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Mulyana Soekarni

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## STRATEGY ON REDUCING UNEMPLOYMENT PERSISTENCE: A MICRO ANALYSIS IN INDONESIA<sup>1</sup>

*Mulyana Soekarni*  
*Iman Sugema*  
*Priyo R. Widodo*<sup>2</sup>

### Abstract

*This study has three main objectives, namely: (1) to examine the existence of the persistence of unemployment in Indonesia, (2) to examine factors that cause the persistence of unemployment in Indonesia and in some sample areas, and (3) to formulate strategies and policy measures needed to reduce the level of unemployment.*

*To achieve these objectives, the activities we do are an empirical analysis through the modeling of Econometrics, unemployment accounting, and descriptive statistics. Meanwhile, the data used are secondary data and regional macroeconomic and primary data collected through interviews with workers, the unemployed, firms, bureaucrats, and unions.*

*The study concludes that the persistence of unemployment in Indonesia is disequilibrium unemployment persistence without self correcting mechanism, which means that the persistence occurs outside the worker market equilibrium and has no automatic mechanism to get to the point of equilibrium. In addition, persistence is the result of the slow process of capital accumulation, wage rigidity, length of job search, and inertia caused by institutional factors of worker market.*

*The main implications of this study are: (1) there needs to improve the quality of growth through hands-on strategy; (2) banking policy and capital markets may lead to the acceleration of capital accumulation; (3) monetary policy is more focused on inflation targeting, (4) increased total factor productivity; (5) special incentives for labor-intensive sectors; (6) strengthening of vocational education, and (7) anti-unemployment programs that are regionally specific.*

**Keywords:** Persistent unemployment, Disequilibrium, Wage rigidity, Job search, Indonesia.

**JEL Classification:** J23, J31.

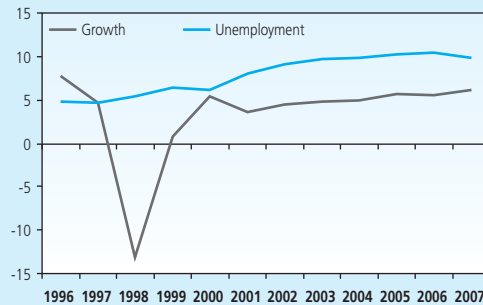
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1 Mulyana Sukarni and Priyo R. Widodo are researchers in PPSK - Bank Indonesia, Iman Sugema is researcher on International Center for Applied Finance and Economics (InterCAFE).

2 This paper is collaborative work between Pusat Pendidikan dan Studi Kebanksentralan (PPSK) - Bank Indonesia and International Center for Applied Finance and Economics (InterCAFE).

## I. INTRODUCTION

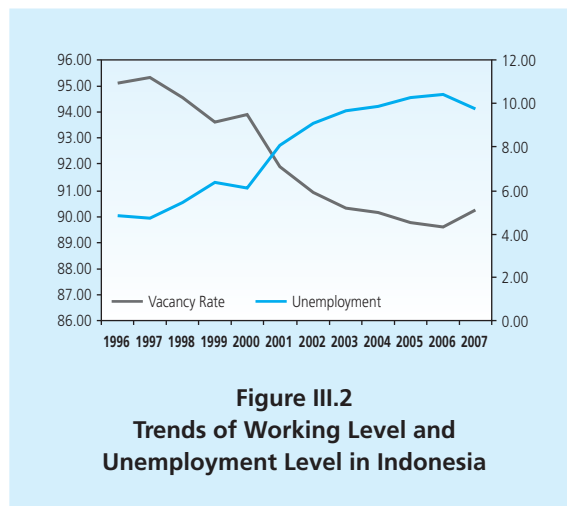
Indonesia's economic growth in the period of 2001-2005 showed an increasing trend, but the total was still low if compared to the total growth obtained before the crisis (around 7 percent). The economic growth is now still supported by the people consumption whose contribution is about 68 percent of the Gross Domestic Product (PDB). If seen from the employment, worker force that increases every year cannot be absorbed entirely which leads to the increase of total unemployment. Figure 1 and Figure 2 show that the unemployment level in Indonesia tends to increase, except in 2007. Such increases were caused by the rationalization of total workers in some industrial sectors that formerly could absorb many workers, such as textile and garment industries.



**Figure III.1**  
**Comparison of Economic Growth and**  
**Open Unemployment in Indonesia**

The unemployment, which seems to increase and rather hard to decrease and even tends to be persistent, shall be a burden for the Indonesia's economy if it is not handled with accurate solutions. The increase of economic growth and other macro indicators seem not enough used as the basis to take policies in solving such unemployment problems. Those factors are related to the aspect of government policies, particularly concerning the laws and regulations, quality of workers, and problems and obstacles faced by the industrial sectors.

At present, accurate policy formulation to handle unemployment problem is still obstructed by several problems such as the abstinence of a complete and accurate unemployment problem mapping, unidentified employment affecting factors, and incorrect strategies and policies.



This paper describes some matters that relate to the formulation of policies in managing such unemployment problems, three of those consist of: (1) to recognize if unemployment persistence happens in Indonesia, (2) to know what factors cause such unemployment persistence, and (3) to identify various aspects relating to the unemployment problem solving that contain: worker readiness, government instruments or policies, mainly on the readiness of law instruments and conditions faced by the entrepreneurs. Therefore, it is expected that unemployment persistence in Indonesia may be handled systematically and entirely. The second part of this paper discusses literature study concerning employment, the third part explains the methodology, whereas the fourth part is about the analysis, and the final part covers conclusion and suggestions.

## II. THEORY

Unemployment persistence may be defined as there has been an increase of unemployment level continuously. According to Blanchard and Summer (1986), unemployment persistence occurs when adjustment to the balance level runs slowly.

Even though within such slow adjustment, the level of unemployment persistence tends to return to the previous level (mean reversion). This condition should be differed from *hysteresis*, which is the fluctuation condition of worker market that owns permanent impact to the level of unemployment. This was explained by Tolvi (2003) who says that unemployment persistence or unemployment hysteresis is a phenomenon in which the level of unemployment in a region

increases and requires long time to return to the previous level, or otherwise such unemployment level shall never return to its initial level.

A literature study shows that unemployment persistence arises from many factors (Table III.1 and III.2). Assarsson and Jansson (1995) and Linblad (1997) state that unemployment persistence may be caused by some factors, namely: (1) it is caused by natural rate shocks, (2) unemployment may own a cycle within a quite long period, (3) cyclical shocks of unemployment may be transmitted to be a unemployment persistence, (4) combination of cyclical and permanent shocks in the spill-over effects<sup>3</sup>.

Blanchard and Summers (1986) find that persistence in European countries is higher than in America. Such study result is strengthened with a study result performed by Ledesma (2000) that aims to recognize if there has been unemployment persistence or hysteresis among the European countries and America. An estimation by using Panel Unit Root is utilized to obtain *t*-statistic that reflects the degree of persistence.

Tolvi (2003) uses ARFIMA (Autoregressive Fractionally Integrated Moving Average) and LM (Lagrange Multiplier) for the Finland data. His study result shows that unemployment persistence for young worker force is lower than for all worker forces. In addition, unemployment persistence in women is lower than in men, both for young worker force and for all worker forces.

Steiner (2001) uses the hazard rate<sup>4</sup> of unemployment to analyze the worker market of West Germany. The empirical data shows that the hazard rate of unemployment experiences a decrease along with the running time. This is strong evidence that supports the hypothesis of negative structural duration dependence<sup>5</sup>. Such study result shows that long-term unemployment does not arise from the decrease of human capital as long as such person is unemployed; it is more caused by the age and gender differences.

Arulampalam *et al.*, (2000) conducted a study concerning the state dependence of unemployment level in England. By using the modeling of data panel, they found that there were strong impacts of state dependence that happened in the previous period, in particular for the adults. Such result also shows that the condition of local worker market may produce small impacts to the young unemployed. The young unemployed are independent to the business

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3 Completed with Linblad's study result (1997)

4 Hazard rate is defined as the ratio of unemployed who work on certain month relative to the total unemployment on the end of previous month.

5 This hypothesis is based on the possibility of human capital reduction when the worker is unemployed.

cycle. Age, health, and qualification of workers become the determining factors significant for unemployment.

Martin and McCromick in Monastiriotis (2006) finds that there is a phenomenon of unemployment persistence in England caused by different institutional and economic structures in the regional area that arises from structural characteristics such as the wage system, technological and skill mismatches, demand hysteresis, and deficiency of worker offer. The most important essence of this study shows that the flexibility of production function is in fact related to the high level of unemployment.

Wu (2003) performed a study that tested the existence of unemployment persistence as well as the persistent source happened in China. His study focused on the difference occurred in the total and youth unemployment as well as in the national and regional levels of unemployment persistence phenomenon in China. The empirical result shows three important essences. First, provincial unemployment is more persistent than national aggregate unemployment. Second, total unemployment is more persistent than youth unemployment. Third, even though West China has higher level of provincial unemployment, its regional unemployment persistence is the lowest.

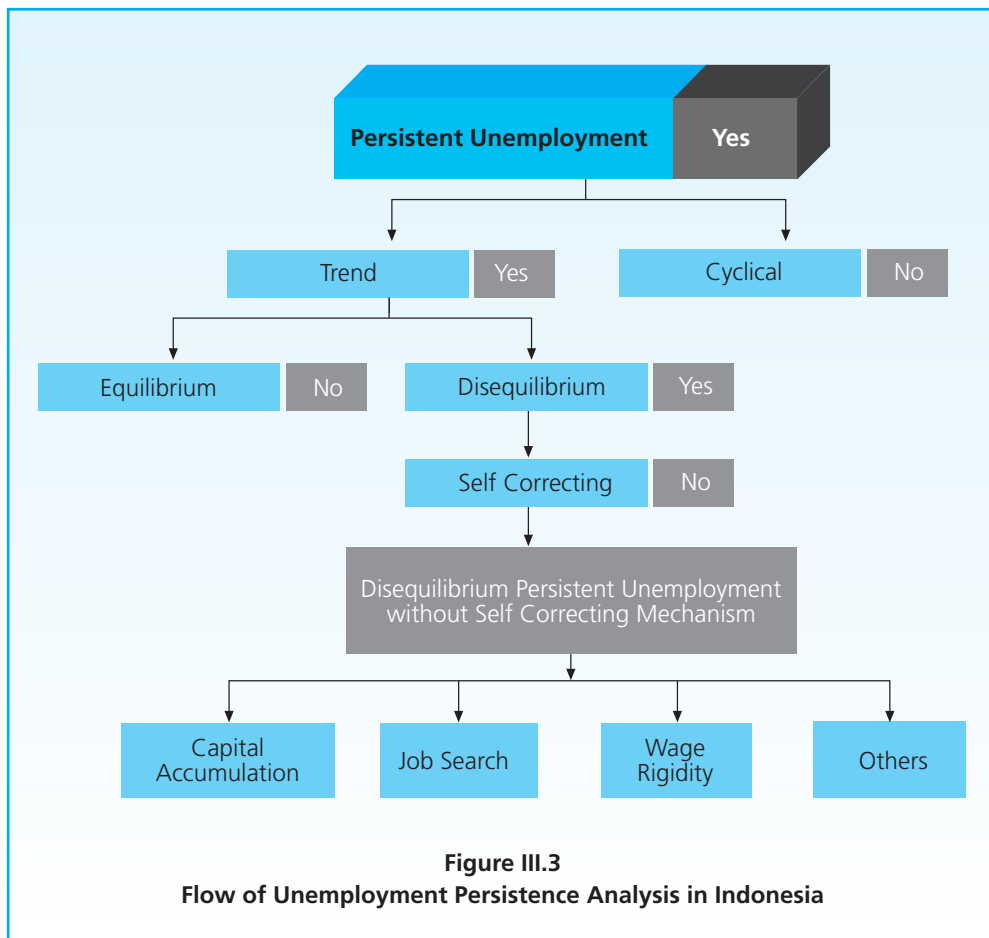
**Table III.1**  
**Sources of Aggregate Unemployment Persistence**

Period	Sources of Unemployment Persistence	Author
1970s	Roles of shocks such as the increase of world oil price, slow productivity growth/ euro-sclerosis (real wage rigidity and nominal wage rigidity)	Bruno and Sachs (1985)
1980s	Roles of capital accumulation, insider roles, collective bargaining, inertia of worker offer, long-term unemployment	Alogoskoufis and Manning (1988); Blanchard and Summers (1986); Kidd and Oswald (1987); and Nickell and Wadhvani (1990); Bean et al. (1986); Grubb et al. (1982); Newell and Symons (1985); Lindbeck dan Snower (1986); Barro (1988)
1990s	Roles of worker market institution such as worker protection and unemployment insurance, high flow of workers turnover, adjustment cost, employment tax, and minimum wage provision.	Pissarides (1990 and (2000), Phelps (1994), Nickel and Layard (1998), Phelp and Zoega (1994), Feve (2002)
The Next Period	Roles of other shocks, other institutions, other interaction (regulation on product market, house ownership, high workers turnover, interest rate).	Oswald (1997), Coe and Snower (1997), Daveri and Tablelini (200), Bertola, Rogerson (1997), Blanchard and Wolfers (2000), Cohen and Nouveau (2005)

