Final Report

# A STUDY ON
# SMK LABOR MARKET INFORMATION
# BASED ON HUMAN RESOURCES POTENTIAL
# IN INDONESIA


**Prepared by:**

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**Directorate of Technical and Vocational Education**

**In Cooperation With**

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## Executive Summary

### On Demographic Transition and Change in Young Population Structure 2000-2015

- Indonesia has been successfully conducted population policy to reduce population growth rate, from 2.34 percent per annum during the 1971-1980 to only 1.45 percent during 1990-2000.
- Demographic transition changes the population age structure, the impact is on the explosion of number of population at the working age.
- The changes in the Indonesian Population age structure results the decrease in dependency ratio, thus will open "the window of opportunity".
- This golden moment will create a great opportunity to the economic development provided a proper management to handle those human resources otherwise it will even become an additional burden. Nevertheless, there are some prerequisites to meet.
- Thus, how to prepare those cohorts with high quality of education and how to train them with skills and competence in the increasingly competitive global market will be a major challenge for the Indonesia.
- One of the most effective to achieve the above goal is through the development of high quality of vocational high school.

### On Labor Supply Situation of Young Population

- In the next six years, the number of young population age (16-18 years old) is projected to decline from 12.73 million in 2009 to 12.12 million in 2015.
- In provincial level, the declining trend in this population group during 2000-2005 also happen in some regions.
- The School enrollment ratio is projected to increase from 60.06% in 2009 to 67.68% in 2015. However, a comparison calculation using the data from National Education Department resulted in a higher figure, i.e. 61.03 and 77.09 in 2009 and 2015 respectively.
- In national level, the increasing trend of school enrollment ratio is in line with the increasing number of high school student.
- Nationally, the number of population who are already enrolled in high school will be expected to increase from 7.65 million in 2009 to 8.2 million by 2015.
- West Java, Central Java and East Java are projected as the biggest contributor of high school student by 2015.

**On current condition of employment absorption**

- Vocational High School (SMK) graduates had been slightly more absorbed in labor market than SMU graduates.
- Despite of the lower absorption in 2007, SMK graduate labor force participation rate is still higher.
- Labor Force Participation Rate (*Tingkat Partisipasi Angkatan Kerja*) of SMK graduates had been continuously higher than that of the SMU graduates within the last six years. This reflects 2 things: 1) SMK graduates are more likely to enter the labor market compared to SMU graduates, and 2) Despite declining trend in employment rate, SMK graduates are more encouraged to search for job compared to SMU graduates.
- Proportion of SMK graduates within **professional-managerial** level is **larger** than SMU graduates.
- The absorption rate of SMK graduates is higher than SMU graduates within 2 fast growing sectors namely **manufacturing and services**.
- Within other sectors such as mining, electricity/water/gas and constructions SMK graduates are more likely to be absorbed in labor market than SMU graduates.
- In Financial sector (2007), SMK graduates are slightly better in terms of absorption rate than SMU graduates.
- SMK graduates are more likely to be absorbed in **formal sector** than SMU graduates, thus this finding reflects that SMK graduates have **a better chance to get a more decent and secured job.**
- SMK graduates **enjoyed relatively higher wages** compared to SMU graduates both in Professional-Managerial and Non Professional Managerial occupations. This reflects a premium in wage for SMK graduates to compensate their productivities and relatively higher skills.

**On mapping of regional potentiality as a foundation to develop and to promote vocational high school (SMK) based on province specific**

- Based on LQ (Location Quotient) indicator, each province has each leading sector/s.
- Absorption of labor in Agriculture still dominates most of the province in Indonesia, except for DKI, West Java and BANTEN, RIAU, East Kalimantan.
- Manufacturing sector is likely become the important sector for some provinces,

i.e.: West Java, BANTEN, Central Java, East Java and East Kalimantan.

- While Trade, Hotel and Restaurant sector are likely to be potential sector in BENGKULU, Java (except for BANTEN), Bali, West Kalimantan, MALUKU and North MALUKU.
- Transportation and communication become important sector in almost all regions except for NAD, RIAU, SUMSEL, LAMPUNG, BABEL, JABAR, JATENG, JATIM, KALTIM and PAPUA.
- Financial sector, becomes sector base for two regions only, namely DKI and DIY. Particularly, this sector becomes the most contributors for DKI.
- Service sector is likely to be the essential sector in all provinces, except for NAD, RIAU, SUMSEL, LAMPUNG, BABEL, JABAR, BANTEN, JATIM, KALSEL, KALTIM, MALUT and PAPUA.

**On Policy Recommendation**

- It is strongly required to enforce the implementation of SMK expansion, while it is also crucial to improve the quality of its graduates to meet the industrial demand. Otherwise, the expansion of SMK will become a new boomerang for national labor policy in the future.
- It is urgent to initiate and to promote the revision of curriculum that meets the demand for specific and skilled workers (link and match with the industry within the regional/provincial/local level).
- Nevertheless, the study only relies on secondary data which, in some extents, has limitation. There are issues that are not captured in the quantitative survey like the SAKERNAS. Therefore, there is a need to conduct fieldwork, both qualitative study and primary survey, to enrich and to clarify the findings from the result of this study.
- The above recommendation is essential to improve the quality of policy making related to vocational education. In addition, it is also important to promote more focused program implementation toward 2015.

## 1. Introduction

### 1.1. Background

**The successful population control policies have reduced Indonesia's population growth, increased life expectancy, and therefore created larger population at age 15-29 years old**. The fertility rate has been reduced substantially since the program first implemented in early 1970s. Reduced number of children was improving the welfare of Indonesian families. Mothers with fewer children were able to improve investments for children, especially for health and education. Young adults at age 15-19 years old who were born on 1989 and 1993 are the products of successful family planning. Larger young adult population means increasing number of intake to the labor market.

**Therefore, there is a need to prepare the intake to have skills and competence to meet the demand of labor market**. With improved investment in human capital, this cohort is expected to have better quality and higher productivity of labor. To meet the challenge, Department of National Education (DIKNAS) through Directorate of Vocational Education (Directorate SMK) has initiated the preparation with balancing the proportion between vocational and general secondary education. In 2015, it is expected that the proportion of enrolment will reach the target to 70 percent of vocational and 30 percent of general secondary schooling. To attain the target, detailed information about supply and demand for young working population will help vocational education to prepare their students with curriculum based on competence demanded by the market. It will also help to identify regions to conduct youth employment creation by developing sectors which are suitable with educational profile of young working population.

### 1.2. Policy Objective

- To provide information needed for macro policy making and strategies to increase the quality of competence based human resources.
- To support regional economic growth by optimizing the capacity and competency of vocational senior high school (SMK)

## 2. Research Method

### 2.1. Research Question

- What are the demographic and education profiles of young population by province in Indonesia?
- How is the comparison of current labor absorption by general and vocational high school in Indonesia
- What kind of the Labor Market Information will be needed to develop vocational secondary school with regions specific?

