanding economic activities with high levels of productivity. In the process, poor may be able to achieve increment in their incomes through existing employment or shift to new jobs involving higher skills on higher wages. Thus, RGDP is assumed to have a positive effect on incomes of poor people. [Sawhill, (1988); Steven, (1999); Shahbaz, (2006, 2007)].

One may observe that after including the squared term of TO (trade-openness) indicating the phenomenon of Lafer-shaped curve (with an inverted U-shaped curve) in long runs significantly. This term explains that lower degree of trade-openness will raise poverty trends while reduces the poverty with higher degree of trade-openness. Trade Openness is coupled negatively and significantly with poverty trends, trade-openness seems to associate with poor segments of society through productivity and comparative advantage channels.

In contrary, Agenor (2003), found that trade-openness may have a U-shaped effect on poverty: while extensive integration reduces poverty, small amounts of globalization may hurt the poor. Surprisingly, co-efficient of economic growth that is proxied by GDP per capita is showing positive association with poverty.

International trade might hurt the poor is in case of increase relative inequality versus absolute improvement. That is existing over a specific period. A decline in the expenditure share of the bottom 40 % of the population may occur at the same time as an increase in the average expenditure of this same segment of the population. In fact, inequality may increase when the mean expenditure or income of high expenditure/income classes grows at higher rates than the rates of the lower expenditure/income classes.

Two ways to interpret the phenomenon above are: first, such an increase in inequality may not pose serious problems, because the lower classes will also experience improvement in their average standard of living. Ahluwalia (1996). Increases in relative inequality may also occur at the same times as upward mobility, which is positive. Second, an increase in inequality, as shown by the traditional inequality measures, may not be a problem. It may simply reflect a movement of people from low- to high-income groups or sectors if no one is made worse off, total income is allowed to increase, and some of the poor become better off (Knight 1976).

Assuming that the SUSENAS data are reliable and representative, during the two decades from 1976 to 1996 Indonesia experienced a significant increase in real average consumption, a consistent decline in poverty incidence and a relatively

insignificant change in inequality of consumption. Reduction of rural poverty has contributed significantly to the overall poverty decline and economic growth has been the most significant component of poverty reduction.

For the employment opportunities in getting job for poor people was analyzed by Ravallion and Huppi (1991). They idea is shifts in the labor force and improved employment opportunities in the urban sector have played a greater role in reducing aggregate poverty as shown by the results of decomposition simulation. If we take example Indonesia, it means sifting labor force from urban (Java) to the Sumatera will be reducing amount of poor people in urban. Because high population in Java with limitation job, creates aggregate poverty increases. By shifting in another place, that people could be getting job in new place.

2.2 Empirical Evidence

The relationship between trade openness and growth is a highly debated topic. The empirical literature shows that trade openness or liberalization affects output growth and that will be give impact also to the poor. Most of the studies have concluded that the openness of the trade regime has positive relation with GDP growth [Ahmed, Yusuf and Anoruo Emmanuel (2000), Edwards, S., (1998), Edwards, S., (1992), Harrison, A., (1996), Iscan, Talan (1998), Santos Paulino (2002), Wacziarg R., (2001), Yanikkaya Halit (2003)].

Based on Aamir Hussain Siddiqui (2005), he analyzes the impact of trade liberalization policy on GDP growth of Pakistan for the period ranging from 1972 to

2002. The main objective this study is to find the causality between trade growth and GDP growth. Iqbal, Baig and Tahir (2002) found that policy liberalization leading to an increase in imports may lead to a growth of output. Moreover, Iqbal, Tahir and Baig (2001) argued that import of Pakistan is mostly consisting of intermediate goods (petroleum, machinery, chemicals etc.) which are conducive to output growth, so the impact of import growth on output is positive. After processing data by using OLS, author get conclusion that there is long run negative relationship between trade growth and GDP growth. And when separate the total trade volume in export and import, author find insignificant positive relationship between GDP and export and import. Both the models showed positive and significant relationship between GDP and investment.

Rajinder Kumar and Arup Mitra (2009), both of authors bring out cross-country analysis with the inter-connections between economic growth, health and poverty. To get statistical result, equations have been estimated by two-stage least square method: in the first stage the reduced form equations have been estimated by ordinary least square technique and in the second stage the estimated values of the endogenous variables have been used as instruments to estimate the structural form equations. The empirical results is confirm the links between growth and health, mutually influencing each other. Higher growth improves health outcomes while better health outcomes raise economic growth. Economic growth enhances health measured in terms of life expectancy, which in turn contributes to economic growth positively. Though both higher growth and improved health are expected to reduce poverty, the

effect of economic growth on poverty appears to be statistically insignificant. This is understandable because unless growth is accompanied by rapid employment growth for the poor its effect would rather unequal. In fact, the adverse effect of capital-intensive technology, which slows down the growth, particularly for the semi-skilled and unskilled workers, and tends to aggregate poverty, is reflected in the empirical results.

Lane Kenworthy (1998), the author analyze do social-welfare policies reduce poverty. This is a cross-national assessment in US. Social-welfare policies do help to reduce poverty. American social-welfare programs are less effective than those in most of the other 14 nations examined here. This is happen because for many poor individuals with little in the way of marketable skills it makes sense financially to live off government transfers rather than take a low-wage job. The welfare system make they become trapped in poverty. The transfers pay enough to keep such individuals alive, but not enough to bring them above the poverty line. Were they to take entry-level jobs, by contrast, they might be able to work their way up the job ladder and eventually escape poverty.

John C. Anyanwu and Andrew E. O. Erhijokpor were investigate international remittances affects poverty in Africa. Defined as the share of remittances in country GDP – reduce the level, depth, and severity of poverty in Africa. But the size of the poverty reduction depends on how poverty is being measured. After instrumenting for the possible endogeneity of international remittances, author find statistical result that 10 % increase in official international remittances as a share of GDP leads to a 2.9 %

decline in the poverty headcount or the share of people living in poverty. In Africa, aid flows are considerably higher than remittance receipts (figure 6). However, the percentage increase since 2000 had almost been the same. For example, between 2000 and 2006, aid flows to the continent increased by 94 % while recorded remittances rose by 95.4 %.
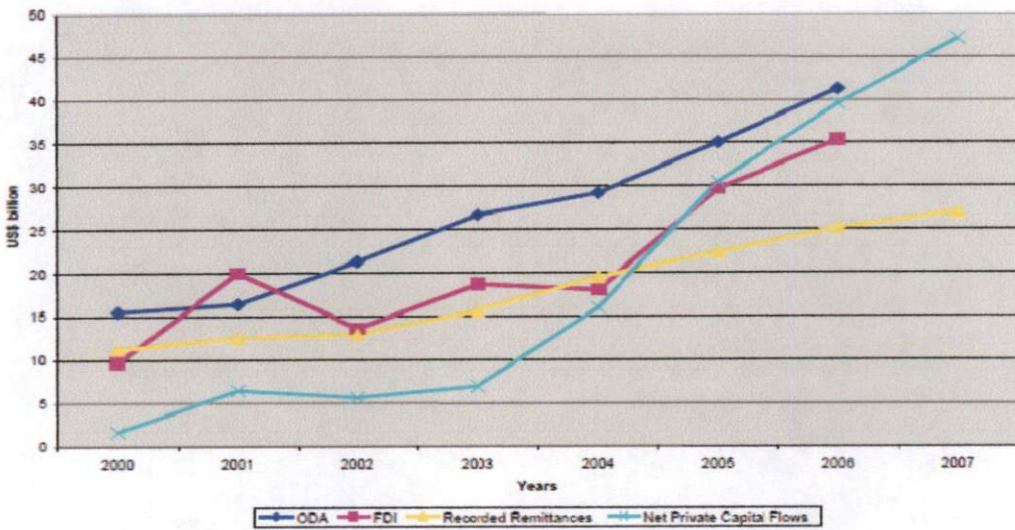
Figure 1. International Remittances and Selected Capital Flows to Africa

According to Enrico Santarelli (2003) which was investigated globalization reduce poverty or not, by some empirical evidence for the developing countries. To measure globalization author use standard indices of trade openness, financial openness and privatization. To measure poverty use both indices of relative and absolute poverty averaged over five and ten years. The empirical result of this paper is trade openness and the "size of the government" seems to be associated with lower

poverty levels. Conversely, financial openness, although not statistically robust, tends to be linked to more poverty. Then, there is a substantial difference between absolute and relative poverty analysis. Trade openness tends not to significantly affect relative poverty, while financial openness tends to be linked with higher relative poverty. Role played by government intervention in setting low levels of relative and, primarily, absolute poverty, has to be interpreted in terms of provision of the necessary goods and safety nets as well as the achievement of redistribution goals.

CHAPTER III

DEVELOPMENT OF EFFECTIVENESS INTERNATIONAL TRADE

TOWARD POVERTY REDUCTION IN INDONESIA

If we want to analyze effectiveness of international trade toward poverty reduction, should be considering about economics development. It is because economics development important to increase social welfare in a country. Increasing social welfare could be determining poverty reduction. Figure below show relationship among economics development with international trade. (Source)
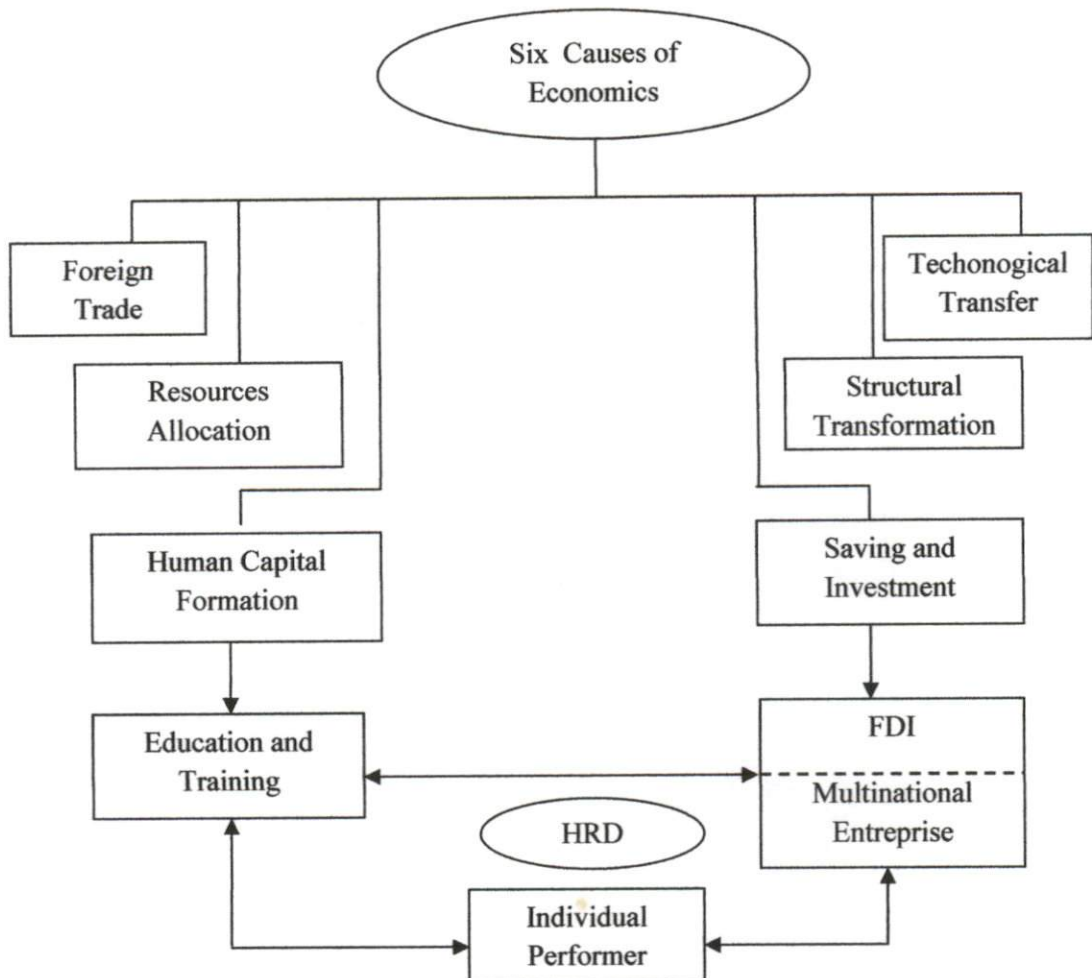
Figure 2. Confluence of HRD and Economic Development