<b>Table III.2</b>	
<b>Sources of Unemployment Persistence Level Differences Based on Certain Criteria</b>	
<b>Sources of Unemployment Persistence Level Differences Based on Region</b>	<b>Author</b>
The high share of public sector output leads to the high unemployment persistence in China.	Wu, 2003
Emerging wage flexibility, employment creation, worker mobility, housing market imperfection and asymmetric information become the main factors that cause the different level of unemployment in developing countries.	Mc Cormick dan Sheppard, 1992; Bornhorst dan Commander, 2004
Industry mix, RGDP, worker taxes, shock of worker supply, regional differences in skill levels become the main cause of high unemployment in regional level in Argentina.	Galiana, 2004
<b>Sources of Unemployment Persistence Level Differences Based on Gender</b>	
Unemployment in women is more persistent because of the high wage elasticity of women workers.	Murillo, 2005
<b>Sources of Unemployment Persistence Level Differences Based on Age</b>	
Unemployment at the age of <25 and >45 is more persistent caused by the "scarring theory of unemployment."	Murillo, 2005
"Scarring theory of unemployment" supports the study result concerning the impacts of youth employment to the level of adult unemployed.	Greg, 2001
<b>Sources of Unemployment Persistence Level Differences Based on Skilled vs Unskilled</b>	
Unemployment at unskilled worker force is higher since some skilled workers work in unskilled works.	Collard, 2003
Unemployment persistence at workers who didn't finish formal education in Andalusia and Extremadura Spanyol is higher because of skill problems at such workers.	Murillo, 2005
<b>Sources of Unemployment Persistence Level Differences Based on Sectors</b>	
By using Bayesian ARFIMA approach, it is seen the presence of unemployment persistence level differences in the economic sectors of Canada. This was happened because of absorption power differences of each sector and the technology its own.	Eberwein, et al 2002

In accordance with the above theories and empirical studies, the tracing of unemployment and employment structures in Indonesia starts from identifying whether or not such unemployment is persistent. Statistically, proving the presence of unemployment persistence may be performed by viewing the characteristics of the trend and cyclical components of unemployment data. Please see Figure III.3.

An unemployment persistence phenomenon may arise outside of the balance point. This is possible if the market power and the institutional arrangement of worker market does not function as required by the neoclassic theory. In this theory, unemployment increase is always viewed as a natural unemployment increase from time to time, which is accompanied with the achievement of worker market balance. It means that natural unemployment is a consequence which cannot be avoided from the market clearing mechanism. For that reason, the second



tracing is related to (1) whether or not the level and dynamics of such unemployment is an equilibrium phenomenon or in fact it is a disequilibrium phenomenon, and (ii) whether or not there is an automatic mechanism which is able to correct and return such condition into the balance level.

The third tracing is conducted to identify what factors affecting such unemployment persistence. Based on some previous theories and empirical studies, factors potentially affect such unemployment persistence consist of: mismatch between the inquiry and the offer of existing workers, the slowly process of capital accumulation, wage rigidity, length of job search, easiness in shifting the work to the other sectors and other areas, regulation factor (severance and social insurance provisions), worker roles, and adjustment mechanism as well as other factors relate to worker market institution.



### III. METHODOLOGY

#### III.1 Types and Methods of Data Collection

This study is performed by using secondary data which is related to unemployment during 1991 to 2006, both the aggregate data in the national level and the aggregate data in the provincial level. This data may be received from the Indonesia Statistics Center (BPS) and many other related departments or institutions.

This study also used primary data obtained from a survey to achieve information concerning the condition of worker market. This survey involved many people in worker markets such as workers, the unemployed, entrepreneurs, unions, and some related institutions within total respondent was 385 people. For every province selected as the survey area, the total respondent contained: companies (15), related institutions (1), unions (1), working individuals (30), and job searching individuals or the unemployed (30).

Determination of such survey location is based on the representativeness of provinces located in the western and eastern areas of Indonesia and according to the level of unemployment tendency in every island during 1996 to 2006. In accordance with such criteria, provinces becoming the survey areas were: Riau, West Java, West Kalimantan, North Sulawesi, and Nusa Tenggara West (NTB). From each of these provinces, it was decided two municipalities or regencies that were representative with the criteria: (1) municipalities or regencies within PDRB per capita was almost close to the provincial PDRB per capita, and (2) municipalities or regencies that own the highest level of unemployment. With reference to such criteria, the study was conducted in the following regions:

1. Riau (Pelalawan Regency and Pekanbaru Municipality),
2. West Java (Bogor Regency and Cimahi Municipality),
3. West Kalimantan (Pontianak Municipality and Pontianak Regency),
4. North Sulawesi (Manado Municipality and Bolaang Mongondow Regency),
5. Nusa Tenggara West (Mataram Municipality and Lombok East Municipality).

#### III.2 Analysis Technique

This study implements the quantitative method. In spite of descriptive analysis in the forms of graph, table, and cross tabulation, this study also performs inferential testing to answer the study questions occurred. The first stage is the initial identification on the level of unemployment persistence and whether or not such unemployment is natural. Referring to a study conducted by Elmeskov (1993), this testing can be done within stationarity test with

alternative approach: unit root with constant, unit root with drift, and (3) unit root with drift and trend.

For instance, the time series variable for unemployment data ( $u$ ) is as follows:

$$u_t = \alpha + \phi u_{t-1} + e_{i,t} \quad (\text{III.1})$$

where  $\phi$  is the parameter to be estimated and  $e$  is assumed as the white noise. If  $|\phi| \geq 1$ , then  $u_t$  is the non stationary variable or in the Blanchard and Summers' definition (1986), there is hysteresis unemployment so that there is permanent fluctuation effect. If  $|\phi| < 1$ , then  $u_t$  is the stationary variable or trend-stationary variable, or on the other word, there has been a natural unemployment.

Moreover, unemployment persistence takes place if point  $\phi$  is closed to point 1. Therefore, trend-stationarity hypothesis may be evaluated by testing if the absolute point of  $\rho$  is really lower than 1. The general testing to such hypothesis above is  $H_0: \phi = 1$ , within one side testing of alternative hypothesis is  $H_1: \phi < 1$ .

The general standard to test the unit root of Dickey-Fuller (DF) is equation (III.1). Next, by reducing the both sides of equation (III.1) within  $u_{t-1}$ , it is obtained equation:

$$\Delta u_t = \rho u_{t-1} + \varepsilon_t \quad (\text{III.2})$$

or by adding variable lag  $\Delta u_t$  on the right side of equation (III.2), it will be obtained Augmented Dickey-Fuller (ADF) such as follows:

$$\Delta u_t = \rho u_{t-1} + \sum_{j=1}^j \gamma_j \Delta u_{t-j} + \varepsilon_t \quad (\text{III.3})$$

Where  $\Delta$  indicates the first difference and  $\rho = (\phi - 1)$ , then null hypothesis will be  $H_0: \rho = 0$ , meanwhile the alternative hypothesis will be  $H_1: \rho < 0$ . Testing to this hypothesis may be evaluated with regular  $H_1: \rho < 0$ , which is then developed by Dickey-Fuller (1979) since they present that in null hypothesis, the presence of unit root will make the t-statistics achieved does not follow conventional student's t-distribution. Currently, tabulation frequently used is Mackinnon's tabulation (1991, 1996).

In this study, three indicators are used to measure the unemployment trend, namely NAWRU, Beveridge curve, and Okun curve. NAWRU (*Non Accelerating Wage Rate of Unemployment*) shows unemployment rate that may accelerate wage increase. NAWRU indicators are gained within the following formula:

$$\text{NAWRU} = U - (DU/D^2 \log W) * D \log W$$

where:

- U = actual unemployment rate,
- W = nominal wage,
- D = first difference operator.

Beveridge curve is a curve that describes linkage between unemployment rate and job vacancy rate. Beveridge curve indicators are obtained within the following formula:

$$b = U * V^{\text{med}(-D \log U / D \log V)}$$

where:

- U = actual unemployment rate,
- V = job vacancy rate.

Okun curve is a curve that describes linkage between unemployment rate and output. Okun curve indicators are obtained by using a method, which is relatively the same with the formula to build NAWRU indicators, by using wage inflation with capacity utilization.

Inferential testing on factors affecting the structure and dynamics of unemployment in Indonesia is performed with panel data estimation technique. This technique is different with the time-series regression or cross-series regression since each variable in the panel data regression contains  $it$  multiple subscripts. The general formula of panel data regression may be as follows:

$$y_{it} = \alpha + \beta x'_{it} + u_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T \quad (\text{III.4})$$

Where  $i$  show certain units such as household, individual, company, province, state and so on, whereas  $it$  shows time. In that case,  $i$  indicates cross-section dimension and  $t$  indicates time dimension.  $\alpha$  is *intercept*,  $\beta$  is *slope*, and  $x_{it}$  is *explanatory variables* in the observation  $it$ . Commonly, panel data implementation uses the modeling of one-way error component in the form:

$$u_{it} = \mu_i + v_{it} \quad (\text{III.5})$$

where  $\mu_i$  shows the specific impact of individuals that cannot be observed and  $v_{it}$  is *disturbance*. In the analysis of panel data model, it is known three approaches that cover: pooled least square, fixed effect, and random effect.

## IV. RESULT AND ANALYSIS

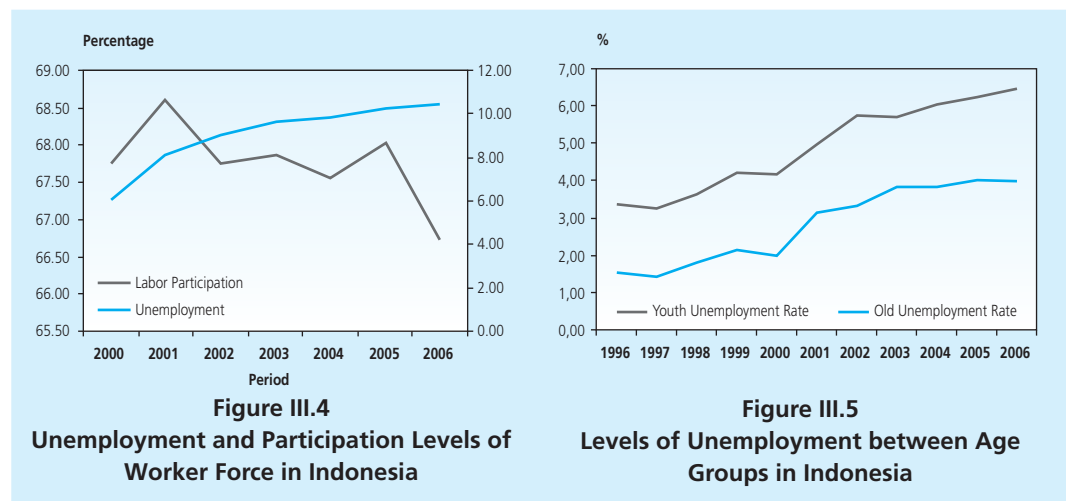
### IV.1 Description on Indonesia's Employment

Unemployment rate in Indonesia tends to increase. During 1996-2006, the unemployment rate in average was 5.49 percent, which then became 9.57 percent. Such unemployment increase phenomenon was along with the increase of total worker force (Figure III.4).

Since 1996, the total of young unemployed in Indonesia has been about two times higher than the adult unemployed<sup>6</sup> (Figure III.5). Such phenomenon of young unemployed domination compared to adult unemployed is known as the down skilling<sup>7</sup> phenomenon.

One of factors considered as the cause of the high rate of young unemployed is the weak system of education in preparing the students to enter the working world. The educational system built all this time seems still produces young worker force with lack of skills and experiences.

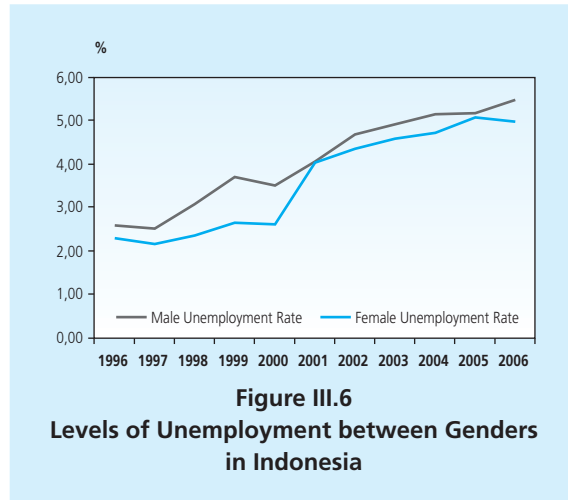
From the total unemployed, 90% are unskilled. Based on gender, the rate of man unemployed is higher than the rate of woman unemployed<sup>8</sup>, even though there is tendency that such difference of unemployment rate between genders is smaller. Please see the following graph.