### 2.2. Study Approach

This study will focus on secondary data analysis using 2002-2007 National Labor Force Situation Survey and 2005 Statistics Industry, and results of Population Projection 2005-2025 developed by BAPPENAS, BPS and UNFPA. The analysis will focus on:

- Review of the demographic transition over the last 10 years and analysis on the growth of young population up to 2015, using Indonesia Population Projection 2000-2015.
- Trend analysis on the situation of young labor supply and employment by province, education, sectors[1] (9 main industries), and occupation using data from National Labor Force Situation Survey (SAKERNAS) 2000-2007 and some literatures related to.
- Analysis of industrial mapping and characteristics by province using GDP statistics and Industrial Statistics by Statistics Indonesia.
- Projection of secondary school age population to 2015

Meanwhile, the content of this research paper will be structured as follows. ***First***, the background and the significance of the study will be elaborated in section 1. A brief explanation on the methods and approach used in the study will be reviewed in **section 2**. **Section 3** will describe the demographic transition in the Indonesian population

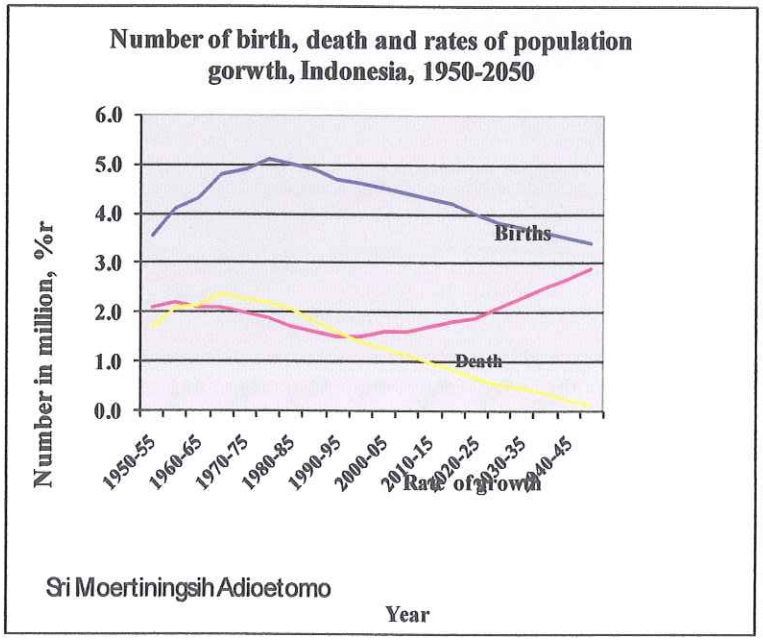
[1] These sectors consist of 9 main industries, namely 1) agriculture, forestry, hunting, and fishery; 2) mining and quarrying; 3) manufacturing industry; 4) electricity, gas, and water; 5) construction; 6) wholesale trade, retail trade, restaurant, and hotels; 7) transportation, storage, and communication; 8) financing, insurance, real estate, and business services; 9) community, social, and personal services.

structure while **section 4** will analyze the supply of young age labor force and its potential in Indonesia. **The Fifth section** will elaborate employment absorption in correlation with educational attainment and will focus on the analysis of employment absorption by vocational and general high school. **Section 6** will analyze the regional aspect of vocational high school development. From this analysis, we will be able to provide an academic-based support for the development of vocational education in order to support regional economic growth. The last section will summarize and conclude the study, thus provide policy recommendation.

## 3. A Brief Review of Demographic Transition and Change in Young Population Structure 2000-2015

### 3.1 Population dynamics and demographic transition

**Figure 3.1 the Indonesian demographic transition, past and future**



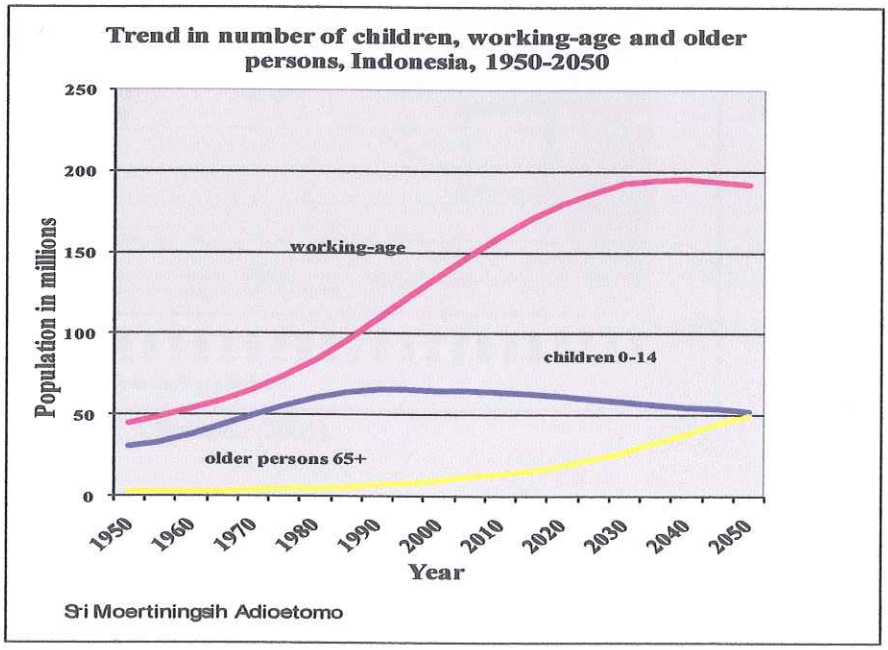

Source: Adioetomo (2005).

**Indonesia has successfully conducted population policy to reduce population growth rate, from 2.34 percent per annum during the 1971-1980 to only 1.45 percent during 1990-2000.** It is expected a further decline to only 1.18 percent during the years 2010-2015. The decline in population growth rate was among others due to the decline of birth rate. However, the number of women at reproductive age (15-49 years)

still grows from 57.3 million in 2000 to 66.8 million in 2010 and 68.9 million in 2015. These large numbers give births to about 4.3 million babies per year and are stable through 2015. At the same time, the improvement in health status of the population increases life expectancy from only 45 years in 1971 to 65.4 in 2000. It is expected to increase again to 71.5 years in 2015. This is called the demographic transition as it is shown in Figure 1.

**Demographic transition changes the population age structure, the impact is on the explosion of number of population at the working age.** Most of this working age population is young of 15-24 years old.

**Figure 3.2 Trends in numbers of the working age population**




Source: Adioetomo (2005).

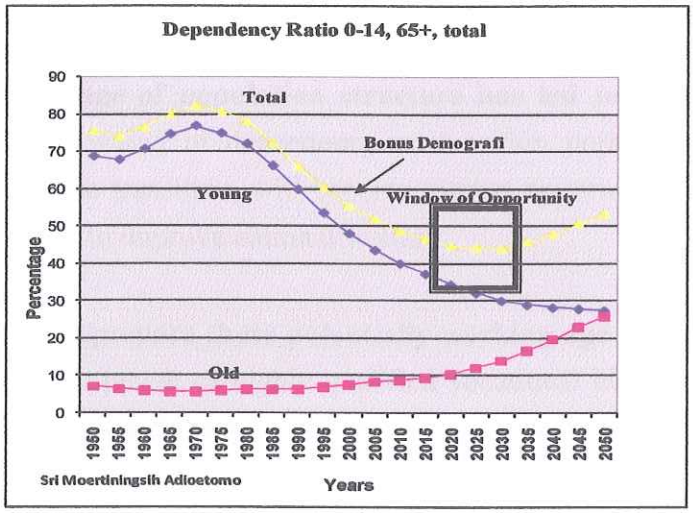
### 3.2 Explosion of young population and the potential for economic growth.