3.1 Poverty Framework in Indonesia

Poverty reduction has always be the main agenda for the development of Indonesian government. Took from Soeharto administration (1965-1997), Habibie administration (1997-1998), Megawati administration (2000-2005), and Susilo Bambang Yudhoyono (2005-present). Act No.25 year 2000 on National Development Programs (PROPENAS) mandates government of Indonesia to reduce poverty incidence at 14 percent by the end of 2004.

When using a global measure of poverty, such as per capita income of US$1 a day, the percentage of the poor in Indonesia was estimated to be 7.4 per cent of the total population in 2003. It should the benchmark be raised to US$2 a day, more than half of the Indonesian population (about 53.4 per cent) could be considered poor. Indicators such as the Poverty Gap Index and the Distributional Severity Index can also provide information about the severity and extent of poverty in Indonesia. Relative poverty measures such as the Gini coefficient also reveal the gap between the rich and the poor in this country at both national and local levels.

To assess impact of government policies to the poverty reduction in Indonesia, it is important to have a good poverty monitoring system. Poverty monitoring also provide government planners, policy makers and local leaders with data to design and improve social and development policies to poverty reduction. BPS-Statistic Indonesia is among the leading institution with the main task is to provide statistical information on poverty to policy formulation. To measuring poverty incidence in Indonesia, BPS uses "the basic-needs approach".

The basic-needs approach was reflected by the establishment of the poverty line at 2100 calories of intake per capita per day. It defined the five main basic needs for people to survive and live in dignity as food, health, water and sanitation, education, and shelter. The basic needs approach was chosen to establish a basic level of social services to sustain the livelihood of the poor. One of the key assumptions was that the government had the political will to raise the resources needed to maintain social welfare for the poorest people. Besides finance, the government had to offer a vision and build capacity for the public to participate in social development efforts. In Indonesia, this needs-based approach caused considerable issues as it tended to ignore the complexity of poverty, which was the result of poor human resources, lack of social infrastructure and problems in natural resource management.

Government of Indonesia through Presidential Decree No.124 year 2001 and was revised by Presidential Decree No.8 year 2002 established National Committee on Poverty Reduction (KPK) with function to formulate integrated policy and advocated the local government to work with other stakeholder to eradicating poverty.

Indonesia's Poverty Reduction strategy Paper (PRSP) was developed by the Poverty Reduction Committee. The PRSP had two objectives in poverty reduction, which are increasing the income of poor people and reducing the burden of expenditures for basic needs.

This approach was to be implemented through four broad initiatives, or pillars:

• Opportunity creation.

The establishment of employment or entrepreneurial opportunities for the poor.

- Community empowerment.

The strengthening of community institutions to improve access to information for the poor and enable them to participate in formal decision-making processes.

- Capacity building.

The enhancement of abilities through investment in health, education and training for the purpose of becoming more productive.

- Social protection.

The creation of social insurance, social support or assistance, and social savings mechanisms and programs, and the promotion of traditional social safety nets.
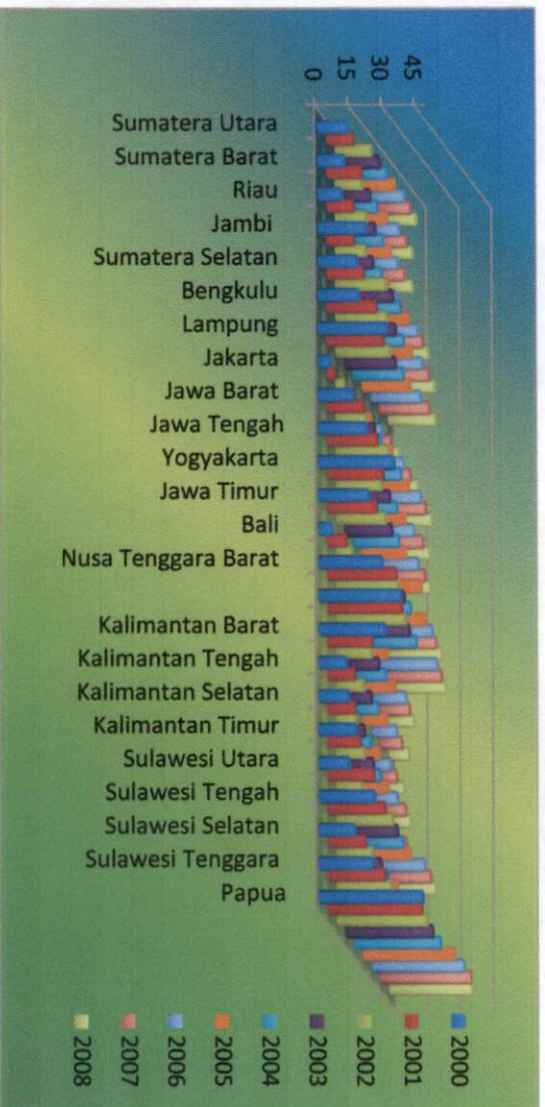
Figure 3. Percentage Rural and Urban Poor People in Selected Provinces

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3.2 International Trade and poverty Reduction in Indonesia

Indonesia was changing trade reform since year 1967 until present. At 1967 there is some tariff reduction, national law on foreign and domestic private investment was introduced, liberalization of capital account in the balance of payments and managed floating was adopted as the exchange rate system. Since the mid 1980s Indonesia has undergone comprehensive trade liberalization. By the rise of time, in 1998 Indonesia liberalized in foreign direct investment and trade.   Indonesia has undergone comprehensive trade liberalization, by participating in multilateral and regional trade arrangements and by conducting unilateral liberalization.

The most effective process of liberalization is unilateral. However, from Indonesia's experience, regional commitments and efforts have complemented the unilateral process. The multilateral process under the WTO has been important in placing some discipline on the types of trade and investment policies that a country like Indonesia could use. It has helped to keep the unilateral liberalization process on track and has imposed a discipline on a mutually agreed set of multilateral rules of the game.

Developing countries such as Indonesia have generally been latecomers to trade liberalization, but have found the gains from more open markets are substantial. These gains may be measured in terms of increased exports and diversification of exports, higher real incomes and consumption, expansion of employment, productivity and wage increases and access to new technologies and improved management of businesses. Stimulated by greater import competition, domestic firms

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have responded by seeking to cut costs, enhance incentives for workers and managers and striving to improve product quality and customer service.

Impact international trade in the long run, an increase in returns to labor and capital employed in one sector will attract more resources to this sector – thereby spreading the gains more widely. From the Stolper-Samuelson Theorem, we know that, if the benefiting sector is relatively intensive in unskilled labor, then the long run implications of a rise in the relative price of this sector's output will be to boost economy-wide unskilled wages, benefiting wage earners not directly employed in that sector.

Table 1. Comparing the WTO, APEC and AFTA

	WTO	APEC	AFTA
Nature of the Agreement	Formal negotiations and binding commitments; clear sanctions and dispute settlement mechanism	Voluntary;Concerted Unilateral liberalization	Formal negotiations and binding commitments; sanctions and dispute settlement mechanism are unclear
Regional Coverage	Worldwide	Regional (18 original, plus 3 new members)	Regional (6 original plus 4 new members)
Sectoral Coverage	Explicit on sectors such as agriculture, textiles and clothing, and services	The Bogor goal is not sector specific. The sectoral EVSL approach failed to materialize.	Little progress in sensitive sectors such as agriculture and motor vehicles.
Trade Liberalization Measures	Applied by and to all WTO members, different speed of reduction for developed and developing country members. Reductions and binding of border tariffs, export subsidy, and domestic support.	Open liberalism based on MFN (Most Favored Nation) basis. Average tariff reductions only.	Creation of preferential trading agreement among members Mostly tariff reductions, incorporated in the CEPT scheme.

Source: www.wikipedia

Poverty reduction is an increasingly important consideration in the deliberations over multilateral trade liberalization and it has been established as an important part of the Doha Development Round of WTO negotiations.

As a component of international trade, FDI is important to decrease poverty rate. FDI may have positive effects on poverty reduction mainly through three ways: (1) labor intensive economic growth with export growth as the most important engine, (2) technological, innovation and knowledge spillover effects from FDI-based firms on local economy, and (3) poverty alleviation government programs or projects financed by tax revenues collected from FDI-based firms. A larger presence of FDI is associated with a faster economic growth, and the latter is associated with a faster growth of employment, and a rapid reduction of poverty. But, whether this assumed relationship between economic growth, employment creation and poverty reduction can be true in reality, it depends on the assumption that the enhanced higher economic growth by FDI is labor intensive. This condition is appropriate with Indonesia condition because Indonesia is labor intensive.

By using panel data analysis, Milanovic (2005) finds that trade openness result in more regional inequality in India, Brazil, Indonesia, China and the United States. Marie Daumal (2010) Find that openness and FDI increase regional inequality in India because labor and capital migrate from poor states to rich one and FDI go mainly to developed states.