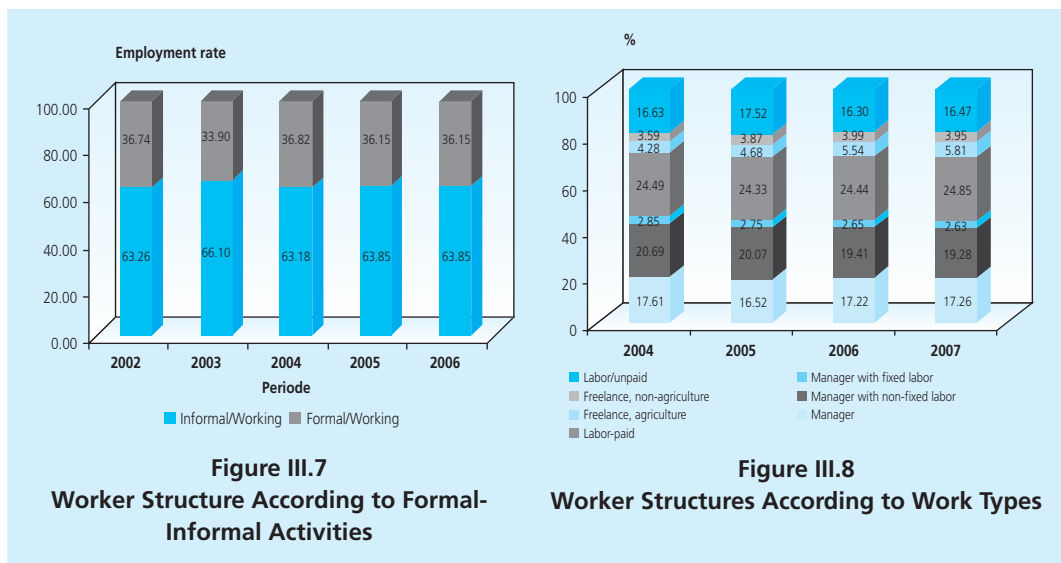
<sup>6</sup> This pattern is often found in European countries (Blanchard, 2005)

<sup>7</sup> Down skilling defines the presence of workers within higher expertise and education who work for unskilled works (Collard, 2003).

<sup>8</sup> This is different with Murillo's study (2005), which finds that women's unemployment rate is more persistent than men's. Meanwhile, Elmeskov's study (2003) shows that the condition happened in Indonesia were also experienced by some European countries, but some others have higher women unemployment rate than men unemployment rate.



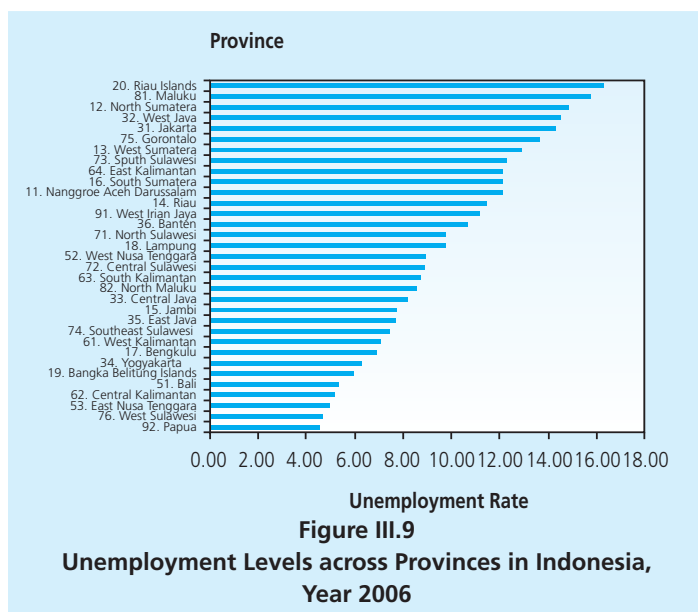
Indonesia's worker market is marked by least of workers work in formal sector and most of them may only be accomodated in informal sector or it can be said that they are dualistic (Figure III.7). Moreover, since 2004, worker structure according to work type is fixed where the total workers having profession as paid workers/ employees/ workers is relative constant (Figure III.8). This shows that the company's capacity to absorb workers as employees/ workers is relative unchanged as well. In that case, there needs changes on the educational paradigm, the students are better prepared to be entrepreneurs who can create vacancies than only to be job seekers.

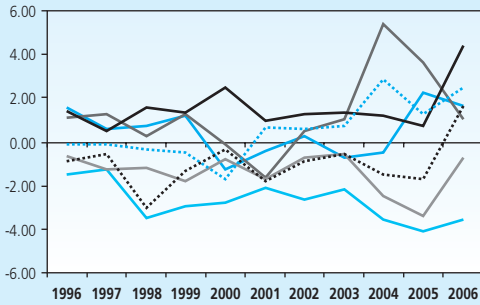


Based on the spatial distribution, unemployment level between provinces has high heterogeneity (Figure III.9). From 33 provinces, 14 provinces have unemployment level exceeding the national unemployment level. A province with the highest unemployment level is Kepulauan Riau (16.34 percent), whereas a province with the lowest unemployment level is Papua (4.50 percent).

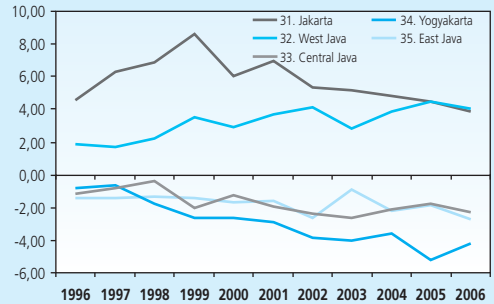
This difference of unemployment level tends to increase and is convergence. (Figure III.10-III.14 and Table III.3). In 1996 within 26 provinces, the highest and lowest unemployment levels were 3.43 percent and 5.84 percent. Meanwhile, in 2006 within 33 provinces, such levels increased to be 7.06 percent and 12.11 percent. This presents that the range between quartiles in regional unemployment level is larger and leads to consequence both to the aggregate unemployment level and to the divergence between provinces in Indonesia.

Year (Total Province)	Regional Quartile with the Lowest UE Rate	Regional Quartile with the Lowest UE Rate	Range between Quartiles	Weight in Average
1996 (26)	3.43	5.84	2.41	4.76
2000 (25)	3.68	5.92	2.24	5.31
2006 (33)	7.06	12.11	5.05	9.72

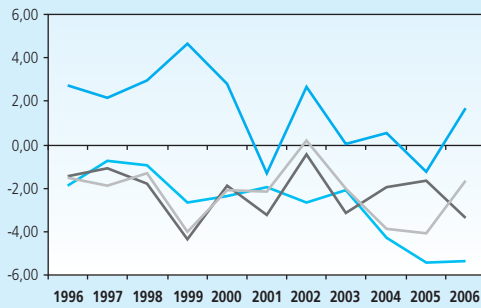




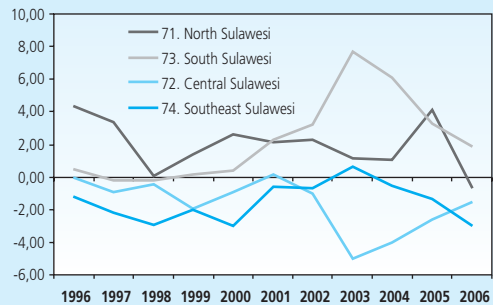
**Figure III.10 Differences of Provincial Unemployment Level and National Unemployment Level in Sumtera Island**



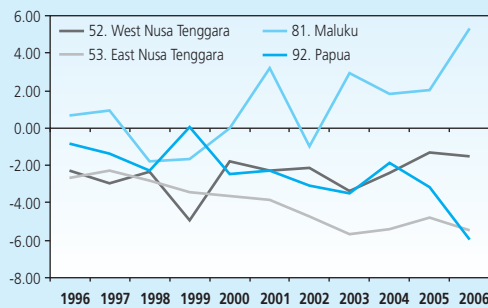
**Figure III.11 Differences of Provincial Unemployment Level and National Unemployment Level in Java Island**



**Figure III.12 Differences of Provincial Unemployment Level and National Unemployment Level in Kalimantan Island**



**Figure III.13 Differences of Provincial Unemployment Level and National Unemployment Level in Sulawesi Island**



**Figure III.14 Differences of Provincial Unemployment Level and National Unemployment Level in Nusa Tenggara, Maluku dan Papua Islands**

The empirical evidence illustrates that there is imbalanced worker absorption between provinces in Indonesia (Figure III.15). This shows that development process between regions is not spread evenly. In addition, workers are absorbed more in villages compared to cities (Figure III.16). This is so related to the agriculture sector, which is generally in villages. These both conditions indicate that village and agriculture developments are expected able to reduce unemployment. Nevertheless, it should be considered that developments in those areas also need quality, productive, and professional human resources.

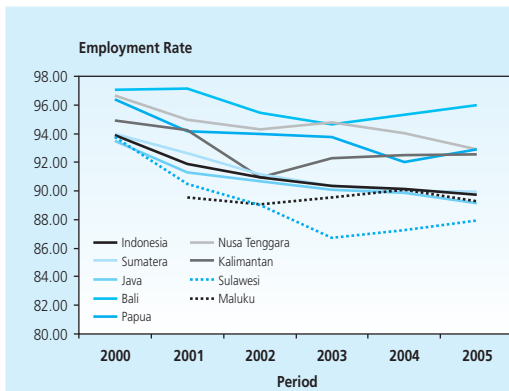


Figure III.15

Workers Absorption According to Island

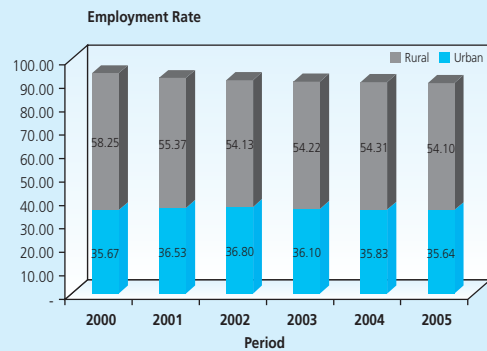


Figure III.16 Workers Absorption between Villages and Cities

In the regional autonomy era, one of decentralization objectives is to create and to enlarge job vacancy as well as to obtain a more spread growth. However, it seems that decentralization and regional autonomy has not been an effective solution for unemployment problem.

Dispersion increase of across-regions unemployment level is also viewed from the standard deviation value which tends to increase (Table III.4). One of factors suspected emerging the higher difference of across-regions unemployment level is the workers mobility obstacle across regions. However, if the dispersion value is seen from the coefficient of variation (CV)<sup>9</sup>, the aggregate unemployment shall highly increase so that such normalized dispersion value tends to decrease.

Year (Number of Province)	Variation Coefficient of Regional Unemployment Level	Deviation Standard of Regional Unemployment Level	National Unemployment Level
1996 (26)	0,404	1,924	4,86
2000 (25)	0,448	2,38	6,08
2006 (33)	0,355	3,455	10,45

9 In this approach, the level of unemployment is normalized to accomodate the increase of unemployment in general



## IV.2 Result of Model Estimation

### IV.2.1. Unemployment persistence Testing

With reference to the theory previously explained, there are two approaches may be used to prove the existence of unemployment persistence in Indonesia, namely: econometric and graphic approaches by comparing the natural trend of unemployment (Curve NAWRU, Curve Beveridge, and Curve Okun).

The testing result reflects that the data of unemployment level follows the autoregressive pattern that is closed to the unit root within persistent coefficient of 0.934 (Table III.5). This fact is then supported with the increasing graph of natural unemployment trend (Figure III.17). It means that statistically, the unemployment level tends to be convergence to the long-term value but within a very slow speed. Therefore, such high unemployment period may exist in a very long time period.

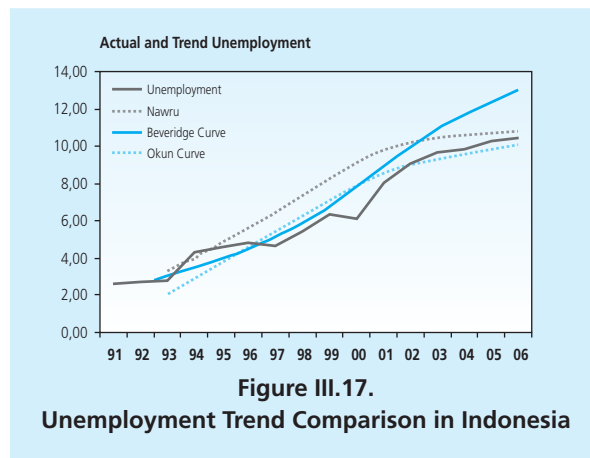


Table III.5 Unemployment Persistence Test in Indonesia				
Probability of unit root against hypothesis of stationarity with:			Persistence (coefficient AR)	Standard Deviation
Constancy	Drift	Drift and Trend		
0.955	0.493	0.0001	0.934	0.068

To view the comparison of regional unemployment persistence and national unemployment persistence, we use the regression approach. Some important finding results consist of: (1) unemployment persistence occurred both in provincial level and in national level, seen from the

significant coefficient value; (2) Unemployment in the national level is more persistent than in the regional level, both on the model that uses year dummy variable and on the model that does not use year dummy variable; (3) Unemployment in West Indonesia is more persistent than in East Indonesia <sup>10</sup> (Table III.6.a and Table III.6.b).