**The changes in the Indonesian Population age structure results the decrease in dependency ratio[2], thus will open "the window of opportunity".** This is due to the reduction in the proportion of non-productive population and at the same time, an

[2] **Dependency ratio** is the comparison of non-productive age population (children under 15 years old plus more than 65 years old population) to the number of working population of 15-64 years old.

increase in the proportion of the working age population. The 1971 Population Census recorded 100 workers bore the burden of 86 children, while in 2000 census it declines to only 54 children. If this trend goes on, the dependency ratio is predicted to decline to 44 children per 100 workers in 2020-2030. This is a golden moment called the **'window of opportunity'**, an opportunity to increase economic growth and therefore increase the people's welfare. The window of opportunity will boost economic growth by creating a huge potential worker and increasing investment, thus it will increase the capacity of the nation to develop.

**Figure 3.3 Indonesia – The window of opportunity**




Source: Adioetomo (2005).

**However, there are some pre-requisites so that this golden moment will create an optimal benefit to the economic development otherwise it will even become an additional problem.** On the one hand, there should be a number of employment opportunity created in the economy to absorb the abundance of worker available. On the other hand, the potential worker should be capable and qualified enough so they will be absorbed in the market. Thus, how to prepare human capital with high quality of education, providing them with skills and competence to be employable in the increasing competitive global market will become a major challenge for the Indonesia. This window of opportunity will only open in a very short period of 2020-2030 and will happen only once in a life time of the Indonesian population. Therefore, all-means effort has to be put to increase the quality of human capital with skills and competences to challenge the competitive global market. This can be done by preparing school leavers to be employable, among others through the **development of high quality of**

**vocational high school**.

### 3.3 Summary

**Indonesia has successfully managed population policy**. This resulted in declining growth rate of population from 2.34 percent per annum during the 1971-1980 to only 1.45 percent during 1990-2000.

**There has been transition of demographic that changed the population structure**. One of the most significant impacts is on the explosion of working age population number.

**Meanwhile, the change of population structure has led to so-called 'window of opportunity**. The declining of dependency ratio within population structure, as an impact of demographic transition, will become a great opportunity to boost economic growth and ultimately to improve national welfare.

**Nevertheless, how to prepare those potentially working age population is the most strategic issue**. Development of highly qualified vocational high school is among the efforts to create an optimal benefit to the economic development otherwise it will become an additional burden for the economy as a whole.

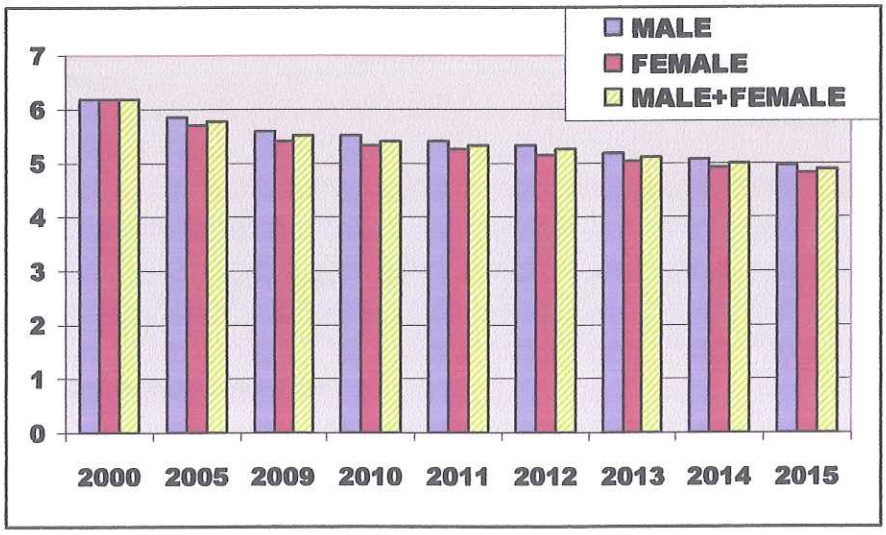
The next section will review the current condition of young age working population from supply side.

## 4. Analysis of Labor Supply Situation of Young Population

### 4.1. Number of young high school age population 2009-2015

**In the next six years, the number of young age population (16-18 years old) is projected to decline from 12.73 million in 2009 to 12.12 million in 2015.** Based on the Population Census 2000 and Inter-census Population Survey 2005, the number of young age population aged 16-18 years old is 12.70 million and 12.68 million respectively. The declining trend in this population group is caused by the decline in the birth rate in Indonesia. Apart from that, the inter-provincial migration can also contribute to the trend. Though the trend is declining, the absolute number of the group is still significant.

**Figure 4.1 Share of 16-18 years old population to total population**




Sources: SP 2000 and SUPAS 2005

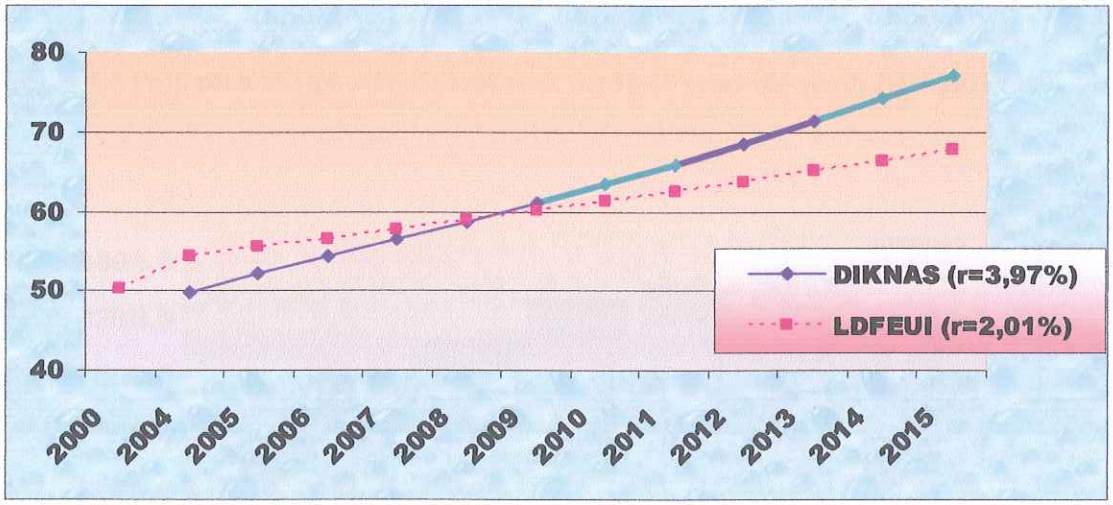
Note : 2009-2015 are Projections

**In provincial level, the declining trend within this population group during 2000-2005 also happen in some regions.** It happens in some province in Sumatra (RIAU, JAMBI, and LAMPUNG), Java (except West Java and BANTEN), Kalimantan (except for South Kalimantan) and SULAWESI (except for South East SULAWESI).