Figure 4. Unemployment Rate in Indonesia
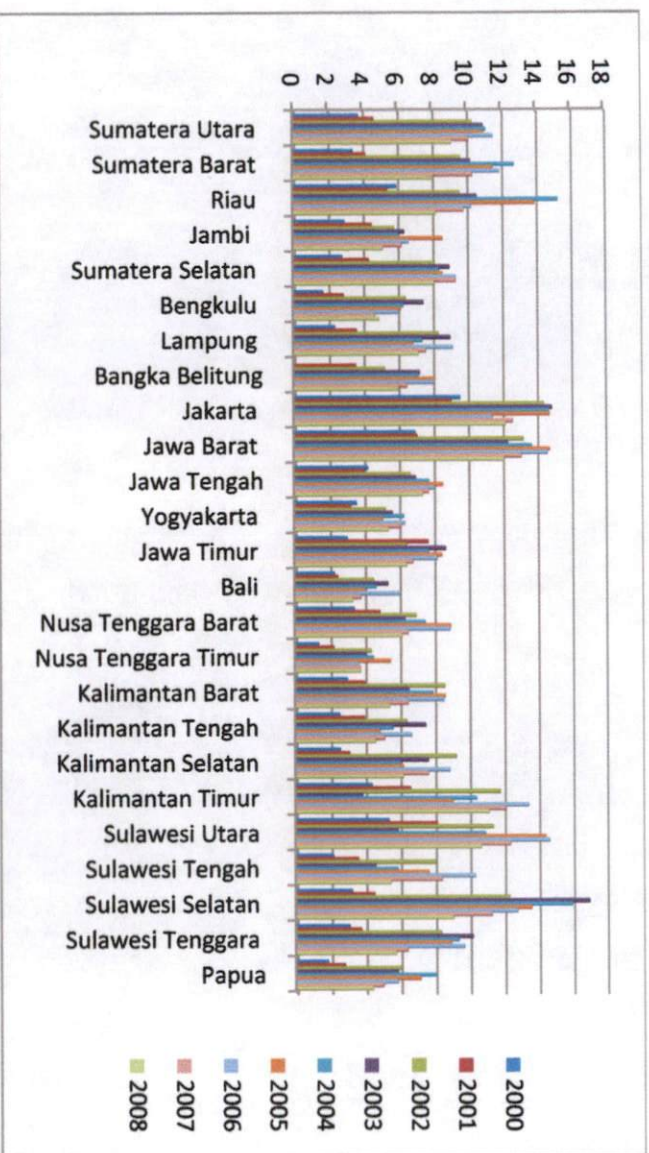
CHAPTER IV

THEORETICAL FRAMEWORK AND RESEARCH METHODOLOGY

4.1 Concept of International Trade

4.1.1 Stolper-Samuelson Theory

Stolper-Samuelson Theory is a theory which explains about linkages between international trade and poverty reduction. Most of author used this theory to analyzed impact of international trade toward poverty reduction. As first presented by Stolper and Samuelson (1941), it dealt with a very special framework with many restrictive assumptions, most notably that the economy consists of only two broad sectors, and that production uses only two factors (often labelled "capital" and "labor"). (J. Peter Neary, 2004).

Relative changes in output goods prices will drive the relative prices of the factors used to produce them. If the world price of capital-intensive goods increases, it will increase relative to the rental rate as well as decreasing the relative wage rate (the return on capital as against the return to labor). Also if the price of labor intensive goods increases, it will increase relative to the wage rate as well as decreasing the relative rental rate.

Generalization of the Stolper- Samuelson theorem does not contradict the basic prediction of international trade theory that economies facing fixed world prices will gain overall from tariff reductions. However, it highlights the potential for distributional conflict over trade policy. Unless compensation for income losses is

actually paid, there are always both winners and losers from any change in trade policy.

Among many applications, the Stolper-Samuelson theory has been used to address the "trade and wages" debate. This asks to what extent globalization in general, and increased imports from low-wage countries in particular, are responsible for widening the differential between skilled and unskilled wages in developed countries. With the two factors reinterpreted as skilled and unskilled labor, the simple version of the model is consistent with a widening differential. Leamer (1998) presents some evidence in favor of a Stolper-Samuelson chain of causation, though most authors have preferred to explain the fall in demand for unskilled labor by skill-biased technological progress. However, technology and trade are interlinked.

Feenstra (1998) and Jones (2000) author pointed that and develop a theory which is consistent with the empirical evidence and has a strong Stolper-Samuelson. Improved communications have allowed large firms to fragment their operations, moving more unskilled-labor-intensive stages of production to countries where unskilled wages are low, so lowering unskilled wages in developed countries while simultaneously raising skilled wages in developing countries.

For example Stolper-Samuelson theorem, consider the case of a country which is small in the world market for two goods, X and Y. X and Y are produced with fixed coefficient technologies in the two inputs, skilled and unskilled labor (S and U). Assume that market is perfect competition and factor markets no barriers to mobility

within a country. Let X is the skill-intensive good. Assume that both goods are produced in this country in equilibrium.

Under these conditions, price must equal unit cost (zero-profit condition). For the Y sector, this is easily written as:

$$P_y = w_s a_{sy} + w_u a_{uy} \qquad \dots \dots \dots \dots \dots \dots \dots \ (1.1)$$

$$w_s = \frac{P_y}{a_{sy}} - \frac{a_{uy}}{a_{sy}} w_u \qquad \dots \dots \dots \dots \dots \dots \dots \dots \ (1.2)$$

$$w_s = \frac{P_x}{a_{sx}} - \frac{a_{ux}}{a_{sx}} w_u \qquad \dots \dots \dots \dots \dots \dots \dots \dots \ (1.3)$$

Assume that the poor country is an exporter of the unskilled intensive good and importer of the skill intensive good.

Then:

$$PY = PY^* \rightarrow PX = (1+t)PX^* \qquad \dots \dots \dots \dots \dots \dots \dots \dots \dots .(1.4)$$

Then, removal of the tariff lowers the domestic price of the skill intensive importable X without affecting that of the exportable Y. The skilled wage falls in terms of both goods and the unskilled wage rises in terms of both goods. This is the source of the conventional statement that "trade theory" suggests that liberalization will raise the wages of the unskilled in unskilled abundant countries.
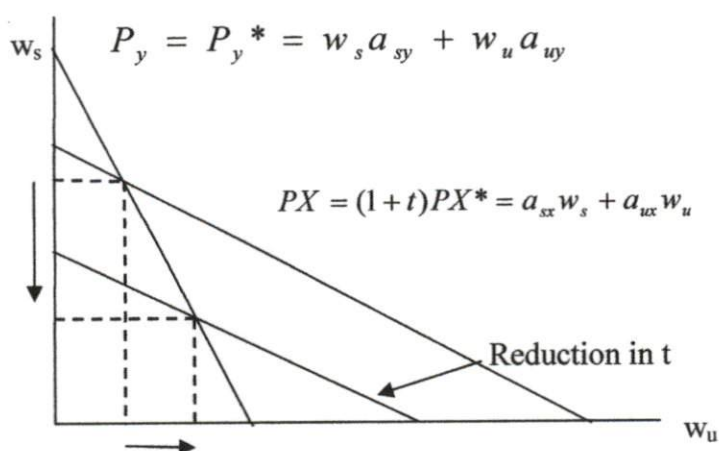
Figure 5. Trade Liberalization and Factor Price - Stolper Samuelson Theorem

Now, it is easiest to introduce the idea of intermediates here in a model in which the intermediate is a non-competing good that also enters with a fixed coefficient (one unit of intermediate per unit of output, in the X sector). As before, let PX = (1+t) PX* be the domestic price of the importable good. But now allow for an imported intermediate with price PZ* subject to a tariff tZ. Then the domestic price must cover both payments to factors and the cost of intermediates, hence we must amend the zero profit condition of X to read:

$$(1+t)P_x^* = w_s a_{sx} + w_u a_{ux} + (1+t_z)P_z^* \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots (2.1)$$

That is, the domestic price now must suffice to pay both domestic factors plus the tariff inclusive price of intermediates. Rearranging, this also yields:

$$(1+t)P_x^* - (1+t_z)P_z^* = w_s a_{sx} + w_u a_{ux} \qquad \dots\dots\dots\dots\dots\dots\dots\dots (2.2)$$

A tariff on imports of the final good is protective (yields more revenue to compensate domestic factors per unit output); a tariff on imports of the intermediate import is anti-protective (yields less revenue to compensate domestic factors per unit output).

The reduction in tariff on the intermediate good Z shifts the unit-cost curve outwards (since given the price of X, for each value of w_s, w_u will have to rise), unlike the reduction in tariff on final good X.

This would lead to an increase in the returns to high-skill labor, and a decrease in the returns to low-skilled labor and hence an increase in wage inequality. Thus, it is possible that trade liberalization benefits the skilled labor in poor countries if liberalization takes place in the intermediates.

$$P_y = P_y{}^* = w_s a_{sy} + w_u a_{uy}$$

$$PX = (1+t)PX^* = a_{sx} w_s + a_{ux} w_u + (1+t_z)P_z{}^*$$

Reduction in t_z

Figure 6. Trade Liberalization in Intermediates and Factor Price

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Reduction in t_z

Figure 6. Trade Liberalization in Intermediates and Factor Price

4.1.2 Bergson-Samuelson Theory

"Bergson-Samuelson" social welfare function (SWF) takes the following general form:

$$W = W(U1, U2, .., UH)$$

So that "society's" welfare denoted, W, is merely a function of the utilities of its constituent members, Uh, h = 1, 2, .., H, where H are the number of households in society. This is what Amartya Sen (1977) later called a "welfarist" social welfare function in that society's welfare is dependent wholly on the utility of households and not, say, on the quantities of goods involved.

This function is usually made a little more specific by attributing to it an ethical property, namely that social welfare increases when one individual becomes better off with no one else being worse off (we call it "Pareto Principle"). In international trade were to make everybody better off, we could conclude that the international trade increases social welfare.

On the special assumption that our country under consideration is too small to affect its terms of trade and on the assumption that the price ratios abroad differ from those that would prevail at home under autarky. (P.A Samuelson)
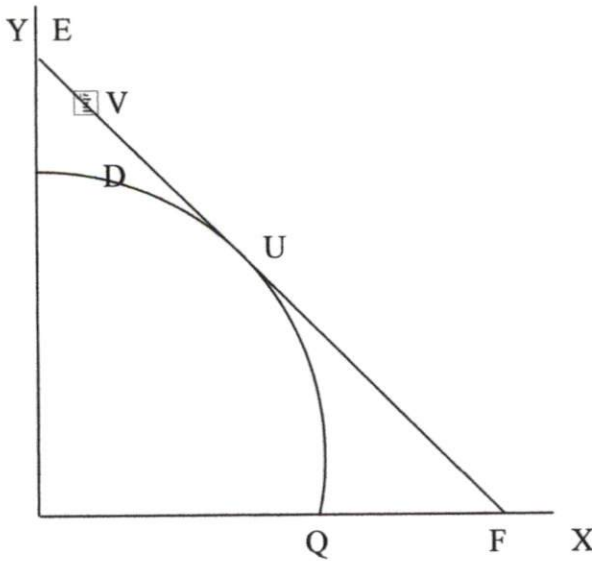
Figure 7. Autarky Condition

With no trade, we end up at D. With free trade, production ends up at U, consumption

at V, with UV the vector of algebraic imports. Heavy line EUF represents our

"consumption possibility frontier" with some trade. With autarky the consumption

possibility frontier is given by the production locus PDUQ. Since the trade frontier

lies everywhere north-east of the autarky frontier, our society can have more of all

goods (and less of all irksome inputs) with some trade. It is in this sense that trade

makes us potentially better off.