Persistence of:	National	Regional	
		Without Year Dummy	With Year Dummy
Level of Unemployment	0.965***	0.929***	0.910***

Note: \*\*\* significant in the real level of 1 percent

Variable	West	East	West	East
Total Unemployment rate <sub>t-1</sub>	0.976*** (26.96)	0.892*** (16.20)	0.979*** (25.53)	0.818*** (13.04)
R <sup>2</sup>	.854	.712	.892	.769
Year Dummies	No	No	Yes	Yes

Note: \*\*\* significant in the real level of 1%

Period	Pertumbuhan			
	Work force		Job Vacancy	
	West Indonesia	East Indonesia	West Indonesia	East Indonesia
2000	2.02	-4.52	-9.48	-41.75
2001	2.56	6.96	-77.88	-55.46
2002	1.33	5.10	4.46	-40.62
2003	1.59	3.59	-45.98	363.59
2004	1.52	-0.27	25.14	-51.64
2005	1.84	1.40	70.52	50.29
Average	1.81	2.04	-5.54	37.40

The high unemployment persistence of West Indonesia is caused by the different growth rates between worker forces with job vacancy availability (Table III.7) and by the presence of worker mobility obstacles between regions. The work force of West Indonesia increased 1.81 percent in average since 2000 up to 2005, whereas job vacancy availability tended to decrease.

<sup>10</sup> West Indonesia is represented by Java, Sumatera, and Bali. Meanwhile, East Indonesia is represented by Kalimantan, Sulawesi, Irian Jaya, East Nusa Tenggara, West Nusa Tenggara and Maluku.

#### IV.2.2. Equilibrium Phenomenon Identification and Self Correcting Mechanism

Problems may be complex when the condition of such unemployment persistence is a disequilibrium condition. When there are a lot of shocks in this condition, it is hard to go back to the previous balance point so that the convergence point will never be reached.

In order to estimate if there is tendency that unemployment will or will not finally be converged to a point, there are at least two components should be identified, namely trend and cyclical. If in fact the trend component is much more dominant, unemployment will tend to increase in a long time period.

Unemployment trend is identified as a change in the natural unemployment level. In this study, the trend measurement uses three natural unemployment concepts such as NAWRU, Beveridge curve, and Okun curve. These three measurements consistently present that the level of natural unemployment in Indonesia tends to increase, particularly after the crisis. Therefore, there is strong evidence that unemployment persistence is caused by trend increase and not by cyclical variation.

The estimation result shows that the trend component dominates the cyclical component. This is seen from the high output variability of 2,448 which only can be explained by the worker variability of 0.669. Further, the elasticity of worker participation to the output is only 0.387 (Table III.8). On the other word, worker response participation to the output is cyclical, which is relative small to explain the existence of unemployment persistence that previously has been proved.

**Table III.8**  
**Cycle Testing from Workers**

Variability of output	Employment responsiveness	Elasticity of employment with respect to output	Responsiveness of labour force to employment	Variability of unemployment rate
2,448	0.004	0.387***	0.859***	0.669

Note: \*\*\* significant in the real level of 1%

Up to this point, there are several important implications from the findings above. First, the level of unemployment happened all this time is almost impossible caused by the low level of growth. In that case, improvement in the level of growth becomes not enough to handle such unemployment problem. Second, because there has been an increase in the unemployment trend, there is a strong tendency that natural unemployment in Indonesia has experienced an increase from time to time.

Such two points implicate the problem solving of natural unemployment, which is possibly rooted from the Indonesia's economic fundamental. Since the problem is on the Indonesia's economic fundamental, the next question is: Is there any self-correcting mechanism in such fundamental that can automatically correct and return the condition into the balance?

To answer such question, there should be evidence if the unemployment trend is an equilibrium or disequilibrium phenomenon. If it is an equilibrium phenomenon, then unemployment persistence is a consequence of natural unemployment. An increase of natural unemployment, which is not accompanied with market clearing, is the unemployment that hard to be pressed since it is a phenomenon of long-term balance movement.

Technically, the increase of unemployment trend in equilibrium condition is marked by the negative wage reaction to (nominal or real) and only to the unemployment level deviation of the trend. The estimation result shows the contrary, where  $g$  in fact shows the influence of unemployment deviation (of the trend) that is positive to the wage formulation (Table III.9). This testing reflects that there is no change on the level of long-term natural unemployment in Indonesia.

Since it is not an equilibrium phenomenon, the alternative hypothesis is: persistence is caused by hysteresis, namely unemployment tends to increase persistently but then slowly returns to the long-term balance (slow adjustment).

**Table III.9**  
**Worker Influence Testing on Wage Formulation**

Equation	Coefficient	Value	Significance	R <sup>2</sup>
(1)	d	-0.048	***	0.686
	g	0.065	***	
(2)	d	-0.007	not significant	0.704
	g	0.024	***	
(3)	d	-0.021	***	0.699
	e	0.022	***	
(4)	d	0.0003	not significant	0.816
	e	-0.001	not significant	

Note:

- (1)  $D\log WR = c + L \cdot A(M) \cdot D\log WR + B(L) \cdot D\log PCP + C(L) \cdot D\log PGDPB + d \cdot f(UNR) + g \cdot (UNR - UTREND)$ ,  
(2)  $D\log(WR/PCP) = c + L \cdot A(M) \cdot D\log(WR/PCP) + B(M) \cdot DD\log PCP + C(L) \cdot D\log(PGDPB/PCP) + d \cdot f(UNR) + g \cdot (UNR - UTREND)$ ,  
(3)  $D\log WR = c + L \cdot A(M) \cdot D\log WR + B(L) \cdot D\log PCP + C(L) \cdot D\log PGDPB + d \cdot f(UNR) + e \cdot DUNR$ ,  
(4)  $D\log(WR/PCP) = c + L \cdot A(M) \cdot D\log(WR/PCP) + B(M) \cdot DD\log PCP + C(L) \cdot D\log(PGDPB/PCP) + d \cdot f(UNR) + e \cdot DUNR$ .

Moreover, the estimation result of Table 9 shows that unemployment persistence in Indonesia may not be categorized into hysteresis or slow adjustment since coefficient  $e$  in equation III.3 and III.4 should be negative and significant. This also means unemployment persistence is not accompanied with the self correcting mechanism of economic fundamental.

There are some important implications from the findings above. First, the government cannot purely depend on the market mechanism to handle unemployment. There should be hands-on strategy particularly designed to return the unemployment level into the direction of long-term balance. Europe's experience shows that if a government unconsciously doesn't prepare accurate strategies, unemployment level will tend to be worse and exist in a long time up to thousands of year. It is the interest of Indonesian people to not be trapped in a situation similar to the unemployment pattern of West Europe.

Second, to formulate the strategy of anti-unemployment policy, there should be identification on the factors that become the cause root of persistence. Without such identification, the policy usually becomes ineffective in handling the underlying problems. The next part discusses this aspect.

### **IV.2.3. Sources of Unemployment Persistence**

Next, to analyze what factors become the sources of regional unemployment persistence, a model developed by Wu (2003)<sup>11</sup> will be utilized.

$$U_t - U_{t-1} = \alpha + \beta_1 U_{t-1} + \beta_2 U_{t-1} * \text{sharemanufacture} + \beta_3 U_{t-1} * \text{shareservices} + \beta_4 \text{PDRBgrowth} + \varepsilon_t$$

The analysis results within three panel models, namely Ordinary Least Square (OLS), Fixed Effect (FE) and Random Effect (RE), with or without year dummy, are presented in Table 8. Based on the scores of LM test, Hausman test, R-square and *t*-statistic, the best model is the Random effect model with year dummy (Model 3B).

The 3B Model shows all variables, except the PDRB growth, significantly influence the dependent variable ( $U_t - U_{t-1}$ ) on the level of 1 percent. It means that in a short time, regional economic growth is not able to reduce regional unemployment persistence problem.

In addition, the output shares of manufacture and service sectors have positive effects and are significant for unemployment persistence. The high regional unemployment persistence happens because of the high output shares of manufacture and service sectors. The higher the output shares of those two sectors are, the more persistent the regional unemployment will be. Rationalization upon this fact is fairly clear since those two sectors are full of capital sectors within ratio of worker absorption is less than the other sectors. A sector that all this time is able to absorb most of workers is agriculture sector whose growth is expected may reduce the unemployment persistence in Indonesia.

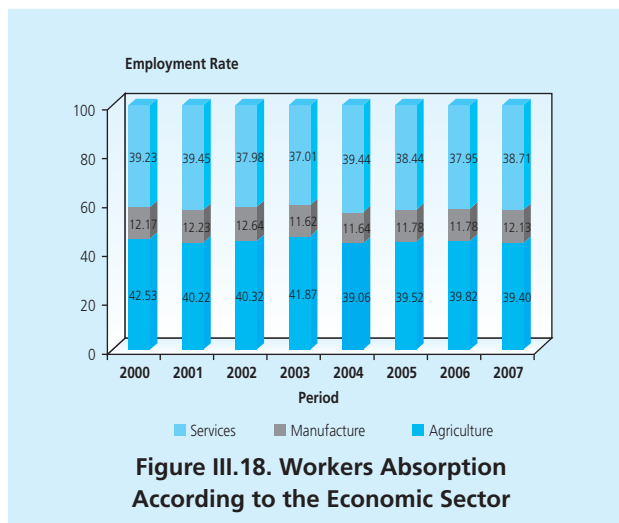
<sup>11</sup> In Wu's model, the variable used for instance is the share output of State and Collective sectors. For Indonesia's case, these two factors are replaced with manufacture and service industry sectors.

**Table III.10**  
Sources of Regional Unemployment Persistence

Variable	1A OLS MODEL	2A FE MODEL	3A RE MODEL	1B OLS MODEL	2B FE MODEL	3C RE MODEL
$U_{t-1}$	-0.097* (-1.94)	-0.165*** (-2.94)	-0.097* (-1.94)	-0.293*** (-4.10)	-0.705*** (-8.00)	-0.293*** (-4.10)
$U \times \text{Share of manufacture}$	0.038 (0.92)	0.037 (0.45)	0.038 (0.92)	0.160*** (3.32)	0.216*** (2.70)	0.160*** (3.32)
$U \times \text{Share of services}$	0.010 (0.20)	-0.169* (-1.87)	0.010 (0.20)	0.171*** (2.89)	0.085 (0.90)	0.171*** (2.89)
$PDRB \text{ Growth}$	-0.003** (-2.11)	-0.005*** (-3.29)	-0.003** (-2.11)	-0.004 (-0.83)	-0.003 (-0.67)	-0.004 (-0.83)
$R^2$	0.048	0.136	0.048	0.246	0.430	0.246
Hausman Test			18.910 [0.001]			73.610 [0.000]
LM test			3.880 [0.049]			0.130 [0.720]
Year Dummies	No	No	No	Yes	Yes	Yes

Note: \*\*\* significant on the real level of 1%, \*\* 5%, and \* 10%. The number in the parenthesis is the t-statistic score.

The data shows that the absorption sectoral elasticity of workers and work forces who work in agriculture sector is higher than the other sectors (Figure III.18). In 2000, 42.53 percent of work force were in this sector but continuously decreased to be 39.40 percent in 2006. According to the elasticity, agriculture sector has an ability to absorb workers 0.61 percent for every 1 percent PDB growth of such sector (Table III.11). Nevertheless, the ability of agriculture sector to absorb workers is also very influenced by the economic growth of such sector, which tends to decrease and lower than the manufacture and service sectors.



**Table III.11**  
**PDB Growth dan PDB Sectors**

Period	Growth			
	PDB	PDB of Agriculture	PDB of Manufac ture Industry	PDB of Services
2001	3.64	3.26	2.40	4.89
2002	4.50	3.45	4.02	5.28
2003	4.78	3.79	3.40	6.30
2004	5.03	2.82	3.40	7.13
2005	5.68	2.66	4.20	7.84
2006	5.48	2.98	4.02	7.38

Employment problems are basically related to the economic condition of Indonesia. There are four things should be concerned. *First is* sectoral imbalance in workers absorption. *Second*, there should be a policy reorientation so that sectors highly develop may be able absorb higher workers. Third, there should be an industrialization policy that may support to create job vacancy. Forth, there is productivity imbalance between the sectors.