**Nevertheless, the increasing trend is projected in some region.** For 2009-2015 period, such regions as North SUMATERA, RIAU, South SUMATERA, BENGKULU, BANGKA BELITUNG, West Java, BANTEN, Bali, Central and East Kalimantan, and Southeast SULAWESI are predicted to have increasing trend in the number of young population age.

### 4.2. Trend in high school enrollment ratio and projection in the future.

**Figure 4.2 Projection of High School Crude Participation Rate 2009-2015**




Source: MONE; SUSENAS 2000-2004

Note:

1. Projection of DIKNAS = 2004-2009;
2. Projection of LDFEUI = 2009-2015

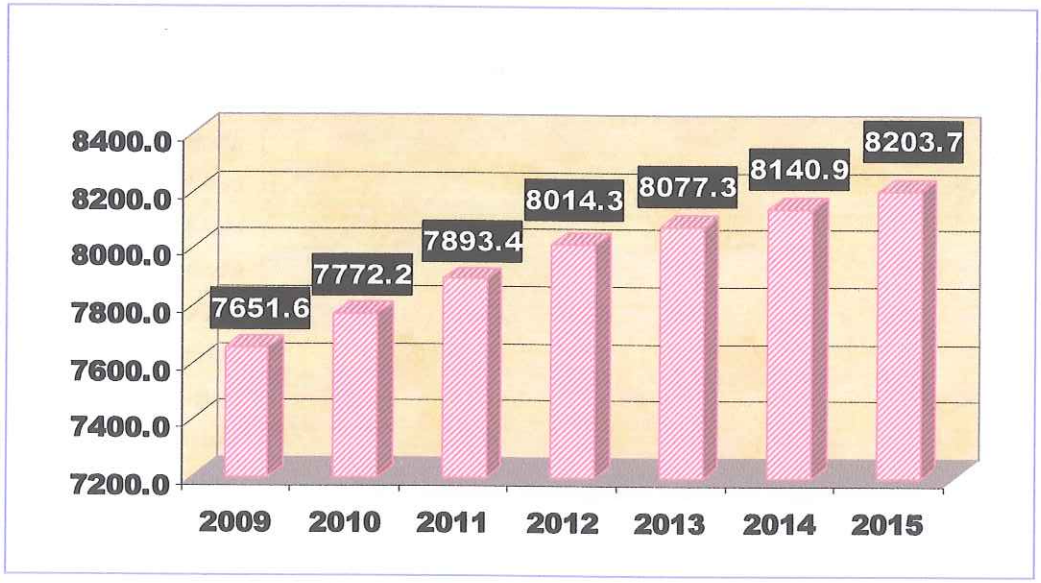
**The high school enrollment ratio is projected to increase from 60.06% in 2009 to 67.68% in 2015.** However, a comparison calculation using the data from National Education Department resulted in a higher figure 4.2, i.e. 61.03% and 77.09% in 2009 and 2015 respectively. Based on Socio-Economic National Survey, National high school enrollment ratio in 2004 recorded as slightly above 50%, i.e. 54.38%. Meaning to say, five out of ten populations aged 16-18 years old are enrolled to high school. In the future, high school enrollment ration is predicted to keep increasing 2% a year in 2000-2004 period. As it happened in national level, the similar trend would likely occur

in provincial level as shown within figure 4.4.

**In national level, the increasing trend of school enrollment ratio is in line with the increasing number of high school student.** The number of high school student is predicted to increase from 7.65 million in 2009 to 8.20 million in 2015. Nevertheless, unlike national trend, decreasing trend is predicted to occur in Java (except for West Java and BANTEN-the largest contributor to high school new enrollment in Indonesia-, LAMPUNG and West NUSA TENGGARA). Meanwhile, the number of high school students will keep decreasing by 2011 in South SULAWESI, MALUKU, and Papua. The similar trend will also occur in South Kalimantan and North SULAWESI by 2013.

### 4.3. Estimation of young population who will enroll to SMK and SMU 2009-2015

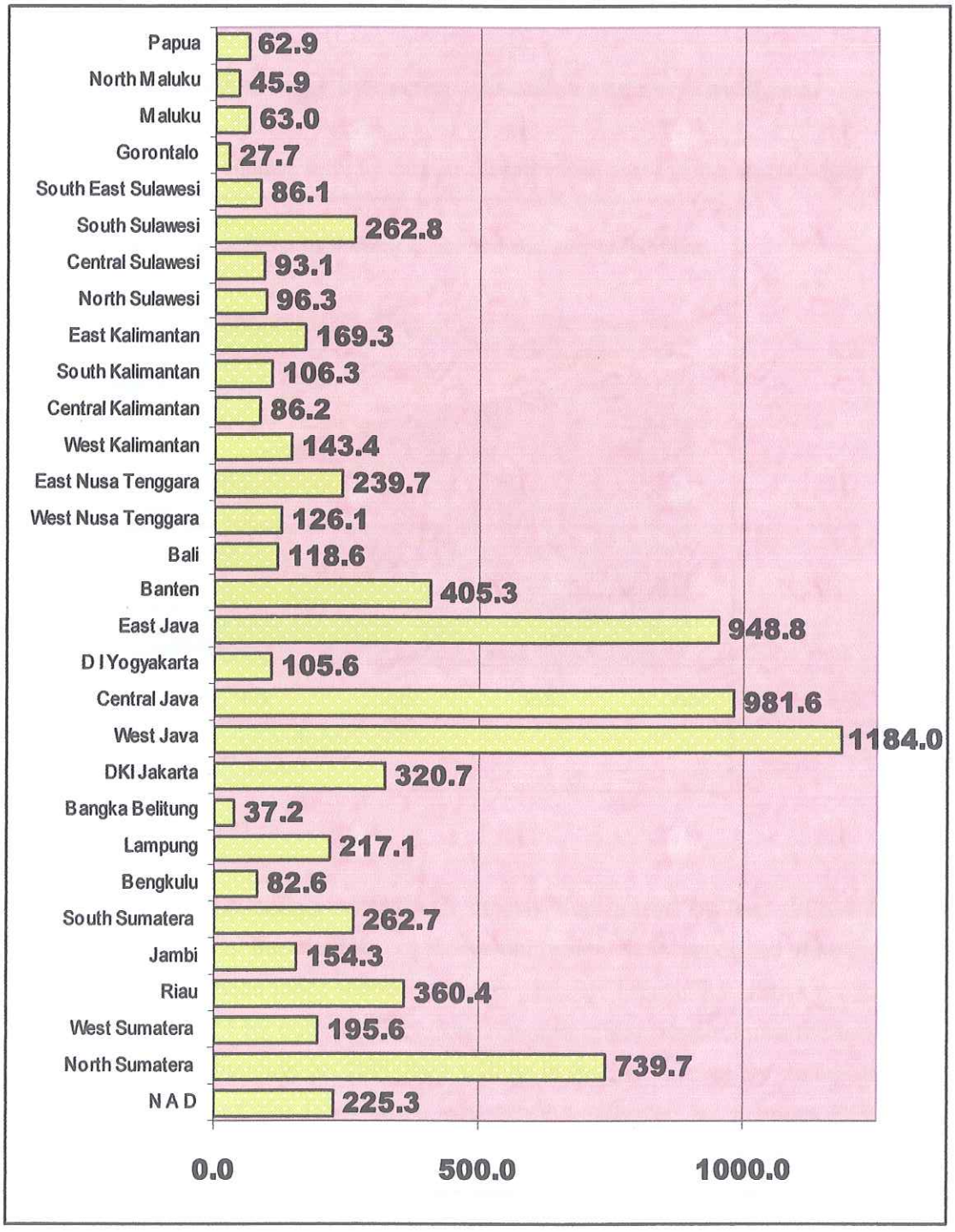
**Figure 4.3 Projection of high school enrollment for 16-18 years old youth 2009-2015 (000)**