Now, let we see comparison between the budget equation in the autarkic state

and the budget equation with free trade.

a. The Budget Equation in the Autarkic State

Consider now an individual endowed with L_0 units of labor. His budget in the autarkic state is:

$$wLo = p_x X + p_y Y \qquad \dots\dots\dots\dots\dots\dots\dots (3.1)$$

However,

$$p_x = wa_x \quad \text{and} \quad p_y = wa_y \qquad \dots\dots\dots\dots\dots\dots (3.2)$$

Substituting eq. (1) into eq. (2)

$$Lo = a_x X + a_y Y \qquad \dots\dots\dots\dots\dots\dots\dots (3.3)$$

Equation (2.3) is the individual budget line in the autarkic state.

The individual chooses that bundle of X and Y which maximizes his welfare, as illustrated in figure 3.

b. The Budget Equation with Free Trade

Suppose now that our economy can buy and sell unlimited quantities of X and Y in the international market at the relative price $p_0 > a_x / a_y$. What happens to the welfare of our typical individual with this new development? Refer to eq. (1). What are the prices p_x and p_y equal to now?.

Since our economy specializes completely in the production of X (because $p_0 > a_x / a_y$), p_x continues to be given by domestic average cost of production wa_x. But what about p_y?

This cannot be determined by the domestic average cost, because Y cannot profitably be produced at home. We must necessarily have: $p_y <$ domestic average cost of production $= wa_y$.

How is p_y determined then?

By definition, $p_0 = p_x / p_y$. Thus,

$$p_y = \frac{p_x}{p_0} = w\frac{a_x}{p_0} \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4.1)$$

Substituting again p_x and p_y into eq. (1) and simplifying we get:

$$Lo = a_x X + \frac{a_x}{p_o} Y \qquad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (4.2)$$

Equation (4.2) is the new budget equation of our typical consumer (with free trade).
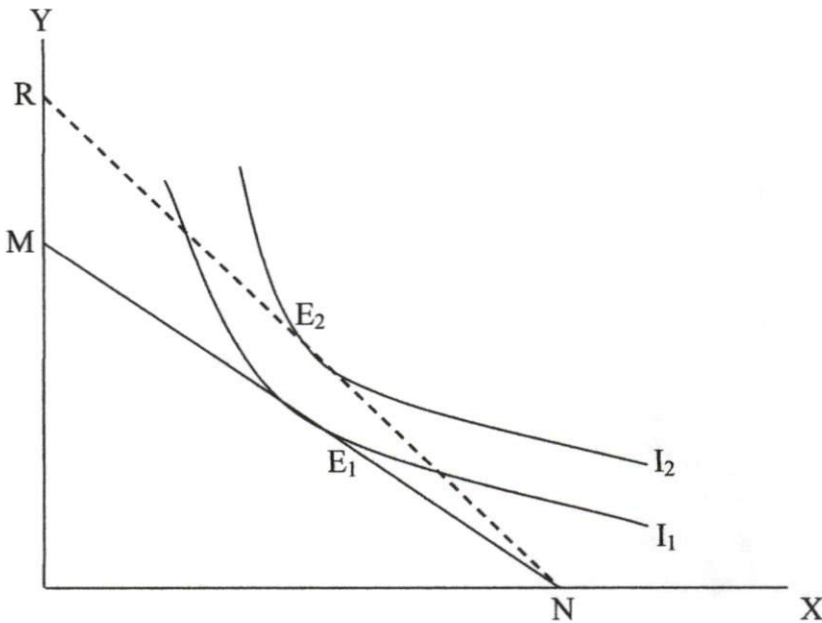
Figure 8. Free Trade Condition

In autarkic state, budget line is in MN and indifference curve is I_1. After free trade, budget line shift to the right from MN to RN and new indifference curve is I_2. Shifting in indifference curve means increasing welfare for a typical worker from E_1 to E_2.

Trade reform has long been part of the arsenal of policies used to promote economic efficiency, the development of new markets, and growth. Perhaps surprisingly, even after more than fifty years of trade negotiations, there is still significant protection in the world economy and thus scope for further benefits once protection is removed. Protection persists because it is a convenient and nontransparent way for governments to direct economic benefits to particular groups. Although trade liberalization raises the average standard of living in the medium term, groups that had been favored by protection will see their incomes decline, and the resulting restructuring of the economy may create economic dislocations in the short term.

Theoretically (sumber), reform towards international trade liberalization could affect positively or negatively individual legal firms in four major ways:

1. Increasing competition. Lower import tariffs, quotas and other non-tariff barriers have the effect of increasing foreign competition in the domestic market, and this is expected to push inefficient/unproductive local firms to try to improve their productivity by eliminating waste, exploiting external economies of scale and scope, and adopting more innovative technologies, or to shut down. The openness of an economy to international trade is also

seen as increasing plant size (that is, scale efficiency), as local firms adopt efficient technologies, management, organization and methods of production. (Tybout (1992) and Bonaccorsi (1992)).

2. Lowering production costs due to cheaper imported inputs. Local firms benefit from lower input costs, thereby allowing them to compete more effectively in both domestic markets against imports and in export markets.

3. Increasing export opportunities. Opening up to international competition will not only induce increased efficiency in domestic firms but it will also stimulate their exports.   (Aggarwal (2001) and Tybout and others (1991))

4. Reducing availability of local inputs. Eliminating export restrictions on unprocessed raw materials will increase exports of the items at the cost of local industries.

Recent attempts to persuade developing countries to accept further trade liberalization have led to new inducements in the form of 'aid for trade' (A4T). Trade liberalization advocate Jagdish Bhagwati (2005) has made three revealing arguments for A4T. First, to compensate governments for their loss of tariff revenue, which can account for up to half of total tax revenue in the poorest countries. Second, to compensate producers, workers and others for the loss of uncompetitive production capacities in agriculture, industry and even services. Third, to develop new internationally competitive productive capacities and capabilities. Such recognition of the need to compensate for the loss of revenue and economic capacities.

Table 2. Three phases of foreign trade and investment reforms in Indonesia since 1966

Period	Phase	Most important measures
1967-1980	I	• Some tariff reduction • Removal of quantitative restrictions on limited import • National law on foreign and domestic private investment was introduced • Liberalization of capital account in the balance of payments • Managed floating was adopted as the exchange rate system.
1985-1997	II	• Simplifying export-import procedures • Limited agricultural liberalization • Across-the-board tariff reduction • Quantitative restrictions on some imports were removed, especially import licensing and import monopolies • Approval procedures for foreign investment were simplified and limitations on FDI were abolished, especially for export-oriented investments (including more liberal treatment with regard to foreign ownership) • Exemption from duties and VAT was given to export-oriented investments • Banking system deregulation.
1998 Onwards	III	• Financial restructuring programme, • Foreign trade and investment liberalization • Elimination of all cartels in all sectors • Agricultural liberalization • Removal of various import licensing schemes such as the import producer licences for iron and steel productsRemoval of local content requirements, reduction of tariffs on imported cars and components, and simplification of licensing procedures • Elimination of all export restrictions and taxes • Introduction of anticorruption and competition laws • Approved Importer and approved sole agent licences, which were applied to various industries from food-related subsectors to lubricants • Liberalization of market telecommunications, industrial services, tourism, financial services and banking • Removal of local content regulations under the Agreement on Trade Related Investment Measures (TRIMs), with the local content requirements for motor vehicles.

Sources: Pangestu (1996), Feridhanusetyawan, and others. (2000), James (2001), Firdausy, and others (2000), Iqbal and Rashid (2001), and Magiera (2001), Also see Department of Industry and Trade <www.Deperindag.go

4.2 Concept of Poverty

Poverty is where people have unreasonably low living standards compared with others; cannot afford to buy necessities, such as a refrigerator for example; and experience real deprivation and hardship in everyday life." (McClelland 2000). Internationally, people who lack food and shelter for minimal needs are said to be living in absolute poverty. There are high rates of poverty among unemployed people, sole parent families, and people with disabilities.

There is some ways to compute poverty. Poverty computable is necessary to know how much people living below poverty line. Ways to compute poverty is by using income poverty. Income poverty can be measured in different ways. It is often expressed in relation to a poverty line, a defined income level which is updated regularly. Poverty divided into two: relative and absolute. *Relative* if it is determined annually with respect to the population's average level of income and poverty *absolute* if it is determined with respect to the monetary value of a bundle of necessary goods and services, updated every year to take account of the variation in prices and bundle composition.

Poverty Measurement

Poverty measurement is important to calculate how much poverty rate in a country or provinces. There is 3 ways to measure poverty according to Marie Daumal:

1. Headcount Poverty Indices (HPI) are the most popular, easiest to understand and simplest to compute.

They measure, the percentage of the population falling below the poverty line. Capture only one dimension of poverty within a country.

$HPI = P / N$

Where: P is the number of units with income (or consumption) below the poverty line z, N is the total number of individuals.

2. Gap Poverty Index (GPI), measures the average level of consumption of the poor with respect to the poverty line.

$GPI = 1 - (yp / z)$

Where: yp is the average income (or consumption) of the poor,

z is the poverty line.

3. Foster-Greer-Thorbecke (1984) family of indices (*FGT*), which simultaneously consider the percentage of the poor, their average consumption and the distribution of consumption among the poor.

$$FGT = \frac{1}{nz^2} \sum_{i=1}^{q} gi^2$$

Where: *gi* is the income shortfall of the *i*-th household,

q is the number of poor households (with income not exceeding the poverty line *z*),

n is the total number of households

In 2007 23.6 million rural Indonesians were living below the national poverty line, 1 million less than in 1996. Poor people represent 20 per cent of the rural

population and 11 per cent of the total population. But the overall national poverty rate masks the large number of 'near-poor' people who live just above the poverty line and are at risk of sliding below that line into poverty. In 2004 about 30 per cent of the population was living above the national poverty line, but they were subsisting on less than two dollars a day. For this reason poverty reduction strategies need to focus on increasing the incomes of both poor and near-poor people.

As one of the most populous countries in the world, poverty is a significant social issue for Indonesia. The national economic crisis in 1997 caused the poverty level within Indonesia to increase significantly. This crisis also triggered various social-political problems which complicated and prolonged these initial consequences. As a result, in Indonesia today, democracy, poverty and injustice have become the central themes within the development discourse. Although government reform has already taken place in Indonesia, it has had no significant impact on the poor population, which has been growing consistently. This is primarily because many in the population have had insufficient access to the they need to live. This implies that in Indonesia, poverty is a structural problem with roots in policies regarding development. These policies are based on a development paradigm that prioritizes economic growth rather than even distribution of resources.