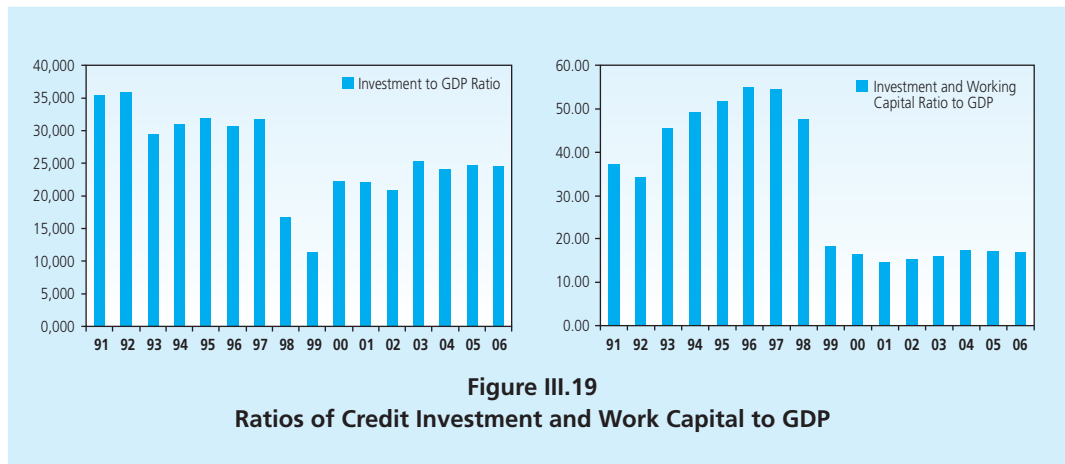
To complete this econometrics modeling, the following part discusses and analyzes the primary data that have been gathered within focus on how the capital accumulation, wage rigidity, job search and other factors may influence the unemployment persistence in Indonesia.

### **Capital Accumulation**

In the post-crisis era, capital accumulation becomes slower, which is remarked by the lower investment ratio and investment credit-work capital, than the era before the crisis (Figure III.14). It is predicted that such low investment ratio associate with some following matters. First, the process of company re-structurization performed by BPPN is too slow. This cause many capital goods owned by big companies such as Texmaco are wasted and become junk. In many cases, such low restructurization process causes the financial access of such company is closed. The banking or other creditors cannot add the credit ceilings before the company restructurization is finished.

Second, along with the crisis, there were also capital flight and capital owner flight. If it is only the capital that flights, then the impact will be only for medium term. But if the capital and the capital owner that flight, then the impact will be so permanent. Third, there were many companies and enterprises got bankrupt at the crisis. They had to rebuilt their business from the beginning so that they couldn't make investment progress as fast as before. In addition, the population of new entrepreneurs is still very limited so that in total, the national investment

growth has not reached the level before the crisis (Figure III.19). For that reason, the banking more intensively develops the portfolio of consumption credit and a little bit forgets the investment credit. Fifth, the financial sector, mainly the capital market, has been contra productive to the real sector. Return of financial assets is much higher than the normal profit created by the real sector. Therefore, capital owners become more interested on the financial instruments so that fund availability for investments in the real sector becomes limited.



Those five matters are predicted have caused the rate of capital accumulation becomes slower than before the crisis, which then will lead the rate of workers inquiry is in trouble. In the next dynamic, such five matters are mixed with the wage rigidity that will be discussed simultaneously in the following part and cause persistent unemployment level. Since the actual wage exceeds the equilibrium, the level of company profitability becomes pressed and then the capital accumulation becomes slow. Such slow capital accumulation in return may cause the growth of capital productivity becomes disturbed and not able to compensate the burden occurred because of such high wage.

From the explanation above, the real sector seems in the devil circle where no one is able to cut it off. This requires innovative steps that are integrated to handle simultaneously such capital accumulation and wage rigidity problems. If only one of these problems can be carried out, the real sector will be still disturbed by such problems.

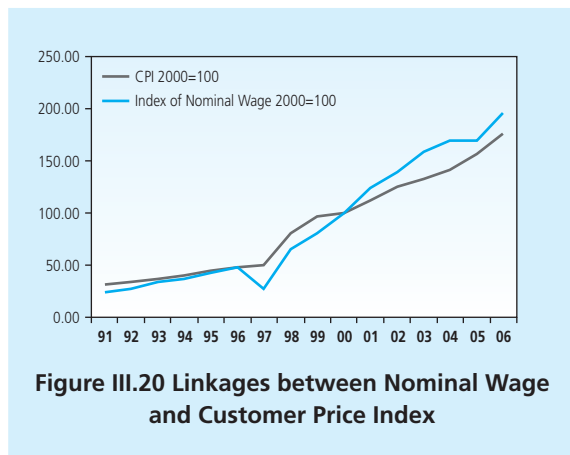
### **Wage Rigidity**

Wage rigidity is often viewed as one of the main causes of the prolonged increase of unemployment level. Basically, wage rigidity is classified into two types, namely the nominal

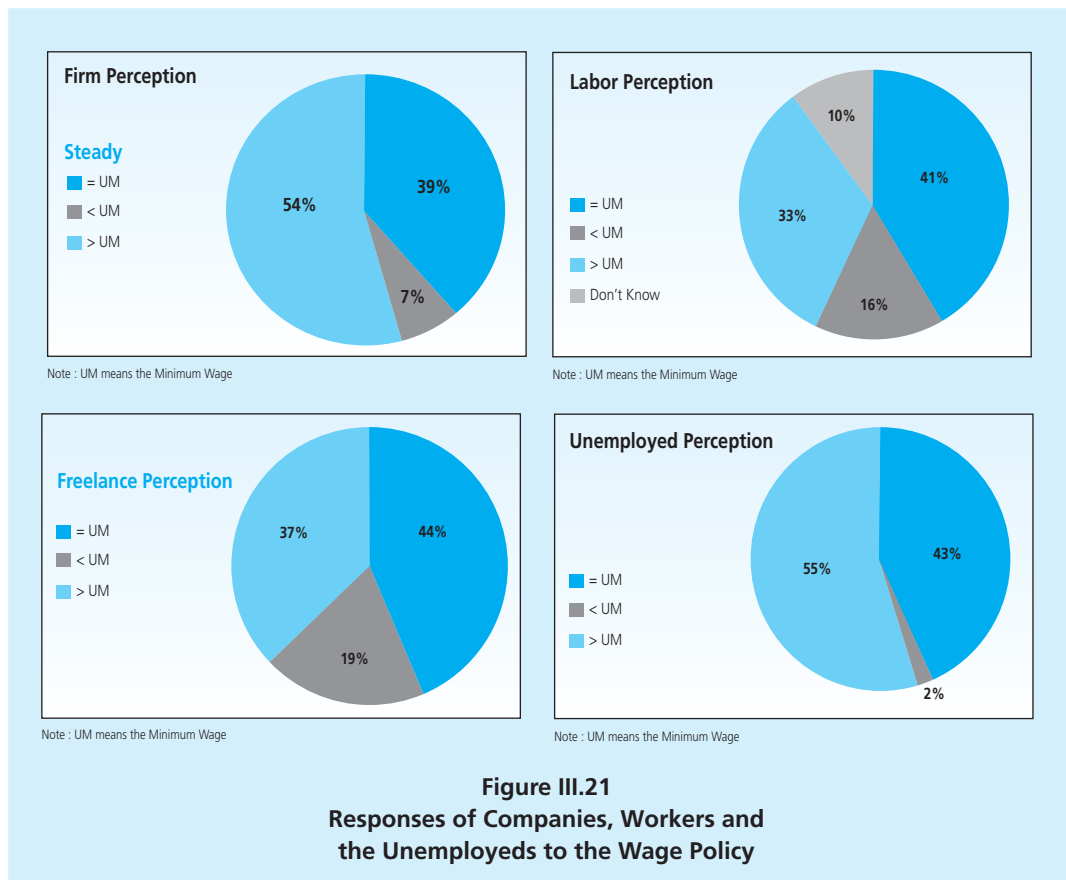


wage rigidity and the real wage rigidity. Nominal wage rigidity occurs when the wage level in over the balance so is the unemployment increases above the natural unemployment level. The difference between the actual unemployment level caused by nominal wage rigidity and the natural unemployment level is called “waits unemployment”. It is called so because the unemployed only wait for job vacancies which are never able to come. The nominal wage rigidity may be caused by the downward rigidity, minimum wage implementation, indexation, relative wage and efficient wage. Those are potential to cause the nominal wage exceeds the balance wage.

From the findings of this study, it can be concluded that nominal wage is downward rigidity. Such rigidity is asymmetric, which means that the nominal wage easily increased but difficult to decrease. Based on the data of average wage time series, the nominal wage has decreased only for one time in 1998 (Figure 20). According to a survey on companies and workers, the main reason of this wage rigidity is the highly perceived cost that associates with wage decrease so that the company tends to be difficult to lower the wage. Such survey result indicates that the cost of wage decrease manifested in the form of workers demonstration, loss of productive workers, and decrease of labor’s average productivity. This cost may not be equal with the saving benefit arising from such wage decrease.



Besides those things above, wage rigidity may be also caused by the implementation of minimum wage policy (Figure III.21). In this policy, the company legally may not implement the wage policy below the floor wage. According to the survey result to some companies and workers, it is found strong evidence that such minimum wage policy has been able to protect most of workers. Nevertheless, a fact that some workers are still paid below the minimum



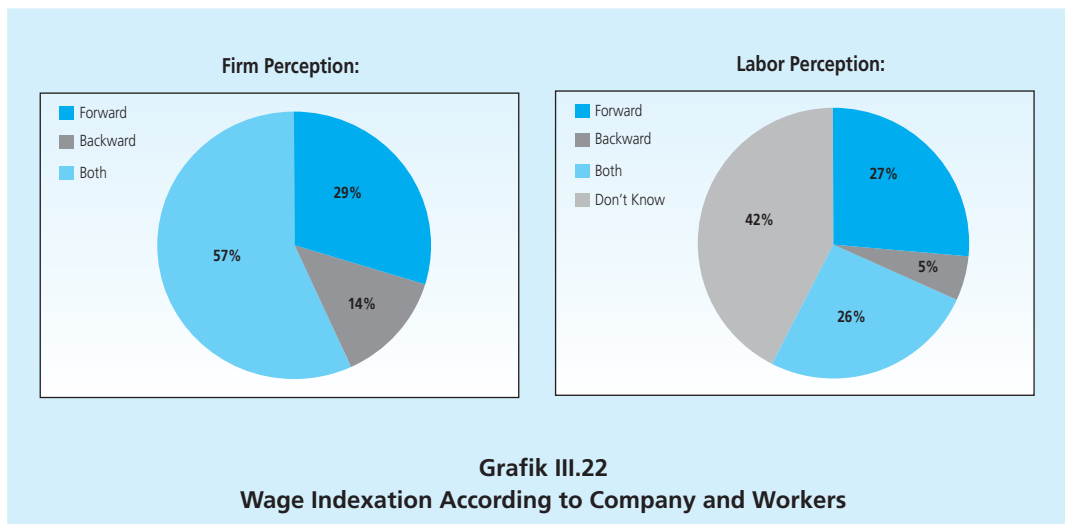
wage reflects that such policy has not been effective entirely. It is also found that the minimum wage is a reference wage for companies in determining the policy of wage level.

The survey findings regarding the rigidity of low wage and minimum wage lead to a basic question, namely: Which one of them is more dominant or becomes the main reason of nominal wage rigidity? Viewing the big response of company and worker respondents, implicitly it indicates that the expensive perceived cost is possibly more important than the minimum wage. Or, on the other words, as John Maynard Keynes says: low wage rigidity is a social fact of life that owns social justice dimension and relative wage. The implication is: even though the minimum wage is not applied, it will not make wage rigidity becomes vanished.