Source: MONE; SUSENAS 2000-2004

**Nationally, the number of population who will enroll to high school is predicted to increase from 7.65 million in 2009 to 8.2 million in 2015.** Nevertheless, some regions are predicted to have the reverse trend, including Java (Except for West Java and BANTEN), West NUSA TENGGARA, South SULAWESI, MALUKU and Papua. Meanwhile, West Java still becomes the largest contributor to high school new enrollment.

**Figure 4.4 Projection of high school enrollment for 16-18 years old youth 2015 (000)**



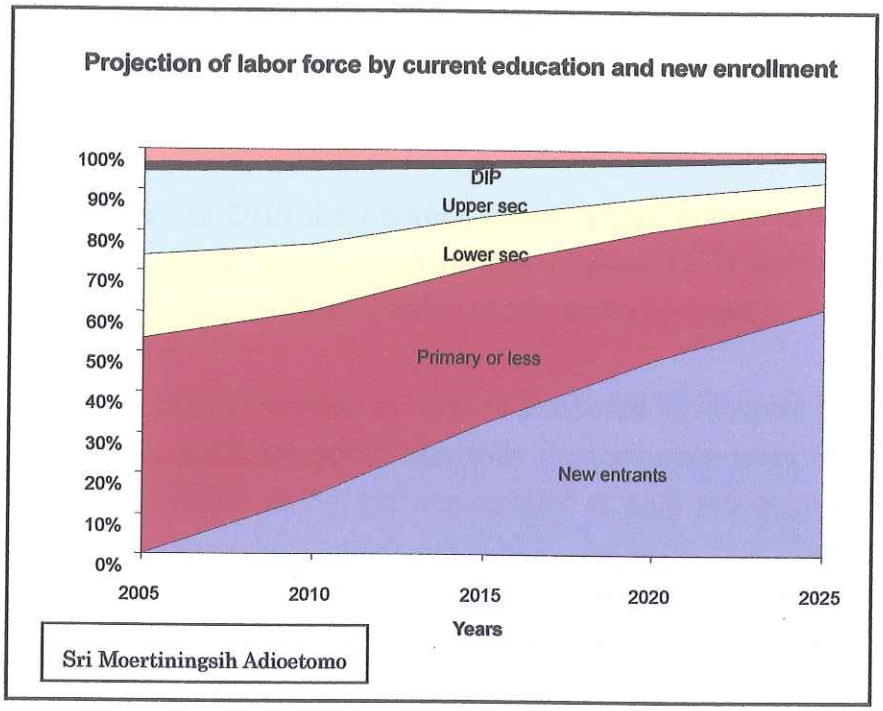

Source: MONE; SUSENAS 2000-2004

**West Java, Central Java and East java are projected as the biggest contributor of high school student numbers by 2015.** As the densest region within the nation, it is no

surprise that those three provinces will predicted as the most significant contributors to the high school enrollment number by 2015.

### 4.4. Projection of labor force by current education and new enrollment

**Figure 4.5 Projection of labor force by current education and new enrollment 2005-2025**




Source: Adioetomo (2005).

**The structure of Indonesian workers is mostly dominated by less skilled and less educated workers.** If the current condition continues, it is predicted that the future profile of the Indonesian labor market remains gloomy. Figure 4.5 shows projection of labor force 2005-2025 by current education. Assuming that people enter the labor force with only primary education in 2005, they will be in the lower level for their entire lives. By 2015, one third of the labor force will be characterized by primary educational background. They mostly do not have skills and competence to meet the increasing demand for skilled and highly competent workers. These people who already in the labor force should be provided with adequate training such as competence-based training and so forth.

**Hence, the most important thing is how to boost the quality of labor force in the future by improving educational attainment, at least completing high school level.**

However, high school leavers are not guaranteed to meet the demand for labor in the industry. High school leavers (if they are not willing to enroll to universities) should be prepared to enter the labor market. The hope is in the number of youth who will enter the labor market (The blue area). That is those who will finish junior high school, increasing the number who will enter senior high school. If these people, who will enter the labor market, are well prepared with skills and competence, they will be able to remedy the gloomy profiles of the future labor force.

### 4.4. Summary

**From 2009 to 2015 the number of young age population, particularly for 16-18 years old group, is predicted to decline from 12.73 million to 12.12 million.** The same trend will also happen within some provincial level.

**The high school enrollment ratio is predicted to increase from 60.06% in 2009 to 67.68% in 2015**. Moreover, nationally the increasing trend of high school enrollment ratio is accompanied by growing number of high school student. Quantitatively, the number of high school enrollment is estimated to increase from around 7.65 millions in 2009 to 8.2 million by 2015. Regionally, West Java, Central Java, and East Java are predicted as the most significant contributors to the number of high school students by 2015.

**The structure of Indonesian workers is mostly still dominated by less skilled and less educated workers.** Hence, the most important thing is how to boost the quality of labor force in the future by improving educational attainment and continuously promoting competence-based training.

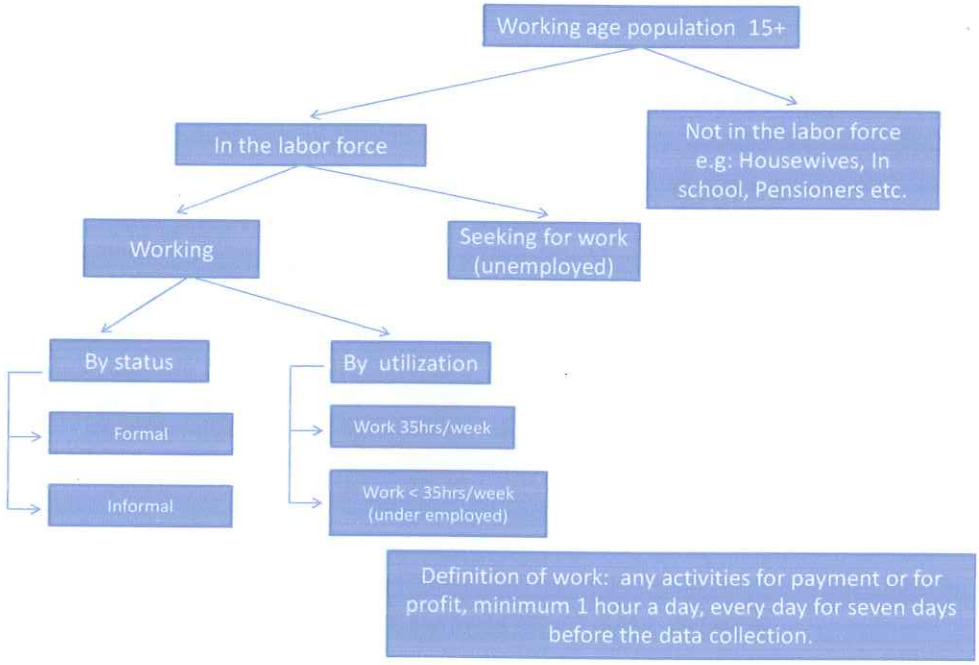
Then, the next section will elaborate current condition of employment absorption and its challenges.