Table 3. Number and Percentage of Poor in Indonesia from 1998-2008

YEAR	Number of Poor Population (million)			Percentage of Poor Population (%)		
	Urban	Rural	Urban + Rural	Urban	Rural	Urban + Rural
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1998	17,60	31,90	49,50	21,92	25,72	24,23
1999	15,64	32,33	47,97	19,41	26,03	23,24
2000	12,30	26,40	38,70	14,60	22,38	19,14
2001	8,60	29,30	37,90	9,76	24,84	18,41
2002	13,30	25,10	38,40	14,46	21,10	18,20
2003	12,20	25,10	37,30	13,57	20,23	17,41
2004	11,40	24,80	36,10	12,13	20,11	16,66
2005	12,40	22,70	35,10	11,68	19,98	15,97
2006	14,49	24,81	39,30	13,74	21,81	17,75
2007	13,56	23,61	37,17	12,52	20,37	16,58
2008	12,77	22,19	34,96	11,65	18,93	15,42

Source: BPS

4.3 International Trade and Poverty Reduction

The first organized effort to do international trade within a single framework was establishment of Bretton Woods Institutions. Albeit, efforts to structure International Agreement on Trade and Tariff (GATT) trade body. World Trade Organization (WTO) is new face of GATT and is pursuing the same idea of liberalized trade. The salient feature of all these organizations and agreements is, "free trade is beneficial for all and one model fits to all".

General trade can work at three basic levels to boost a country's growth and reduce poverty. First, the right policies encourage trade expansion in general, which

helps generate income and provides a resource base for development. Second, governments can promote exports specifically in sectors that maximize jobs and income. Third, they can help the poorest people – those who hardly participate in the formal economy – to become active participants in export activities.

The causes of poverty are many, complex and interactive. They are divided into four broad categories:

- Economic;

- Situational;

- Social;

- Political

The linkages that exist between trade, trade policy, and poverty according to L. Alan Winters (2000) identify several key linkages, which are reiterated in large part by Bannister and Thugge (2001). Potential links include changes in:

(a) The price and availability of goods;

(b) Factor prices, income, and employment;

(c) Government transfers influenced by changes in revenue from trade taxes;

(d) The incentives for investment and innovation, which affect long-run
    economic growth;

(e) External shocks, in particular, changes in the terms of trade;

(f) Short-run risk and adjustment costs.

The factor price, income, and employment link (b) may have the greatest relative importance of all the links between trade and poverty. (Jeffrey J. Reimer,

2002). And in this analysis, I would like to make a link in point b (factor prices, income, and employment) and point d (the incentives for investment and innovation, which affect long-run economic growth).

The presence of this Magnification Effect (due to Jones, 1965) in theoretical trade models is one reason why trade economists tend to focus on factor market effects when analyzing trade liberalization and poverty. Some (e.g. Winters, 2000) have argued that the practical relevance of the Stolper-Samuleson/Magnification result is negligible, since it rests on so many restrictive assumptions as to be a special case. Nevertheless, this theoretical insight underscores the importance of considering factor earnings effects when examining the relationship between trade liberalization and poverty.

International trade can affect the welfare of the poor by:

1. Changing the prices of tradable goods and improving access to new products;

2. Changing the relative wages of skilled and unskilled labor and the cost of capital, thereby affecting the employment of the poor;

3. Affecting government revenue from trade taxes and thus the government's ability to finance programs for the poor;

4. Changing incentives for investment and innovation and affecting economic growth;

5. Affecting the vulnerability of an economy to negative external shocks.

Developing countries can face challenges of poverty reduction by doing something true in term of trade and policy makers have good strategies to face the problem. Policy-makers responsible for preparing development strategies do not often pay enough attention to integrating trade in their strategies. While there's a lot of rhetoric about how trade acts as an engine for growth, strategies still hamper, rather than promote, trade in many developing countries. And also, few blueprints exist that show countries how to reduce poverty through trade.

In addition, export sectors that could do most to reduce poverty aren't always included in national export strategies. To reduce poverty, it is the pattern of growth generated through trade that matters. Therefore, growth must also occur in sectors where small producers can be integrated into the value chain of products and services.

Finally, poor communities do not usually have the business skills necessary to break into global trade. When it comes to seizing new business opportunities, poor people can suffer the disadvantages of little or no education, business training or connections to those who can help them start or expand a business in the formal economy.

Poverty is not just the lack of income. Poverty is a matter of a lack of access to basic social services, shelter, social protection, and basic security. In these broader aspects of poverty, Indonesia has also made significant progress. Yet clear challenges remain. The indicators of human development vary by region. They do not always coincide with the incidence of income poverty. There is a need for measures that specifically address the differential provision of public services across regions.

In Indonesia, as in many developing countries, open unemployment has always been low, since the poor cannot afford to remain unemployed and the number of unemployed is large. Unemployment is not directly related to poverty as the highest levels of unemployment are among first-time labor market entrants and the educated. During the crisis, unemployment rose faster among these groups. Underemployment is significantly higher among the poor, especially in rural areas, and among workers in agriculture, and some service sectors. The resumption of growth and macroeconomic stability is key to absorbing school leavers, a source of social instability, into the labor force and promoting income generating opportunities for the poor.

Furthermore, based on introduction the determination of international trade and poverty reduction are: openness, FDI, unemployment, and consumption. Now, we will see how the relationship each of them toward poverty reduction is.

a. Trade Openness

Varied evidence supports the view that trade openness contributes greatly to growth. Cross-country regressions of the level of income on various determinants generally show that openness is the most important policy variable. Regressions that attempt to explain the variation in countries' growth performance through time also show a central role for increases in openness in promoting growth. We would not find these regression results particularly convincing if there were not substantial industry and firm-level research documenting the various ways in which openness contributes to export, productivity and ultimately income growth.

Increasing the growth rate of average per capita income is the most important way to reduce poverty over time. If trade openness sharply increases inequality, however, then even if it did promote growth it might promote growth of a kind that is particularly unhelpful for the poor.

In theory, the openness of an economy is the degree to which nationals and foreigners can transact without governmentally imposed costs (including delays and uncertainty) that are not imposed on transactions among domestic citizens. Tariffs and nontariff barriers, domestic content requirements, health and safety requirements (or inspection delays) above and beyond those imposed on the domestic products raise the cost of buying from abroad. Openness is desirable because relative international prices reflect the international marginal rate of transformation (in a competitive international economy) and should be equated with domestic prices for an efficient allocation of resources.

Some studies are more optimistic about the impact of trade liberalization. They include a direct and positive relationship between trade openness and total factor productivity. This relationship makes sense: openness may accelerate the transmission of technologies. Empirical studies broadly confirm the existence of this link, but confirming it in this kind of econometric study raises a number of conceptual and empirical difficulties. It is extremely difficult today to measure precisely the intensity of this relationship in all sectors and countries. Furthermore, a direct relationship between trade openness and total factor productivity has not been established on a microeconomic basis. As a result, integrating this relationship

automatically amplifies expected benefits but does not show the channels by which trade integration raises factor productivity.

b. Foreign Direct Investment

Investment can be encouraged by creating a stable political environment, combating corruption, creating jobs, enforcing contracts and by protecting property rights. Foreign direct investment (FDI) has been recognized as an important resource for economic development. Many people argue that the flows of FDI could fill the gap between desired investments and domestically mobilized saving (Todaro and Smith (2003), Hayami (2001)).

Rapid economic developments over the past three decades change view of many developing and least-developed countries to the importance of FDI through an aggressive campaign of investment promotions to attract investment. However, the important role of FDI to industrial development much depends on countries policies reforms (Wint and William, 2002) and other internal factors as viewed by Gastanga et.al (1998), Smarzynska and Wei (2000) and Wei and Wu (2001). Gastanga et.al (1998) examines the issues from the perspective of host country reform specifically involving the majority of less-developed countries. However, the results proposed that investment climate and effectiveness of individual policy reforms are complement rather than substitutes.

The increase in the degree of integration of world capital markets has been accompanied by a significant rise in private capital flows to developing countries.

As shown in figure 5, foreign direct investment to developing countries started growing in the 1980s and expanded at an accelerated rate after 1990, whereas portfolio flows (which consist of equities, bonds and certificates of deposit) increased until the mid-1990s – reflecting, in effect, the increased incidence of financial volatility and currency crises in the last few years.
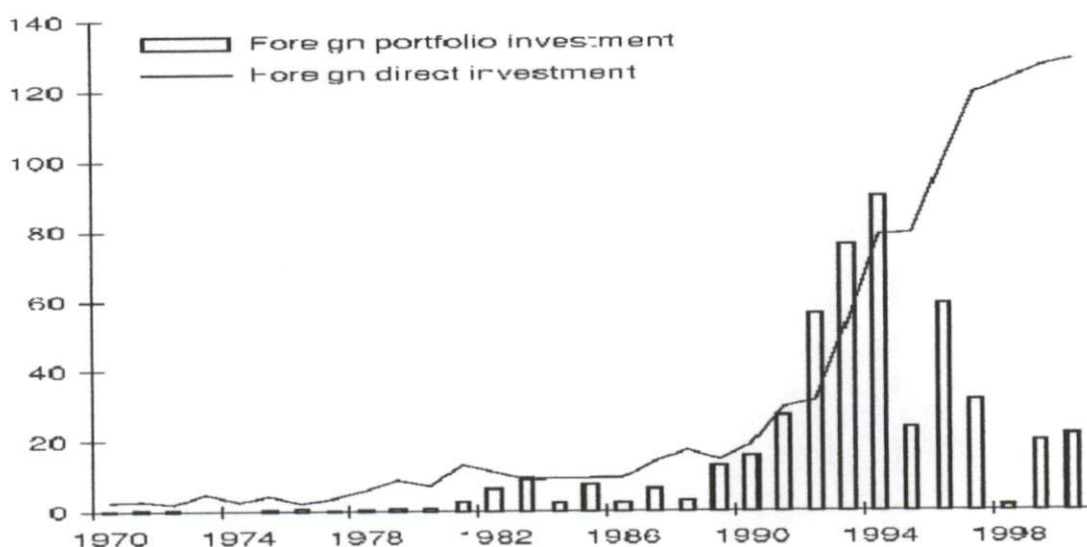
Figure 9 . Net Flows of Investment to Developing Countries, 1970–2000 (in billions of US dollars).

The ability to draw upon the international pool of resources that financial openness gives access to may also affect domestic investment and growth. In many developing countries, the capacity to save is constrained by a low level of income. As long as the marginal return from investment is at least equal to the cost of borrowed capital, net foreign resource inflows can supplement domestic saving, increase levels of physical capital per worker, and help the recipient country raise its rate of economic growth

and improve living standards. These potential benefits can be particularly large for some types of capital inflows, most notably foreign direct investment (FDI).

c. Unemployment

Trade theory predicts how trade liberalization will affect wages and employment under very specific conditions. In practice, these conditions do not often hold, and for a more general analysis, we have to rely on empirical studies

Factors that will directly affect the way trade liberalization can change the wages and employment of the poor is how flexible labor markets are will determine whether the effects of trade reform translate into changes in employment or wages. If firms are constrained by labor regulations from reducing their workforces, most of the adjustment to changes in relative prices of outputs will be reflected in changes in real wages. If minimum wage legislation prohibits downward adjustments in wages but labor mobility is high, however, adjustment will take place through changes in employment.

d. Consumption

Household consumption patterns may be affected by changes in prices of goods and services. Whether these changes are positive or negative depends on the relative balance between price and profit effects. International trade may result in lower prices of goods and services because of increased import-induced competition. In this case, household consumption possibilities could improve.