Wage rigidity becomes more complex when the minimum wage is indexed to the inflation. From the survey result, it is found that the minimum wage is adjusted with the inflation, both backwardly and forwardly (Figure III.22). In accordance with the result of econometrics estimate, it is also found strong evidence about indexation, mainly in the period after the crisis. In this period, it is even found an indexation coefficient higher than one, both for the backward and

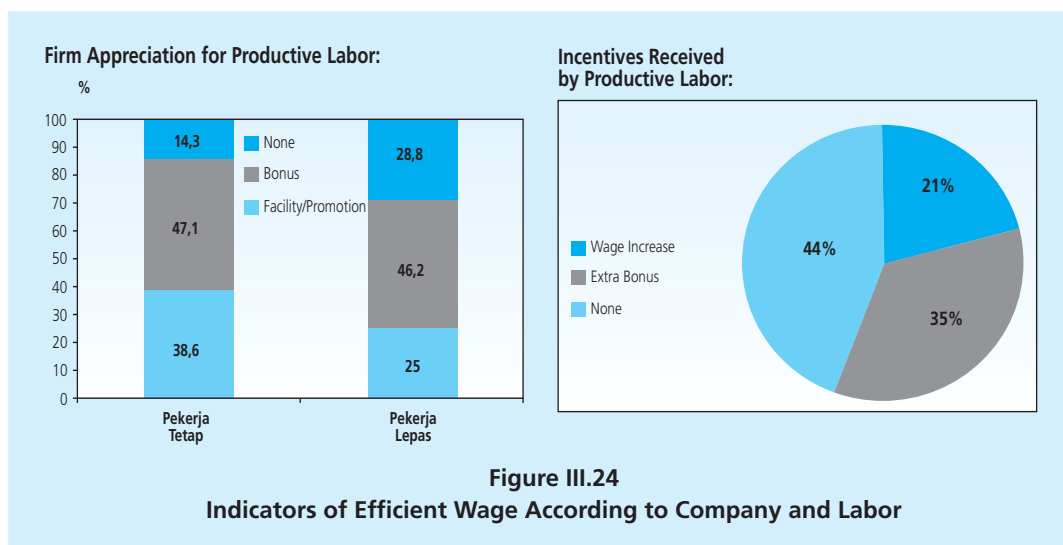
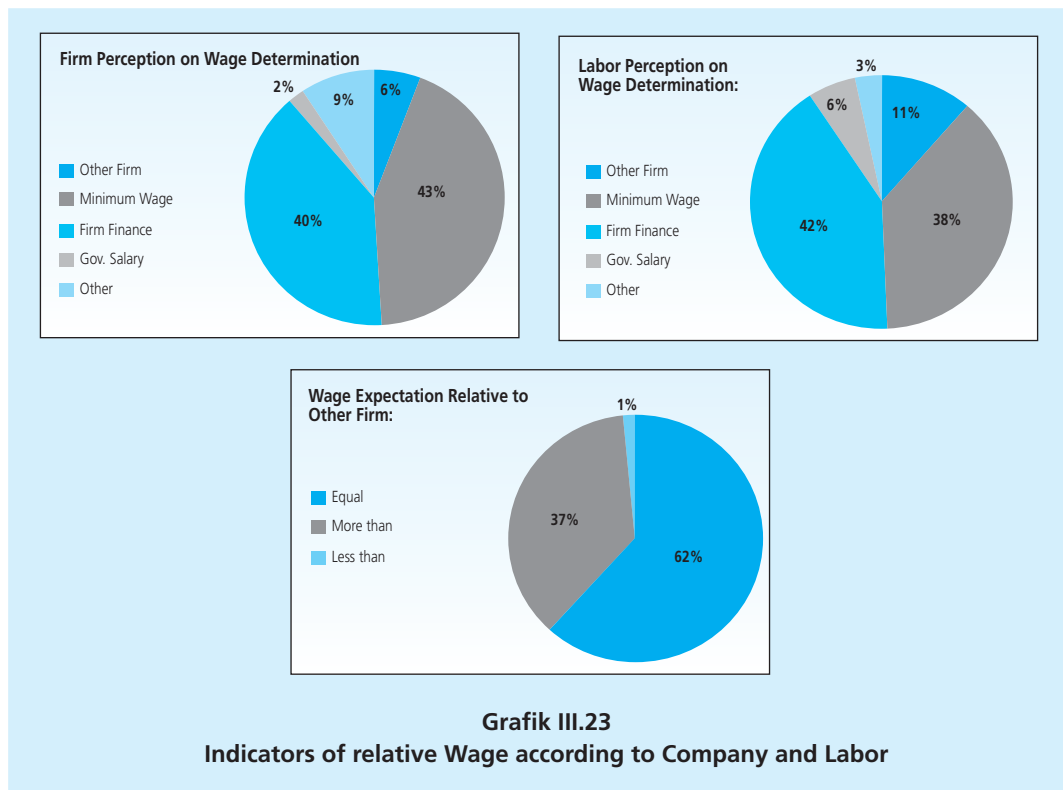
for the forward. It means that the minimum wage experiences an adjustment higher than the inflation level.

The most important implication from these findings is the ineffectiveness possibility upon expansive monetary policy in handling unemployment. The monetary policy, which tries to support the anticipated inflation and unanticipated inflation, is ineffective at all since it will be compensated by the exceeding backward and forward indexation mechanisms. In fact, persistent inflation happens without any influence to the unemployment level. In a situation such like this, the policy of targeting inflation within lower target of long-term inflation becomes more relevant.



In the existing study, it is not found strong evidence that relative wage and efficient wage become the causes of nominal wage rigidity (Figure III.23 and Figure III.24). The reason is simple: in a situation where unemployment is being high and increased, the company has a space to not compete each others to give more competitive wage in looking for workers. This is also supported by some findings that most of companies may obtain workers to fulfill vacancies in a short time, namely less than one week. The next fact, which is more important, is the phenomenon of real wage rigidity. This phenomenon occurs when the real wage paid to workers is over the marginal productivity of worker (MPL). The market balance should happen when MPL is the same with the real wage.

The survey result to the company and workers shows that the company has difficulty to perform real wage adjustment when the company gets productivity shocks. This is also supported with the result of econometric estimate where the growth of real wage is about the same with



the warranted real wage in the period after the crisis (Table III.12). When unemployment increases, his growth of real wage should be lower than the warranted real wage so that the job vacancy may open wider. Because of this phenomenon, the wage share tends to decrease from time to time, which indicates that the company attempts to decrease the burden of worker wage.

**Table III.12**  
**Regression of Real Wage and Warranted Real Wage**

Dependent Variable	Independent Variable Warranted Real Wages based on TFP1			Independent Variable Warranted Real Wages based on TFP2		
	'91 - '96	'99 - '06	'91 - '06	'91 - '96	'99 - '06	'91 - '06
Real Wage	0.98***	1.03***	0.97***	0.89***	1.01***	0.92***

Note:  
Warranted Real Wages = Total Factor Productivity (TFP)/wage share.  
As the Capital Variable:  
TFP1 uses Gross Fixed Capital Formation (GFCF)  
TFP2 uses Consumption of Fixed Capital (CFC)  
\*\*\* significant at the real level of 1%.

There are two important implications of real wage rigidity. First, to decrease the unemployment level or to open wider job vacancy the government may manipulate that the growth of real wage is always below the growth of warranted real wage. This may be reached by determining the minimum wage slower than the inflation. But in the reality, as it has been discussed, this strategy is really hard to be realized and it even may be contra productive.

Second, as an alternative, the government may support such warranted real wage to grow much faster. The main requirement is increasing the Total Factor Productivity (TFP). It sounds easy, but is hard to be realized in the reality. To increase TFP, there should be some steps as follows: (1) conducting the capital accumulation acceleration, (2) increasing the investment efficiency, and (3) increasing the quality of human resources (SDM). Those three steps cannot be done in a short time.

Based on the discussion above, unemployment persistence occurred all this time is possibly caused by the nominal wage rigidity and the real wage rigidity. It seems that those two types of rigidity are relatively hard to solve, even though it is not an impossible thing.

### **Job Search**

Unemployment trend may increase if the rate of job vacancy development is slower than the rate of jobseeker growth. The consequence is the time needed for job search becomes longer. Job search is so influenced by some factors, such as: sectoral shift, friction, mismatch, incomplete information, geographic barrier, and reservation wage.

Changes of sectoral shift in the national economy have been estimated as one of the sources of high unemployment level. The level of natural unemployment may increase because it is hard for the jobseekers to move from the decreasing sector into the developing sector. Every sector requires different qualification and experience types so that there should be re-

training and re-tooling processes for workers who move to the other sectors. In addition, really fast developing sectors are not always able to provide job vacancy as fast as the rate of work force growth.

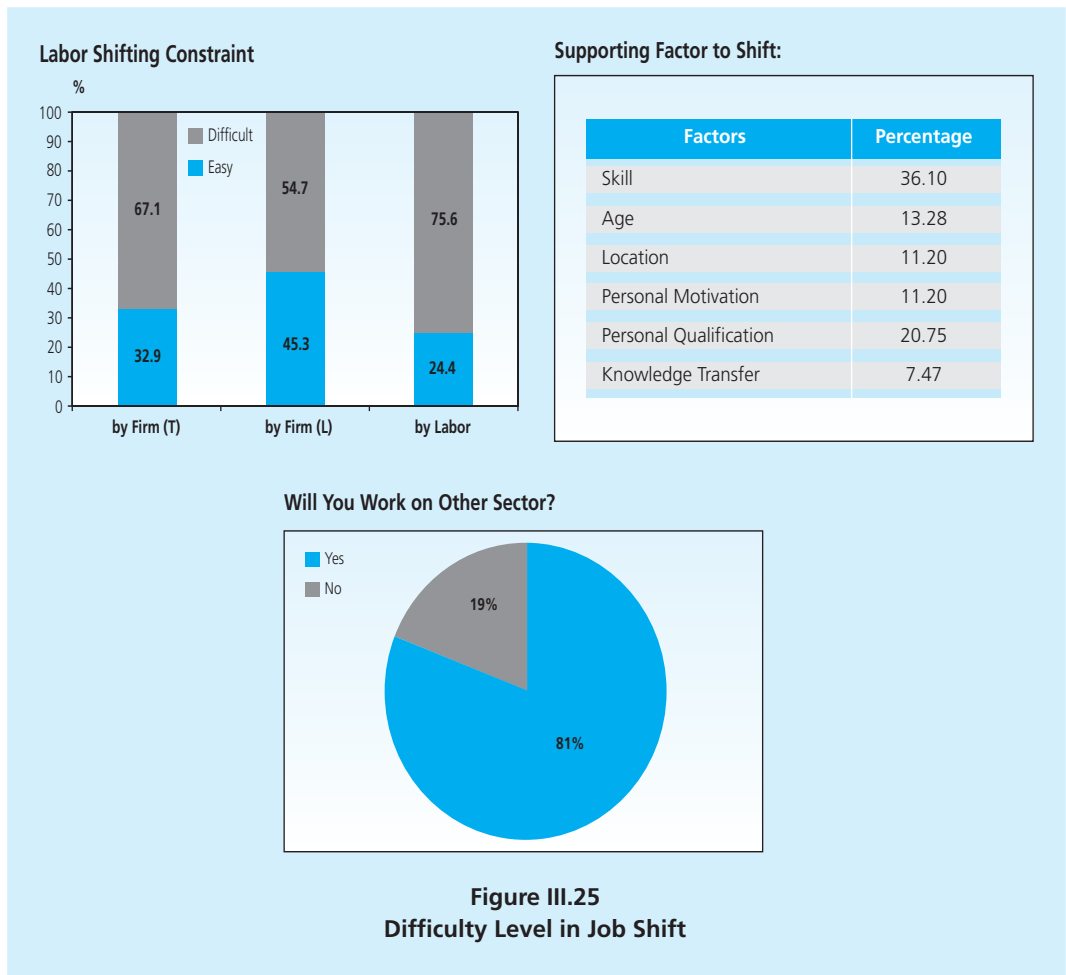
From the result of sectoral elasticity analysis as explained in Table III.13, there is evidence that elasticity of worker absorption in the service sector (0.253) is lower than in the manufacture sector (0.406), whereas elasticity of worker absorption in the manufacture sector is lower than in the agriculture sector (0.606). This is also consistent with the other findings which show that in provinces whose markets of manufacture sector and service sector are higher, the unemployment level is in fact more persistent even though the economic growth levels of service sector and manufacture sector tend to higher than the agriculture sector.

<b>Sector</b>	<b>Elasticity Score</b>	<b>R<sup>2</sup></b>
Agriculture	0.606***	0.4649
Industry (Manufacture)	0.406***	0.7772
Service	0.253***	0.9984

Note: \*\*\* significant in the real level of 1%

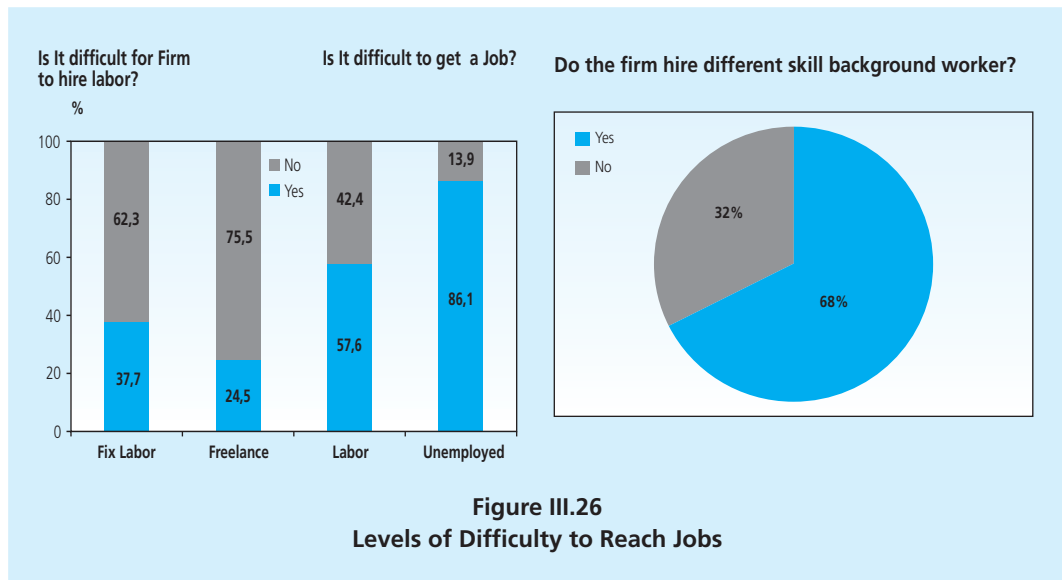
Economic development is usually marked by sectoral role shift from agriculture domination to manufacture and then to service. In fact, as it has been disclosed above, the elasticity of workers absorption is lower. In that case, this sector shift naturally will always be followed with the increase of natural unemployment. The important implication from such findings above is there needs on a strategy to increase growth quality by supporting some parts of manufacture sector and service sector, which is intensive labor. Nevertheless, the difficulty is on the production technology choosing, which is completely on the company's hand that is merely supported by a motive of looking for profit. If the full of workers technology is consistent with the motive of looking for profit, then the company will tend to choose such full of workers technology. Therefore, what the government should do is to develop intensive products to develop the labor intensive technology and to disincentive the capital intensive technology.