## 5. Analysis of current condition of employment absorption

The section will examine the vocational high school graduates potential in improving labor market condition. For the purpose, it would be much better to compare SMK graduates performances with its counterparts namely SMU graduates. Before reviewing the current condition of young age employment, it is essential to understand the concept and definition of labor force applied by Statistics Indonesia (then BPS).

### 5.1. The concept and definition of labor force

**Figure 5.1**




Source: Ehrenberg and Smith (2009), pp. 27.

**Labor force** is, as defined by the International Labor Office (ILO), **a concept divides population into working age population (aged 15≤ years), and non working age population (aged less than 15 years).** Labor force is persons of 15≤ years old who were working, temporarily absent from work, but having jobs, and those who did not have work but were seeking for work (unemployed - *pengangguran*). Those who were working can be identified whether they were working at least 35 hours per week, or less than 35 hours per week (underemployed). In terms of status of work, this can also be

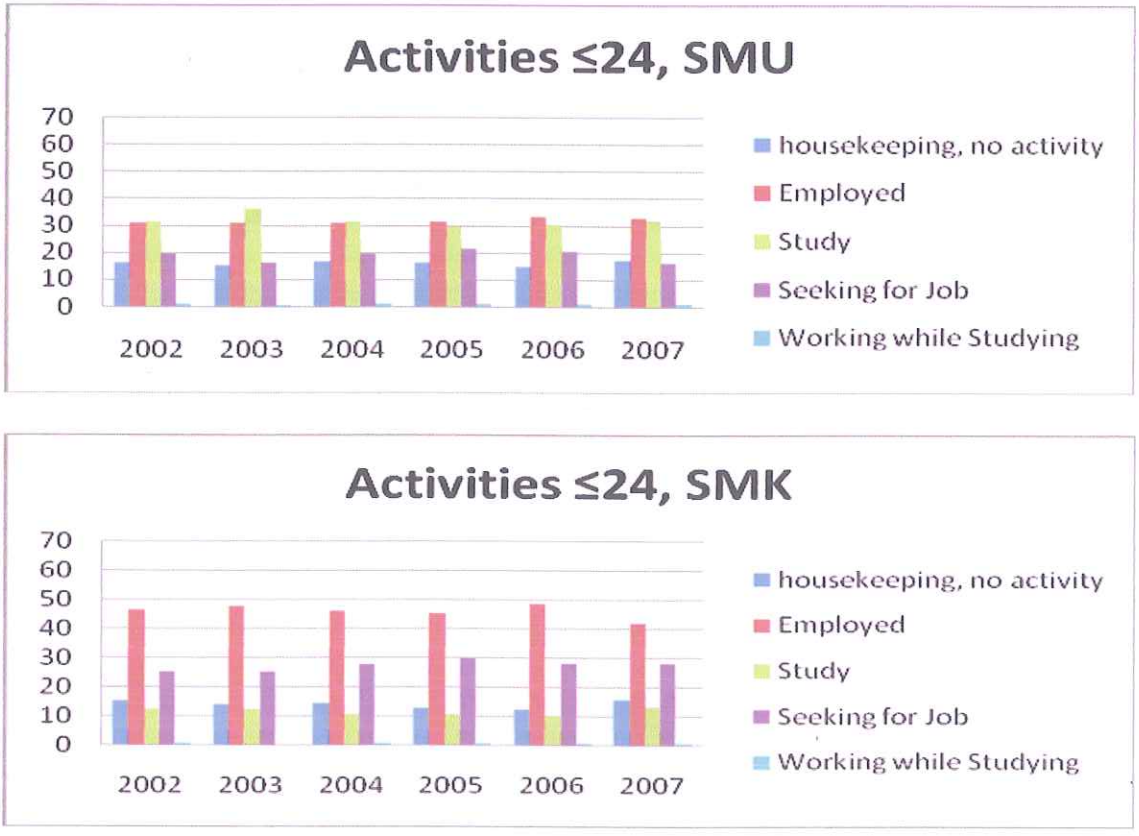
identified whether they were working in the formal sector or informal sector.

**The definition of working or being employed (or having a job)**[3] applied by Statistics Indonesia, is an activity done by a person who worked for pay or assisted others in obtaining pay of profit for the duration at least one hour during the survey week.

### 5.2. Employment absorption by education and trend of Labor Force Participation Rate

**Vocational High School (SMK) graduates had been more absorbed in labor market than SMU graduates.** Despite the declining trend since 2006 and the exceptionally lower rate in 2007 than previous years, the rate of SMK graduates absorption in labor market is persistently better than SMU.

**Figure 5.2 Structure of working age population by activities (≤24 years old)**



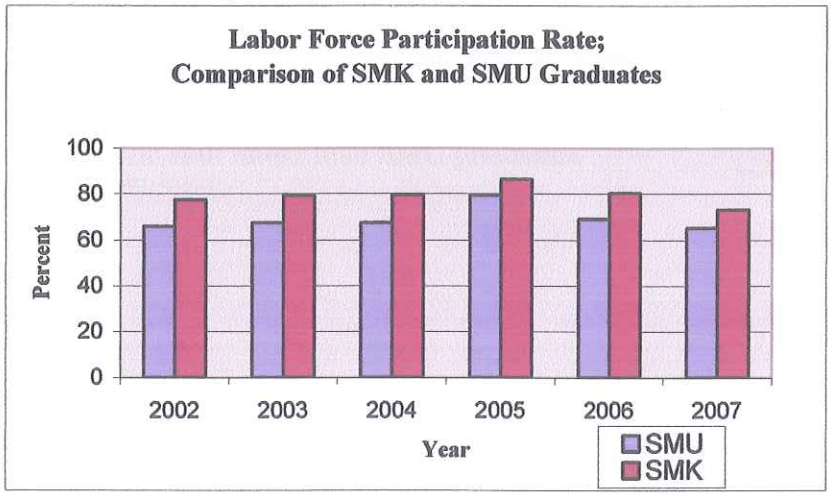

Source: Calculated from SAKERNAS 2002-2007

[3] Statistics Indonesia, *Labor Force Situation in Indonesia February 2007*, Jakarta, pp. xxv.

**Along with the higher rate of employment level for SMK graduates, percentage of SMK graduates seeking for job is persistently higher than SMU graduates.** This could be interpreted as follows. ***First***, SMK graduates are relatively more selective in deciding type of job since they were educated and trained with specific skills and some competency. This background enables them to wait and to see types of jobs. From this perspective, SMK graduates have relatively more advantages than SMU graduates. ***Second***, the higher percentage of seeking for job for SMK graduates could be interpreted that they are actively searching for better job than current condition. This is highly possible for SMK graduates since they have more specific skills and some competences, the one that SMK graduates lag behind.