4.4 Research Design

This research is organized in a quantitative and qualitative type of research. Data used in this paper is relating to the international trade and rate of poverty reduction. For simplicity, I take just analysis in Indonesia case but I have some guidance from some literature review which was analyzed about this before. It also type of descriptive analysis.

There are several reasons why I choose Indonesia. I choose Indonesia because in Indonesia many people still living on poverty line especially in Java and Papua. In Java, inequality of income distribution is high and in Papua still low of human resources capital and the natural resources in that province is not explore optimally yet. So that, I interested to choose my own country as a wish I could be give little contribution to the reducing of poverty in Indonesia. At least, I know what is the barrier and advantages that we get after doing international trade toward poverty reduction and social welfare in Indonesia.

A variety of methodologies have been proposed to analyze the international trade and poverty issue.

1. Methodological classification is for studies that undertake *cross-country regression analysis*. These studies test for correlations among trade, growth, income, poverty, and inequality variables observed at the national level.

2. Category encompasses a wide array of *partial-equilibrium* and/or *cost-of-living* approaches. These studies are typically based on household expenditure

data, and generally emphasize commodity markets and their role in determining poverty impacts, or at least as a measure of poverty across time.

3. Category all involve some form of *general equilibrium* model that accounts for commodity, terms of trade, and factor market effects. These studies are usually based on a disaggregated economy wide Social Accounting Matix.

4. Category represents a relatively recent approach – general equilibrium simulation coupled with some form of post-simulation analysis based on household survey data. These studies may be thought of as *micro-macro synthesis*. While the term "micro-macro" has been used differently in other contexts, in this paper it is meant to refer to the sequential linking of a model based on micro-level data with a model based primarily on macro-level data.

Thus, in this analysis effectiveness of international trade toward poverty reduction in Indonesia, writer will be use first methodologies *cross-country regression analysis* but in panel data of regional (each province) by GLS.

According to Jeffrey J. Reimer (2002), pointed out the cross-country regression approach nevertheless has a number of advantages for understanding the links between trade and poverty. First of all, it enables the use of traditional statistical tools for *testing* results and hypotheses, as opposed to only making predictions. Secondly, cross-country regression results are typically much more general than the country-specific results of many applied simulation models. Thirdly, cross-country regression may be able to account for some of the dynamic aspects of trade reform that are missed by static simulation models.

According to Sinha (2000) which states that the GDP growth has three growth components, namely; trade growth, population growth and investment growth. The volume of trade (import plus export) is used as proxy of openness. He derived the following equation:

$YG = b0 + b1TG + b2IG + b3PG + e$

Where: YG refers to GDP growth,

TG to trade growth – proxy for openness –,

IG to Fixed Investment growth and PG to population growth,

e is the error term.

According to Rajinder Kumar and Arup Mitra (2009) in cross-country analysis, following three equations, which form a simultaneous equation system:

$GRGDPC = F(LEXP, INDUS, TRD, GPCF, IMPWAT)$

$LEXP = G(GRGDPC, BRSKILL, IMPSAN, IMPWAT, PRIM, HEALEXP)$

$POV = H(GRGDPC, LEXP, TRD, GPCF, PRIM, FERTIL)$

Where: GRGDPC is economic growth taken in terms of per capita gross domestic product,

LEXP is life expectancy at birth,

POV is the incidence of poverty.

The other exogenous variables:

- share of manufacturing in total GDP (INDUS),

- share of merchandise trade and services in total GDP (TRD),

- gross private capital flows as a percentage of GDP (GPCF),

- percentage of population with access to improved water source (IMPWAT),

- percentage of population with access to improved sanitation facilities (IMPSAN),

- birth attended by skilled staffm(BRSKILL),

- primary education completion rate (PRIM),

- health expenditure incurred by the government as a percentage of GDP (HEALEXP),

- fertility rate (FERTIL).

(Chao-His Huang) Author was analyzing the relationship between poverty and various aspects of openness, use unbalanced panel data sets with both time series and cross-section dimensions and apply the fixed effect method to estimate parameters of interest. The basic empirical model follows that of Dollar and Kraay (2002, 2004), specifically the control variables include the sum of imports and exports divided by GDP (TRADE), the ratios of inward FDI and outward FDI to GDP (FDIIN and FDIOUT), and the share of government final consumption expenditure in GDP (GOV).

The basic empirical model follows that of Dollar and Kraay (2002, 2004) and is specified as: $\ln\left(y_{ct}^{p}\right) = \alpha_0 + \alpha_1 \ln\left(y_{ct}\right) + \beta' x_{ct} + \mu_c + \varepsilon_{ct}$

Where: c and t respectively index countries and years,

(y_{ct}) is the logarithm of mean income (Ln(PCGDP)),

x_{ct} is a vector of control variables.

The error term ε_{ct} is assumed to be independently distributed over countries and may be correlated with the explanatory variables,

μ_c captures unobserved country effects.

So, model for this thesis adopt Dollar and Kraay model:

$$P_{i,t} = \beta_0 + \beta_1 TO_{i,t} + \beta_2 FDI_{i,t} + \beta_3 U_{i,t} + \beta_4 C_{i,t} + \varepsilon_{i,t}$$

Whereas:

$P_{i,t}$ = percentage of poor people in province i at year t

$TO_{i,t}$ = percentage of trade openness in province i at year t

$FDI_{i,t}$ = percentage of foreign direct investment in province i at year t

$U_{i,t}$ = percentage of unemployment rate in province i at year t

$C_{i,t}$ = percentage of consumption in province i at year t

$\varepsilon_{i,t}$ = error disturbance

4.5 Hypothesis Test

1. T-test

This hypothesis test is useful in order to test the influence of independent variable or to test the significance of independent variables to dependent variables.

2. F-test

This test is useful in order to test the influence of all independent variable together to dependent variable in model. If Ftest > Ftable, it means that independent variable together significantly affect dependent variable.

3. Determination Coefficient (R^2)

This coefficient is useful to know the ability of model in explaining variation of dependent variable. Determination coefficient is to measure the regression line does it gives total variation percentage in dependence variable (Y) which is explained by independence variables (X). The biggest R^2 value means that the biggest variation of dependence variables that can be explained by independence variable.

$$R^2 = \frac{\sum \left(\hat{Y} - \bar{Y} \right)^2}{\sum \left(Y_t - \hat{Y} \right)^2}$$

The limitation of R^2 is $0 \leq R^2 \leq 1$. If R^2 is equal to 1 that mean there is a perfect relationship between independent variable with dependent variable. Then, if R^2 is equal to 0 that mean there is no relationship between independent variable with dependent variable.

4.6   Panel Data Analysis

4.6.1 Panel Data Analysis Overview

Panel data analysis endows regression analysis with both a spatial and temporal dimension. The spatial dimension pertains to set cross-sectional units of observation. These could be countries, states, counties, firms, commodities, groups of people, or even individuals. The temporal dimension pertains to periodic observations of a set of variables characterizing these cross-sectional units over a particular time span. An example of a panel data set is a collection of 3 countries for which there are the same economic variables—such as, personal expenditures, personal disposable income, and median household income, per capita income, personal disposable income, population size, unemployment, and employment-collected annually for 10 years. This pooled data set, sometimes called time series-cross sectional data, contains a total of 3*10=30 observations. In other words, the 3 countries are followed for 10 years sampled annually.

4.6.2 Types of Panel Data

Types of panel data in according to Robert A. Yaffee (2003)

1. The Constant Coefficients Model

One type of model has constant coefficients, referring to both intercepts and slopes. In the event that there is neither significant country nor significant temporal effects, we could pool all of the data and run an ordinary least squares regression model. Although most of the time there are either country or temporal

effects, there are occasions when neither of these is statistically significant. This model is sometimes called the pooled regression model.

2. The Fixed Effects Model

Another type of panel model would have constant slopes but intercepts that differ according to the cross-sectional (group) unit—for example, the country. Although there are no significant temporal effects, there are significant differences between countries in this type of model. While the intercept is cross-section (group) specific and in this case from country to country, it may or may not differ over time. These models are called fixed effects models.

3. The Random Effects Model

Prof. William H. Greene calls the random effects model a regression with a random constant term (Greene, 2003). One way to handle the ignorance or error is to assume that the intercept is a random outcome variable. The random outcome is a function of a mean value plus a random error. But this cross-sectional specific error term, $_i v$ which indicates the deviation from the constant of the cross-sectional unit –in this example, country—must be uncorrelated with the errors of the variables if this is to be modeled. The time series cross-sectional regression model is one of statistical model that could be used in identifying a random effect.

4.7 Generalized Least Squared Assumption test

To processing panel data by using GLS, there is several ways must to do:

1. Writer begins with test panel data by using OLS (Ordinary Least Square). But because in this thesis using panel data where as heterogenic data, using OLS is not appropriate to heterogenic data. (See appendix table 4)

2. By using GLS (Generalized Least Square), first should be estimate fixed effect or random effect. (See appendix table 5)

3. To identify fixed effect, testing by likelihood ratio. (See appendix table 6)

4. To identify random effect, testing by Hausman test. (See appendix table 7)

5. After know fixed effect or random effect, estimates by using GLS for 24 provinces in Indonesia.

4.7.1 Heterocedasticity Test

If the data can be processing by using GLS that means the data do not has problem with heterocedasticity and the software directly could be identify it.

4.7.2 Autocorrelation Test

Autocorrelation exist if obstacle value in certain period has interlinked with obstacle period in last period. The simple autocorrelation test is test by Durbin-Watson (DW). If DW test around 2, that means model do not has autocorrelation problem (Gujarati, 1997). Limitation by DW happens in big observation. So that used trial and error toward regression by doing regression iteration to find best DW from that model.

| Positive Autocorrelation | Hesitant Area | No Autocorrelation | Hesitant Area | Negative Autocorrelation |

| 0 | dL 1.046 | dU 1.535 | 2 | 4-dU 2.465 | 4-dL 2.954 | 4 |
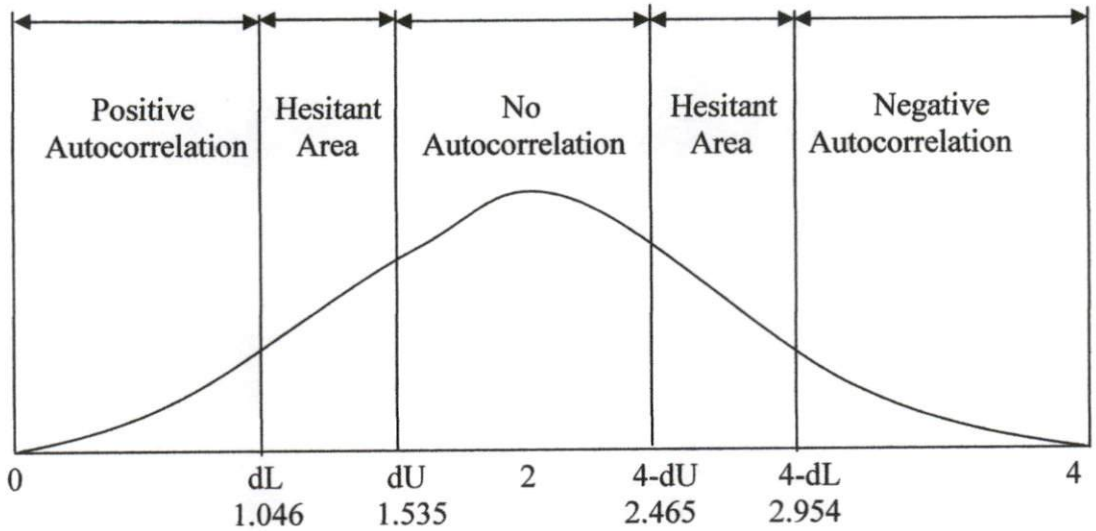
Figure 10. Accepted and Rejected Area in Durbin-Watson Test

4.8 Data Sources

Data is taken from several sources because I have planned that in this analysis use secondary data. Data is taken from Statistic Bureau (BPS) Indonesia and Bank of Indonesia (BI). Panel data that used to econometrics analysis is time series years 2000-2008 and cross section 24 provinces of 33 provinces in Indonesia. All of data

are needed for measuring analyze effectiveness of international trade to the poverty reduction in Indonesia. For the next step data will be processing by using statistical software. After that, we can see how impact of international trade toward poverty reduction in Indonesia. Either variable is significant or not and variable has significantly positive or negative.