If the sectoral shift problem cannot be handled, there will be bigger problems in the frictional unemployment. This unemployment type occurs when a worker move from one work to the other work and should wait for a certain period. The increase of frictional unemployment is usually marked by a hard effort to move to the other work. Most of the worker respondents said it is hard to obtain a job suitable with their expertise and experiences (Figure III.25). Finally, workers have difficulties to conduct work shift.



Difficulties in looking for jobs suitable with the qualification are also experienced by the unemployed (86 percent) as explained in Figure III.26. So, generally unemployment workers do not have suitable qualification in accordance with the available job vacancy. This phenomenon is known as mismatch. Possibly, mismatch arises from unsuitability between educational system and economic structural change. This may be proved from the high level of unemployment from those whose educational background is general compared to those whose educational background is vocational. Graduates of vocational education seem more ready to work and companies view them as the worker sources that are ready to use. For that reason, recruitment and training costs expensed by companies for graduates of vocational education are lower than for those come from general education.

Implication of this finding indicates that there should be a fundamental change in the national educational system in order to have an expertise-based system. Nevertheless, this



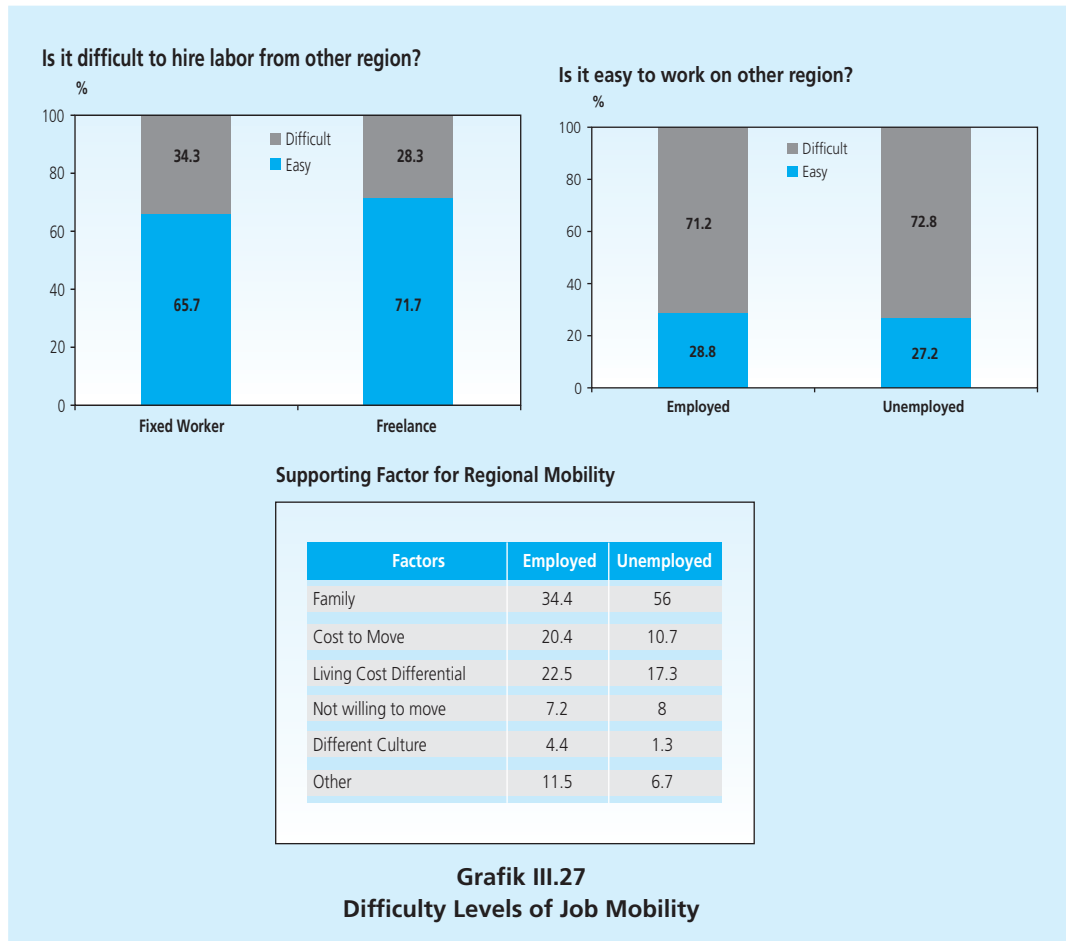
problem cannot be solved in a short time since it needs to provide appropriate infrastructures and teachers. In addition, the stigma works in the public is that vocational education is more inferior, it therefore should be vanished. This last thing seems more difficult to be done.

Unemployment increase is sometimes not just caused by the unavailability of job vacancy but also by information and geographic obstacles as explained in Table III.14 and Figure III.27. Information obstacle is mainly experienced by those whose educational level is low. They commonly obtain information on job vacancy from mouth to mouth and only some of them acquire such information from the mass media. They possibly are not used to read or access information from the mass media because of purchasing power problem. Besides, it is a fact that information on job vacancy available in newspaper for such low educational and non-experience people is only about 20 percent of all information on job vacancy advertised. The worse is: the workers service is in fact not the main source to look for information on job

Media	Firm	Unemployed Skilled	Unemployed Unskilled
Newspaper/Magazine	40.3	48.5	29.3
Labor Agency office	1.4	0	0.9
Internet	1.4	24.2	0
From friend and family	44.4	24.2	65.5
Printed advertisement or bulletin board	2.8	3	2.6
Other	9.7	0	1.7



vacancy for prospective workers (Table III.14). This indicates that information received from the labors service is possibly quite limited compared to information available in the mass media or worker provider agencies. In that case, the function of information provision in the workers service must be strengthened.



The next obstacle on the job search is the geographic factor. Facts found in the previous discussion show that there is sharp disparity in the regional unemployment. Even provinces, which are close to each others, may in fact have quite large different level of unemployment. For example, Banten Province has unemployment level lower than 5 percent compared to DKI Jakarta and West Java. In the econometric analysis, it is reflected that disparity between those provinces is more caused by different economic structure. More progressing provinces where manufacture and service sectors have larger markets; tend to have higher and more persistent level of unemployment.

From the survey result to some workers and the unemployed, it is found a relatively different figure. The main reason not to work in other regions is in fact not the economic factor; it is the physiological factor (family) and the different culture factor (Figure III.27). Implication from the geographical obstacle of job search is: it is not enough if the government attempts to run a very generic program of job vacancy construction without differentiating the characteristics of unemployment in every region. On the other word, every region should have its own anti-unemployment program. Implicitly, this demands regional government's creativity.

The last factor that may be the most important factor in influencing the length of job search is reservation wage. The higher wage expected by the unemployed, the more difficult for them to get jobs and the more time wasted to wait for the jobs. The most surprising thing is a fact that the reservation wage proposed by non educated unemployed workers tend to be higher than the minimum wage (Table III.15). Even though this more reflects the expectation on wage level, it is not common in a high unemployment situation. An attitude such like this tends to make the position of the unemployed is difficult since the wage they expect is higher than the wage received by most of workers. By being consistent to the theory, the findings of this study show that the decrease of reservation wage correlates with the length of unemployment time. The longer being unemployed, the lower reservation wage will be received.

In a country such as Indonesia, where social warranty system has not been developed appropriately and widely, it almost can be ensured that wage reservation is always influenced by the preference and expectation of the unemployed. Normally, the unemployed who own high reservation wage are those who can finance their unemployed period.

**Tabel III.15**  
**Decrease of Reservation Wage Against Minimum Wage**

Unemployed Time	Percentage decrease wage	
	Employed	Unemployed
1 month	25,07	24,8
3 month	26,02	27,6
6 month	28,29	31,4
12 month	31,96	35,3

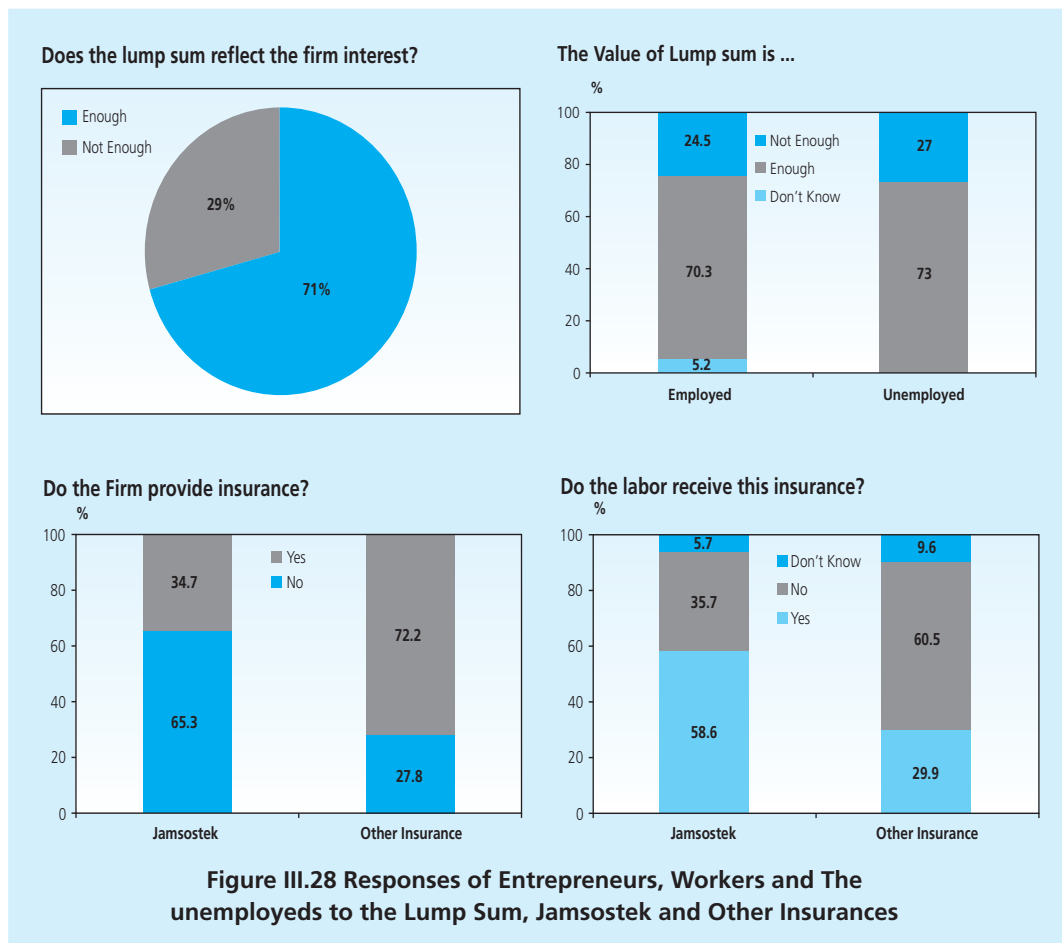
  

Unemployed Time	Number of Unemployed (%)	Decrease Wage (%)
1 month	62,5	24,84
3 month	13,82	22,50
6 month	6,58	21,53
12 month	1,97	47
> 12 month	15,13	0