**The percentage of SMK graduates working while studying is comparable with SMU graduates.** In addition, particularly the percentage had been increased in 2007. This reflects while working, SMK graduates manage to improve and upgrade their skills by going on to higher level of education.

**Figure 5.3 Labor Force Participation Rate**

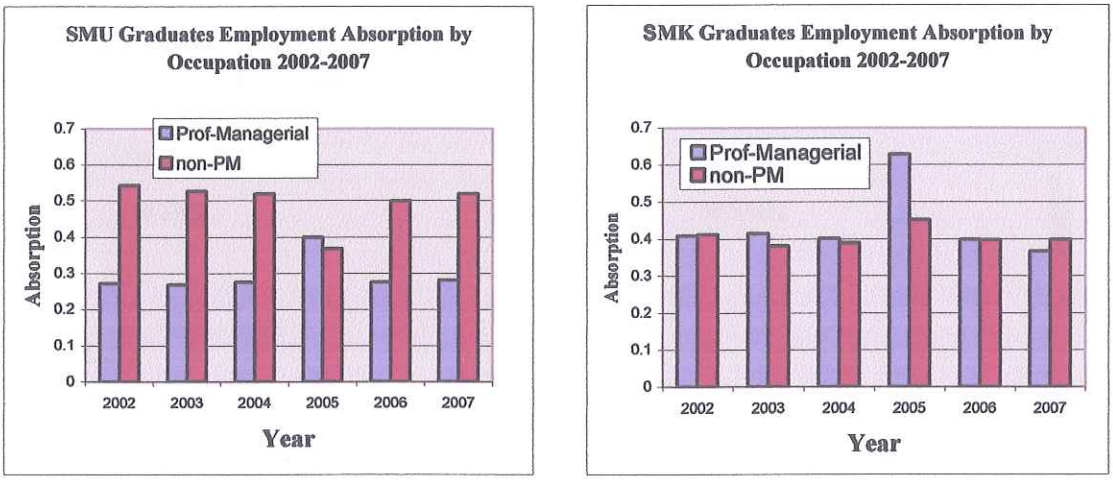



Source: Calculated from SAKERNAS 2002-2007

**The rate of labor force participation of SMK graduates had continuously been higher than SMU graduates within last six years.** This reflects two things. ***First***, SMK graduates are more likely to enter labor market compared to SMU graduates. ***Second***, SMK graduates are more encouraged to actively seek for job than SMU graduates.

## 5.3. Employment absorption by occupation[4]

**Figure 5.4 Employment Absorption by occupation (comparison between SMK and SMU graduates)**




Source: Calculated from SAKERNAS 2002-2007

**Proportion of SMK graduates within professional-managerial level is larger than SMU graduates.** This clearly indicates two important things. ***First***, SMK graduates are proportionately more absorbed in type of occupation requires more specifically and highly-skilled level. ***Second***, SMK graduates were relatively more prepared by school with specific skill rather than SMU graduates.

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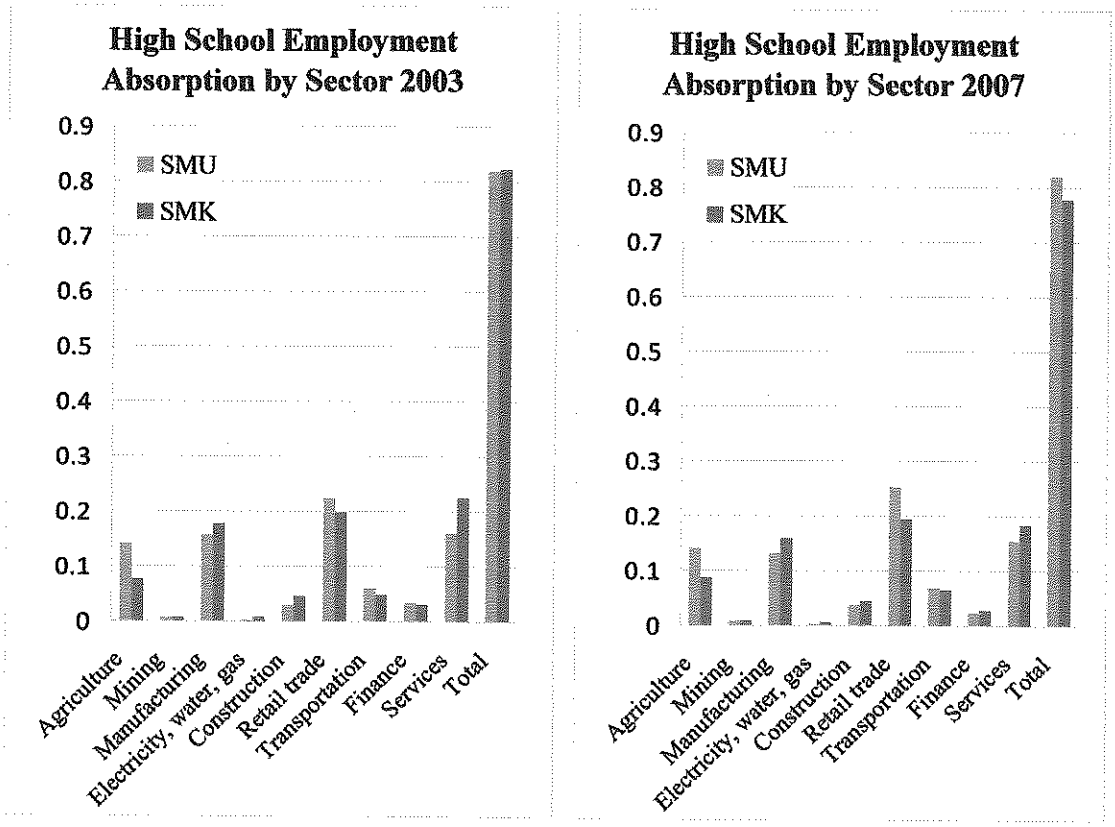
[4] The report classifies occupation into 2 categories, namely 1) Professional-managerial; and 2) Non Professional-managerial. These categories refer to main occupation on 2007 National Labor Force Survey (SAKERNAS 2007). Category 1) consists of code 1) Professional, technical, and related workers; code 2) administrative and managerial workers. While category 2 covers code 3)clerical and related workers; code 4)sales workers; code 5)service workers; code 6)agricultural, animal husbandry, forestry workers, fishermen, and hunters; code 7)production and related workers; code 8)transport equipment operators; and code 9)casual workers.

## 5.4. Employment absorption by main industry[5]

**Figure 5.5 Employment absorption by sector, 2003 and 2007 (comparison between SMK and SMU graduates)**




Source: Calculated from SAKERNAS 2002-2007

**The absorption rate of SMK graduates is higher than SMU graduates within two fast growing sectors, namely manufacturing and services.** As those two sectors have essential role in driving structural transformation from relatively more traditional economy to relatively more modernized economy, the higher absorption rate of SMK graduates in those sectors reflects increasing demand for relatively more skilled and highly competent workers. From this view of point, they have more advantage than SMU graduates since they were intensively prepared with specific skills and certain

[5] Main industries comprises 9 sectors, namely 1) agriculture, forestry, hunting, and fishery; 2) mining and quarrying; 3) manufacturing industry; 4) electricity, gas, and water; 5) construction; 6) wholesale trade, retail trade, restaurant, and hotels; 7) transportation, storage, and communication; 8) financing, insurance, real estate, and business services; 9) community, social, and personal services.