Table 4. Data Sources and Collecting Data

Data	Unit	Data Sources	Collecting Data
Poverty	%	Central Bureau of Statistics	Indirect
Trade Openness	%	Central Bureau of Statistics	Indirect
Foreign Direct Investment	%	Indonesian Bank	Indirect
Unemployment	%	Central Bureau of Statistics	Indirect
Consumption	%	Central Bureau of Statistics	Indirect

CHAPTER V

EMPIRICAL RESULT AND ANALYSIS OF EFFECTIVENESS

INTERNATIONAL TRADE TOWARD POVERTY REDUCTION IN

INDONESIA

5.1 Regression Analysis

In this chapter analyzed empirical result relationship between poverty toward openness, FDI, unemployment and consumption in Indonesia. By using panel data (pooling data) 24 provinces from 33 provinces in Indonesia during time period 2000-2008. Processing data is using statistical software Eviews 6. For the step of test was explained in chapter III.

Table 5. Statistical Result Panel Data Test by using OLS (Ordinary Least Square)

Variable	Coefficient	Prob.	t-Statistik	F-Statistik
TO	-0.003598	0.7966	-0.258033	
FDI	0.000355	0.0140	2.478315	
U	1.568255	0.0000	15.46786	
C	0.053963	0.0000	5.479323	
R-squared				-0.844197
Durbin-Watson Stat				0.363014

Simplify, the result is not good because $R^2 = -0.844197$ and DW = 0.363014.

It means autocorrelation exist and can't use this output to the poverty model.

Table 6. Statistical Result Panel Data Test by using GLS (Generalized Least Square)

Variable	Coefficient	Prob.	t-Statistik	F-Statistik
TO	0.004466	0.5231	0.5231	
FDI	-1.81E-05	0.4658	0.4658	137.7728
U	-0.155113	0.0104	0.0104	
C	0.005032	0.0135	0.0135	
R-squared				0.951892
Durbin-Watson Stat				1.180446

The result can be simplified as follow:

$P_{i,t} = 17.735 + 0.004$ TO $- 1.81$ FDI $- 0.155$ U $+ 0.005$ C

T-test (35.477) (0.523)   (0.465)   (0.010)   (0.013)

R^2 $= 0.95$

F $= 137.77$

D-w $= 1.18$

In this result, D-w = 1.18.

Where: n = 216 k = 4 at the 5% level of significance.

So, dL = 1.728 and dU = 1.809

Then, (4-dL) = 4 – 1.728 = 2.272 and (4-dU) = 4 – 1.809 = 2.191

Conclusion: autocorrelation is exist because D-w is in hesitant area between dL-dU.

So, we cannot use this result to the model.

Table 7. Statistical Result Panel Data Test by using GLS (with ar(1))

Because in second result autocorrelation exist, we use Autoregressive level 1 (AR (1)) to repair it and D-w will be increase.

Variable	Coefficient	Prob.	t-Statistik	F-Statistik
TO	-0.000751	0.7031	-0.381768	
FDI	-3.93E-06	0.7968	-0.257967	240.3932
U	0.104384	0.0476	2.102201	
C	-0.020262	0.0018	-3.177745	
R-squared				0.976356
Durbin-Watson Stat				1.830598

The result can be simplified as follow:

$P_{i,t}$ = 15.088 - 0.0007 TO – 3.930 FDI + 0.104 U - 0.020 C

T-test (33.455) (-0.381)   (-0.257   (1.996)   (-3.177)

R^2 = 0.97

F   = 240.39

D-w   = 1.83

In this result, D-w = 1.83.

Where: n = 216 k = 4 at the 5% level of significance.

So, dL = 1.728 and dU = 1.809

Then, (4-dL) = 4 – 1.728 = 2.272 and (4-dU) = 4 – 1.809 = 2.191

Conclusion: there is no autocorrelation problem because D-w is in no autocorrelation area dU – (4-dU). So, we can use this result to the model.

5.2 Empirical Result

$$P_{i,t} = 15.088 - 0.0007 \text{ TO} - 3.930 \text{ FDI} + 0.104 \text{ U} - 0.020 \text{ C}$$

(33.455) (-0.381)   (-0.257)   (2.102)   (-3.177)

5.2.1 t-test

If t-stat > t table, variable is significant. It means independent variable influence dependent variable, and vice versa.

t- table = {α; df = (n-k)}

     = (0,05; df = 24-5)

     = (0,05; df = 19)

     = 2,093

By t-table = 2,093 , get conclusion:

a) t-test toward trade openness (%)

By using $\alpha = 5\%$ and degree of freedom 19, getting:

t-table = 2,093

t-stat = -0.381

In statistical trade openness is not significant and negative relationship with poverty reduction in Indonesia. And conclude that trade openness is not influence poverty reduction in Indonesia.

b) t-test toward FDI (%)

By using $\alpha = 5\%$ and degree of freedom 19, getting:

t-table = 2,093

t-stat = -0.257

In statistical FDI is not significant and negative relationship with poverty reduction in Indonesia. And conclude that FDI is not influence poverty reduction in Indonesia.

c) t-test toward unemployment (%)

By using $\alpha = 5\%$ and degree of freedom 19, getting:

t-table = 2,093

t-stat = 2.102

In statistical unemployment is significant and positive relationship with poverty reduction in Indonesia.

d) t-test toward consumption (%)

By using $\alpha = 5\%$ and degree of freedom 19, getting:

t-table = 2,093

t-stat = -3.177

In statistical consumption is significant but negative relationship with poverty reduction in Indonesia. And conclude that consumption influence poverty reduction in Indonesia.

5.2.2 F-test

F-test is using to test all of independent variable toward dependent variable.

F-tabel : $v_1 = k-1$

$$= 5-1 = 4$$

$v_2 = n-k$

$$= 24 - 5 = 19$$

F-tabel $(v_1, v_2) = 2.90$

F-stat $= 240,3932$

F-stat > F-table , $240,3932 > 2.90$.

Means significant and trade openness, FDI, unemployment and consumption during 9 years all together influenced poverty reduction in Indonesia.

Trade Openness (%)

Poverty rate has negative relationship with trade openness with coefficient - 0.0007. It means, every increasing 1% of openness causes poverty rate decrease 0.0007%. Estimates result is match with hypothesis which is negative relationship and significant.

FDI (%)

Poverty rate has negative relationship with FDI with coefficient – 3.930. It means, every increasing 1% of FDI causes poverty rate decrease 3.930%. Estimates result is match with hypothesis which is negative relationship and significant.

Unemployment (%)

Poverty rate has positive relationship with unemployment with coefficient 0.104. It means, every increasing 1% of unemployment causes poverty rate increase 0.104%. Estimates result is match with hypothesis which is positive relationship and significant.

Consumption (%)

Poverty rate has negative relationship with consumption with coefficient - 0.020. It means, every increasing 1% of consumption causes poverty rate decrease 0.020%. Estimates result is match with hypothesis which is negative relationship and significant.

5.2.3 Determination Coefficient (R^2)

The limitation of R^2 is $0 \leq R^2 \leq 1$. If R^2 is equal to 1 that mean there is a perfect relationship between independent variable with dependent variable. Then, if R^2 is equal to 0 that mean there is no relationship between independent variable with dependent variable.

Based on estimates, get R^2 0.976356. It means 97,63 % trade openness, FDI, unemployment and consumption influenced poverty rate. The rest of 2.37% influence by another exogenous variable.

5.3 GLS Classical Assumption Test

5.3.1 Heterocedasticity Test

Big problem in panel data is heterocedasticity from cross section data. But in GLS, heterocedasticity test determine directly by the software. If data could be processing by Eviews, that means model free from heterocedasticity problem.

5.3.2 Autocorrelation Test

According to the estimating result by GLS ar(1), D-w = 1.83.

Where: n = 216 k = 4 at the 5% level of significance.

So, dL = 1.728 and dU = 1.809

Then, (4-dL) = 4 – 1.728 = 2.272 and (4-dU) = 4 – 1.809 = 2.191

Conclusion: there is no autocorrelation problem because D-w in dU – (4-dU).

CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Based on empirical and statistical result, by doing international trade, variables of international trade have different correlation to the poverty reduction in Indonesia. From four independent variables, trade openness, FDI, unemployment and consumption get conclusion that two of variables trade openness and FDI are not significant and has negative relationship in order to poverty reduction. Rest of variables unemployment is significant and has positive relationship in order to poverty reduction. Last variable consumption is significant and has negative relationship in order to poverty reduction.

In Indonesia trade openness and FDI is not effectives toward poverty reduction. Mostly in other countries international trade actually had been gives positive impact to the poverty reduction. Especially in FDI, as we know that FDI as a capital inflow to a country. A country with high FDI will be has new job opportunities to the unemployment. But case in Indonesia, proportion of FDI is unbalanced between provinces. That means the proportion is not same to the regional state or provinces and creates gap among province. In Indonesia, most of industries are took place in certain province like Java. So, the flows of FDI mostly go to Java rather than another like Sumatera and Papua.

Every increasing 1% of unemployment causes poverty rate increase 0.104%. This is logic because mostly Indonesian people live below poverty line because they

do not have job. Especially in Java, so many slum area and poor people there. We can see from data unemployment rate, Jakarta is the highest unemployment rate compare with another province. From year 2000 up to 2008, amount of unemployment rate in Jakarta are: 9.55%, 9.02%, 14.39%, 14.86%, 14.7%, 14.73%, 11.4%, 12.6%, 12.16%.

Inequality exist in Indonesia also same as another developing country. Inequality of income is wages gap between skilled labor and unskilled labor. As we know, Indonesia labor mostly is unskilled labor. Last, international trade is effectives to reduce poverty rate in Indonesia, even thought in fact international trade creates inequality of income.