### Other Factors

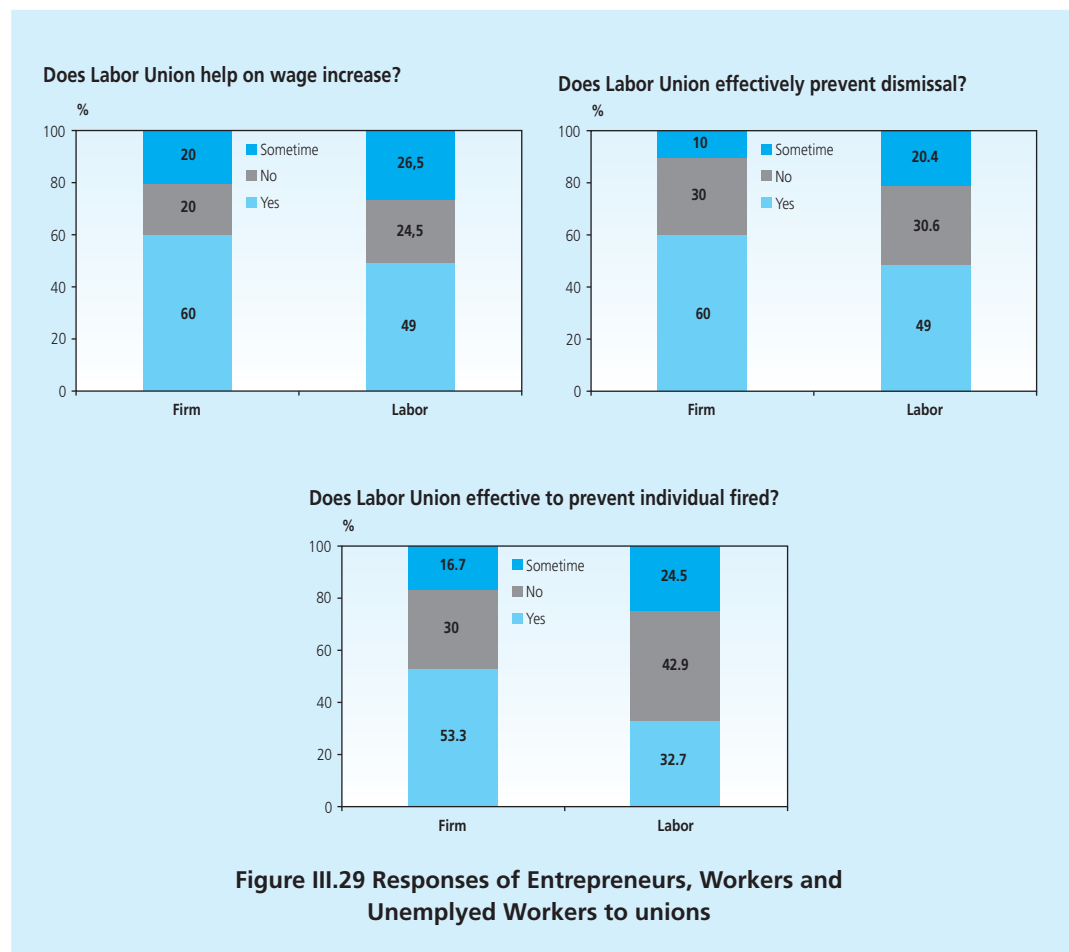
In spite of those factors above, there are some other things that at the same time may influence wage rigidity and job search. Such factors may be classified into three groups, namely regulation, roles of unions and adjustment mechanism. One of the most influencing regulation aspects to wage rigidity and job search is regulations regarding lump sum and social assurance. Regulations on lump sum will potentially increase reservation wage and then make the unemployment persistence get worse. In the survey, it is also found that regulations regarding lump sum are viewed by the workers and the company as a policy that have accommodated the interest of both parties (Figure III.28). Therefore, lump sum regulations are realistically hard to be revoked or reduced if not receiving political supports from the workers and the company.

The policy of worker social assurance, even though it is an obligation of each company to provide it, there are about one-third of companies in Indonesia that do not obey it. This is



consistent with the survey result on workers, which says that more than one-third workers are not protected with social assurance. This is possibly because such companies think that the premiums should be carried are too high. A topic that always becomes a debating material among the academics and the politicians is the roles of unions whose function is to unify the work power of individual to face a company that has monopsony power. Unions are usually viewed as a monopoly power that may collectively influence the wage system decision performed by the company. This is called as collective bargaining.

From the survey it is found a figure that the company views the unions as effective power for wage increase. Nevertheless, it is a fact that workers do not have too optimistic view compared to the company (Figure III.29). Possibly the company management has owned an assumption that the fight of unions for wage increase has a good success possibilities. The unions also represent the labor's interest to maintain their jobs. The company and the workers are actually

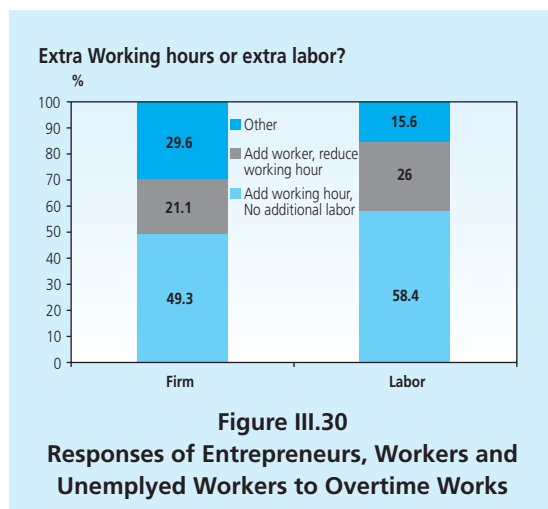


having a common perception that unions generally may prevent mass lay off. Nevertheless, individual lay off prevention performed by the unions is considered not too effective. It means that roles of unions have more collective dimension: wage increase of all employees and a negotiation with the company to prevent mass lay off.

The most surprising thing is the perception of the unemployed concerning the roles of unions. They should be antipasti. But the survey indicates that the unemployed have sympathy to the unions and view its existence as an advantageous thing (Figure III.29). In fact, the unions have contributions to make hard the position of job seekers.

To respond to the more hard condition in looking for jobs, the unemployed commonly have an ability to perform adjustments, mainly through the down skilling. The unemployed agree to work in any position with lower educational and experience requirements. In that case, as previously discussed, the most consistent level of unemployment is those who have low experience and education.

Besides such things above, there is another factor that causes companies don't want to absorb additional workers. Most of companies say that it is better to employ the existing workers within overtime work (Figure III.30). Meanwhile, workers in fact have almost the same opinion with companies. Companies seem to view that paying overtime work is more efficient than employing new workers.



**Figure III.30**  
**Responses of Entrepreneurs, Workers and Unemployed Workers to Overtime Works**

## V. CONCLUSION AND POLICY IMPLICATION

### V.1. Conclusion

Essentially, this study concludes that unemployment persistence in Indonesia fall in the category of disequilibrium unemployment persistence without self correcting mechanism, which means that persistence, happens outside the worker market equilibrium and does not have an automatic mechanism to return. In addition, such persistence arises from the slow process of capital accumulation, wage rigidity, the more length of job search and some other slow factors caused by the institutional factor of worker market.

The disequilibrium unemployment persistence may happen when the power and institutional management of labor market do not fully function to balance the labor demand and supply. On the other hand, persistence in Indonesia is marked by the more dominant trend component than the cyclical component. This type of persistence is marked by the increase of unemployment trend, which is a shift in the natural rate of unemployment from time to time.

It is said not having self correcting mechanism because it can be ensured that it is hard to go back to the long-term balance. Within such characteristic, it is very hard to expect the market mechanism can automatically handle unemployment. On the other word, there should be a hands-on strategy from the government.

The first source of unemployment persistence problem is the slow capital accumulation. In the post-crisis era, capital accumulation becomes slower, which is shown from the lower investment ratio compared to the era before the crisis. It is predicted that such low investment ratio associates with some following matters. First, the process of company restructurization performed by BPPN is too slow. Second, along with the crisis, there are capital flight and capital owner flight. Third, there were many companies and enterprises got bankrupt at the crisis and needed more time to come to life as they used to be. Forth, investment credit availability from the banking has not reached the previous level before the crisis. Fifth, the financial sector, mainly the capital market, has been contra productive to the real sector in which the return of financial asset is much higher than the profit of real sector.

The second problem source is the nominal and real wage rigidities. The nominal wage rigidity has made the failed wage becomes higher than it should be. There are three things that become the problem causes, namely: (1) costs to decrease the nominal wage are considered more important than the benefit, and (2) indexation of minimum wage to inflation, both backward and forward. Nevertheless, the survey result reflects that the first cause is the most important one. Besides, there is no string evidence which shows that relative wage and efficiency wage are the source of nominal wage rigidity.

The next fact, which is much more important, is the phenomenon of real wage rigidity. This phenomenon happens when the real wage paid to workers is exceeding the marginal productivity of labor. To decrease unemployment, the growth of real wage should be lower than the growth of warranted wage. In fact, both have the same level of growth, therefore it may be concluded that the real wage is failed to perform adjustment or on the word, it is rigid.

The third persistence source is the length of time needed for job search. Job search is really influenced by some factors as follows: sectoral shift, friction, mismatch, incomplete information, geographic barrier, and reservation wage. Sectoral shift of the national economy focuses on the larger market of manufacture and service sectors. In fact, those two factors have less elasticity of worker absorption than the agriculture sector. This causes worker sources of agriculture sector cannot be accommodated in both sectors. The increase of frictional unemployment is usually marked by the hard effort to change the job. Difficulties in looking for jobs suitable with the qualification are experienced by the unemployed as well. This phenomenon is known as mismatch, which possibly arises from the mismatch between the educational system and the economic structural change.

Information obstacle is mainly experienced by those whose educational level is low. They commonly obtain information on job vacancy from mouth to mouth and only some of them acquire such information from the mass media. They possibly are not used to read or access information from the mass media because of purchase power problem. The next factor, which becomes the obstacle of job search, is the geographic factor. Facts found in the previous discussion show that there is sharp disparity in provincial level. The more progressing provinces where manufacture and service sectors have larger markets tend to have higher and more persistent level of unemployment.

The last factor that may be the most important factor in influencing the length of job search is reservation wage. The most surprising thing is a fact that the reservation wage proposed by non educated unemployment workers tend to be higher than the minimum wage.

In spite of those factors above, there are some other things that at the same time may influence wage rigidity and job search. Such factors may be classified into three groups, namely: regulation, roles of unions and adjustment mechanism.

One of the most influencing regulation aspects to wage rigidity and job search is regulations regarding lump sum and social assurance. Regulations on lump sum will potentially increase reservation wage and then make the unemployment persistence get worse. The policy of worker social assurance, even though it is an obligation of each company to provide it, there are about

one-third of companies in Indonesia that do not obey it. Possibly because companies feel that the premiums should be paid are too high.

Roles of unions are considered as one of significant persistence sources. Unions are a monopoly power that may collectively influence the wage system decision and lay off policy performed by companies. This is called as collective bargaining.

The most surprising thing is the perception of the unemployed concerning the roles of unions. They should be antipathy. But the survey data indicates that the unemployed have sympathy to the unions and view its existence as an advantageous thing. In fact, the unions have contributions to make hard the position of job seekers.

## **V.2. Policy Implication**

Some important implications from the various findings discussed above. First, the unemployment increase happened all this time has less possibility caused by the low level of growth. In that case, improvement in the level of growth becomes not enough to handle unemployment problem.

Second, the government seems cannot totally depend on the market mechanism. There should be hands-on strategy especially designed to return the level of unemployment to the long-term balance direction. Europe's experience shows that the level of unemployment will tend to get worse and last for a long time if not handled appropriately. It is the interest of Indonesia's people to not get trapped in a situation similar with the unemployment pattern of West Europe.

Third, to solve the slow capital accumulation problem, the banking should be directed to accelerate investment credit. This may be done by creating special incentive for the banking such as lower assessment on the Balanced Activa According to Risk (ATMR). Besides, to make the real sector relationship is more productive with the capital market, it seems that the market capitalization should be supported more from the total share – not from the price. Special tax facility may be provided to companies issuing share in the Indonesia Stock Exchange.

Forth, the focus of monetary policy, which seems the most relevant one to handle the nominal wage rigidity, is inflation targeting. This is based on the findings that indicate limitation on the use of expansive monetary policy in handling unemployment. Monetary policies that attempt to support anticipated inflation and unanticipated inflation are absolutely ineffective since they will be highly compensated by the indexation mechanism, both backward and forward. What produced is in fact the persistent inflation without any influence to the unemployment



level. In the situation such like this, inflation targeting policy within lower target of long-term inflation becomes more relevant.

Fifth, to solve problems arise from the rigidity of real wage, the government may support warranted real wage to grow much faster. The main requirement is to increase the total factor productivity (TFP). To raise TFP, there should be some steps as follows: (1) accelerating the capital accumulation, (2) increasing investment efficiency and (3) increasing the quality of human resources. Such three steps may not be done in a short time.

Sixth, there should be a special initiative to improve growth quality by supporting some manufacture and service sectors, which are labor intensive..

Seventh, to reduce mismatch, there should be fundamental changes in the national education system to reach expertise-based education system. Vocational education should be more developed. Nevertheless, this problem cannot be solved in a short term since it needs appropriate infrastructures and teachers. Besides, the stigma works in the public that vocational education is more inferior should be vanished.

Eighth, the implication of geographical obstacles in looking for jobs is: it is not enough if the government attempts to run the program of creating very generic job vacancies without differentiating unemployment characteristics of each region. On the other word, every region should have its own anti-unemployment program. Implicitly, this demands creativity of regional governments.

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