6.2 Recommendation

From this study the writer gives some recommendation to repair international trade performance in Indonesia. Indonesia government should be improved policy coherence and a whole-of-government approach to economic development and poverty reduction. Another way is by adding more multilateral or bilateral agreement with another country. Like CAFTA, it is good for expand international trade of Indonesia and has purpose to hit the target from trade to get maximum gain.

Distribution of FDI must be balance to all of provinces, so provinces in Indonesia can grow up together. Growing up of FDI stimulates new job opportunities and will be absorb unemployment. So that many worker get income. Labor welfare also one of measurement Indonesian people welfare. To reduce inequality of income between unskilled labor and skill labor, need to change capability of labor from unskilled labor to the skill labor by giving some practice or seminar.

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Provinces

NO	CODE	Province
1	_Smt	Sumatera Utara
2	_Smb	Sumatera Barat
3	_Riau	Riau
4	_Jmb	Jambi
5	_Sms	Sumatera Selatan
6	_Beng	Bengkulu
7	_Lam	Lampung
8	_Jkt	DKI Jakarta
9	_Jbr	Jawa Barat
10	_Jtg	Jawa Tengah
11	_Diy	Dista. Yogyakarta
12	_Jtm	Jawa Timur
13	_Bli	Bali
14	_Kbr	Kalimantan Barat
15	_Ktg	Kalimantan Tengah
16	_Ksl	Kalimantan Selatan
17	_Kti	Kalimantan Timur
18	_Slt	Sulawesi Utara
19	_Stg	Sulawesi Tengah
20	_Sls	Sulawesi Selatan
21	_Stgr	Sulawesi Tenggara
22	_Ntb	Nusa Tenggara Barat
23	_Ntt	Nusa Tenggara Timur
24	_Pap	Papua

Table 4. Test panel data by using OLS (Ordinary Least Square)

Dependent Variable: POV?
Method: Pooled Least Squares
Date: 08/22/10   Time: 17:24
Sample: 2000 2008
Included observations: 9
Cross-sections included: 24
Total pool (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TO?	-0.003598	0.013945	-0.258033	0.7966
FDI?	0.000355	0.000143	2.478315	0.0140
U?	1.568255	0.101388	15.46786	0.0000
C?	0.053963	0.009848	5.479323	0.0000

R-squared	-0.844197	Mean dependent var		16.74403
Adjusted R-squared	-0.870295	S.D. dependent var		8.578714
S.E. of regression	11.73214	Akaike info criterion		7.780886
Sum squared resid	29180.33	Schwarz criterion		7.843391
Log likelihood	-836.3357	Hannan-Quinn criter.		7.806138
Durbin-Watson stat	0.363014			

Table 5. Using GLS (Generalized Least Square) to Estimate Fixed Effect or Random Effect.

a. Fixed Effect

Dependent Variable: POV?
Method: Pooled EGLS (Cross-section weights)
Date: 08/22/10   Time: 17:26
Sample: 2000 2008
Included observations: 9
Cross-sections included: 24
Total pool (balanced) observations: 216
Linear estimation after one-step weighting matrix

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.73580	0.499918	35.47740	0.0000
TO?	0.004466	0.006981	0.5231	0.5231
FDI?	-1.81E-05	2.47E-05	0.4658	0.4658
U?	-0.155113	0.059932	0.0104	0.0104
C?	0.005032	0.002018	0.0135	0.0135
Fixed Effects (Cross)				
_SMT--C	-2.292670			
_SMB--C	-4.750029			
_RIU--C	-4.470524			
_JMB--C	-4.355964			
_SMS--C	2.972864			
_BENG--C	4.660115			
_LAM--C	6.655352			
_JKT--C	-12.07675			
_JBR--C	-2.228943			
_JTG--C	4.476170			
_DIY--C	4.304123			
_JTM--C	3.777214			
_BLI--C	-8.296746			
_KBR--C	-0.581311			
_KTG--C	-6.301638			
_KSL--C	-8.254670			
_KTI--C	-4.348604			
_SLT--C	-4.635110			
_STG--C	6.325267			
_SLS--C	-1.132305			
_STGR--C	5.795029			
_NTB--C	-9.791791			
_NTT--C	10.43070			
_PAP--C	24.12022			

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.951892	Mean dependent var	27.59900
Adjusted R-squared	0.944983	S.D. dependent var	16.36354
S.E. of regression	3.382891	Sum squared resid	2151.463

F-statistic	137.7728	Durbin-Watson stat	1.180446
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.848883	Mean dependent var	16.74403
Sum squared resid	2391.088	Durbin-Watson stat	1.350617

b. Random Effects

Dependent Variable: POV?
Method: Pooled EGLS (Cross-section random effects)
Date: 08/22/10   Time: 17:28
Sample: 2000 2008
Included observations: 9
Cross-sections included: 24
Total pool (balanced) observations: 216
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.05118	1.745373	10.34230	0.0000
TO?	-0.000843	0.004391	-0.192070	0.8479
FDI?	-1.30E-06	5.01E-05	-0.025895	0.9794
U?	-0.216106	0.119644	-1.806242	0.0723
C?	0.010448	0.003719	2.809315	0.0054
Random Effects (Cross)				
_SMT--C	-2.115959			
_SMB--C	-4.447930			
_RIU--C	-4.421631			
_JMB--C	-4.358937			
_SMS--C	2.889397			
_BENG--C	4.374612			
_LAM--C	6.386399			
_JKT--C	-11.50103			
_JBR--C	-1.911563			
_JTG--C	4.304137			
_DIY--C	4.067036			
_JTM--C	3.578730			
_BLI--C	-8.208328			
_KBR--C	-0.616353			
_KTG--C	-6.245504			
_KSL--C	-8.073533			
_KTI--C	-4.035114			
_SLT--C	-4.288048			
_STG--C	5.813965			
_SLS--C	-0.883464			
_STGR--C	5.594905			
_NTB--C	-9.152856			
_NTT--C	9.907934			
_PAP--C	23.34314			

Effects Specification

		S.D.	Rho
Cross-section random		7.039690	0.8003
Idiosyncratic random		3.516782	0.1997

Weighted Statistics

R-squared	0.098460	Mean dependent var	2.750371
Adjusted R-squared	0.081369	S.D. dependent var	3.707812
S.E. of regression	3.553761	Sum squared resid	2664.765
F-statistic	5.760986	Durbin-Watson stat	1.203152

Prob(F-statistic)	0.000203		

	Unweighted Statistics		
R-squared	0.063324	Mean dependent var	16.74403
Sum squared resid	14820.82	Durbin-Watson stat	0.216325

Table 6. Fixed Effects Test

Redundant Fixed Effects Tests
Pool: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	124.454925	(23,188)	0.0000

Cross-section fixed effects test equation:
Dependent Variable: POV?
Method: Panel EGLS (Cross-section weights)
Date: 08/22/10   Time: 17:27
Sample: 2000 2008
Included observations: 9
Cross-sections included: 24
Total pool (balanced) observations: 216
Use pre-specified GLS weights

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23.61676	1.355864	17.41824	0.0000
TO?	-0.012280	0.025314	-0.485085	0.6281
FDI?	0.000156	8.04E-05	1.943874	0.0532
U?	-0.981630	0.138084	-7.108958	0.0000
C?	-0.009684	0.006759	-1.432658	0.1534

	Weighted Statistics		
R-squared	0.219404	Mean dependent var	27.59900
Adjusted R-squared	0.204606	S.D. dependent var	16.36354
S.E. of regression	12.86263	Sum squared resid	34909.36
F-statistic	14.82660	Durbin-Watson stat	0.248468
Prob(F-statistic)	0.000000		

	Unweighted Statistics		
R-squared	0.141096	Mean dependent var	16.74403
Sum squared resid	13590.25	Durbin-Watson stat	0.366091

Table 7. Random Effect Test

Correlated Random Effects - Hausman Test
Pool: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.460648	4	0.0761

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
TO?	-0.000405	-0.000843	0.000000	0.0564
FDI?	-0.000007	-0.000001	0.000000	0.2384
U?	-0.163929	-0.216106	0.000596	0.0326
C?	0.011315	0.010448	0.000000	0.0455

Cross-section random effects test equation:
Dependent Variable: POV?
Method: Panel Least Squares
Date: 08/22/10   Time: 17:29
Sample: 2000 2008
Included observations: 9
Cross-sections included: 24
Total pool (balanced) observations: 216

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.63962	1.009646	17.47109	0.0000
- TO?	-0.000405	0.004397	-0.092106	0.9267
FDI?	-7.06E-06	5.04E-05	-0.140212	0.8886
U?	-0.163929	0.122110	-1.342475	0.1811
C?	0.011315	0.003744	3.022103	0.0029

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.853051	Mean dependent var	16.74403
Adjusted R-squared	0.831947	S.D. dependent var	8.578714
S.E. of regression	3.516782	Akaike info criterion	5.473393
Sum squared resid	2325.139	Schwarz criterion	5.910929
Log likelihood	-563.1264	Hannan-Quinn criter.	5.650159
F-statistic	40.42063	Durbin-Watson stat	1.380379
Prob(F-statistic)	0.000000		

Table 8. Estimate by using GLS ar(1)

Dependent Variable: POV?
Method: Pooled EGLS (Cross-section weights)
Date: 08/22/10   Time: 17:40
Sample (adjusted): 2001 2008
Included observations: 8 after adjustments
Cross-sections included: 24
Total pool (balanced) observations: 192
Iterate coefficients after one-step weighting matrix
Convergence achieved after 15 total coef iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.08864	0.451002	33.45581	0.0000
TO?	-0.000751	0.001966	-0.381768	0.7031
FDI?	-3.93E-06	1.52E-05	-0.257967	0.7968
U?	0.104384	0.052291	1.996201	0.0476
C?	-0.020262	0.006376	-3.177745	0.0018
AR(1)	0.259413	0.034028	7.623633	0.0000
Fixed Effects (Cross)				
_SMT--C	-1.887417			
_SMB--C	-4.441281			
_RIU--C	-4.449135			
_JMB--C	-4.708968			
_SMS--C	3.941281			
_BENG--C	6.567721			
_LAM--C	6.148000			
_JKT--C	-12.82645			
_JBR--C	-3.009663			
_JTG--C	5.297077			
_DIY--C	3.402796			
_JTM--C	4.193869			
_BLI--C	-6.219124			
_KBR--C	-2.101953			
_KTG--C	-5.337917			
_KSL--C	-8.082964			
_KTI--C	-4.880647			
_SLT--C	-5.028574			
_STG--C	6.841717			
_SLS--C	-1.574177			
_STGR--C	6.239113			
_NTB--C	-13.11814			
_NTT--C	10.66236			
_PAP--C	24.37247			

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

R-squared	0.976356	Mean dependent var	30.91782
Adjusted R-squared	0.972295	S.D. dependent var	19.54688
S.E. of regression	2.352623	Sum squared resid	902.1783
F-statistic	240.3932	Durbin-Watson stat	1.830598
Prob(F-statistic)	0.000000		

	Unweighted Statistics		
R-squared	0.921713	Mean dependent var	16.28958
Sum squared resid	1018.287	Durbin-Watson stat	2.637842