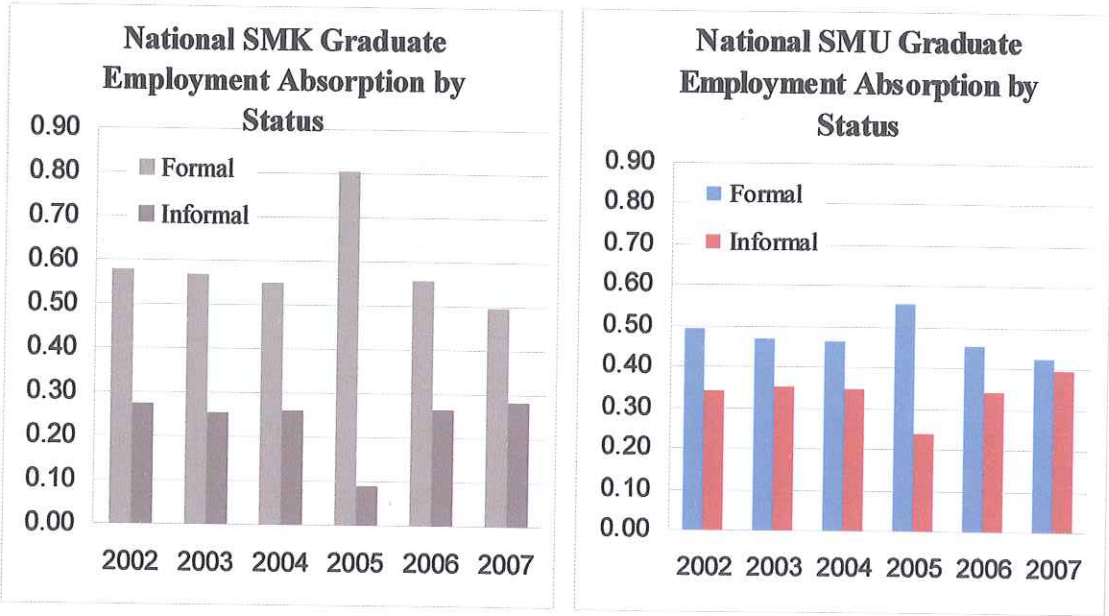
competences.

**In addition, within other sectors such as mining, electricity-water-gas, and construction, SMK graduates are more likely to be absorbed in labor market than SMU graduates.** Mining and electricity-water-gas sectors are closely associated with essential energy, while construction sector is deeply related with infrastructure development. Energy security are vital issues in the future since its indispensable role to support industrialization, while as an emerging country, Indonesia still needs to improve the quality of her infrastructure to boost economic growth which will ultimately impact on national well-beings. This reflects that increasing absorption rate of SMK graduates within those sectors should stimulate school managements to improve both teaching methods and curriculum quality to prepare well-trained and well-prepared graduates in order to meet the growing demand from those prospective sectors.

**Surprisingly, within financial sector, SMK graduates had been slightly better than SMU graduates in term of absorption rate.** Despite the current global economic crisis due to mismanagement within financial sector, the sector will still be promising in the future since its important role to outlay development project and other smaller sized economic activity such as small-medium enterprises and microeconomic activities. This could be interpreted while deepening the quality of engineering and natural sciences related vocational program, SMK should pay more attention to improve the quality of business and management related vocational program in order to meet and to catch-up the current development within this sector.

## 5.5. Employment absorption by formal and informal sector

**Figure 5.6 Employment absorption by status (comparison between SMK and SMU graduates)**




Source: Calculated from SAKERNAS 2002-2007

**SMK graduates had been persistently more likely to be absorbed in formal sector than SMU graduates.** This reflects SMK graduates have a better chance to get a more decent and secured job. Since Indonesian labor market has been characterized by high proportion of informal sector as 69.1 percent of the employed population work at informal sector, while the remaining 30.9 percent work at formal sector[6], it is considered that formal sector is highly competitive in absorbing labor force. By being engaged in formal sector, the SMK graduates have wider opportunity to get further trained which will ultimately have positive impact on their skill formation and skill upgrading in the long run.

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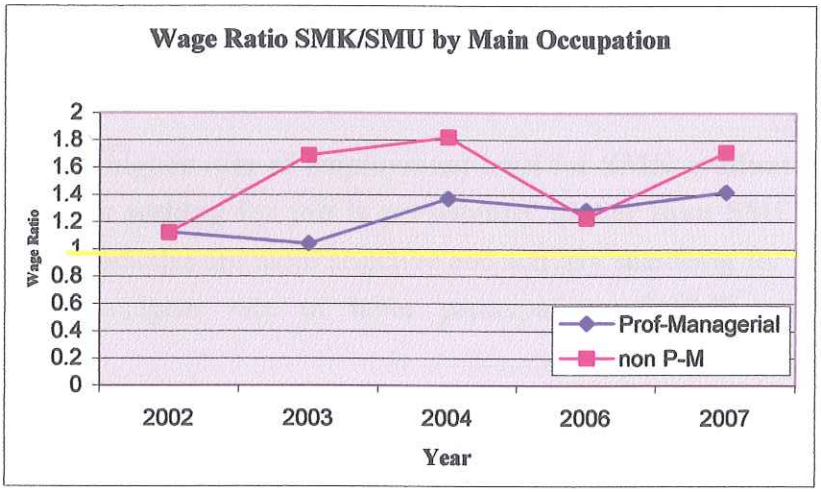
[6] For the detailed analysis, see Widianto, Bambang, "Karakteristik SDM yang Dibutuhkan Dunia Kerja", paper presented at *Seminar Strategi Peningkatan Relevansi Pendidikan Menengah*, conducted by MONE, 20 Juni 2008, Jakarta. .

## 5.6. Trend of Wage Ratio

**Figure 5.7 Wage Ratio SMK/SMU by main occupation**




Source: Calculated from SAKERNAS 2002-2007

**SMK graduates enjoy relatively better wage compared to SMU graduates within both professional-managerial and non professional-managerial occupations.** This reflects a premium in wage for SMK graduates to compensate their productivities and relatively higher skills.

## 5.7. Summary

**Vocational High School (SMK) graduates had been more absorbed in labor market than SMU graduates.** This reflects the increasing demand for more skilled and specific workers.

**Along with the higher rate of employment level for SMK graduates, percentage of SMK graduates seeking for job is persistently higher than SMU graduates.** This reflects SMK graduates are more selective and actively searching for better job. This is consistent with higher rate of labor participation of SMK graduates than its counterparts.

**The percentage of SMK graduates working while studying is comparable with SMU graduates.** This reflects while working they are motivated to improve and upgrade their skills and knowledge by enrolling to higher education level.

**Proportion of SMK graduates within professional-managerial level is larger than SMU graduates**. This could be interpreted that SMK graduates are more likely well-trained and well-prepared with specific skills and certain competences.

**The absorption rate of SMK graduates is higher than SMU graduates within two fast growing sectors, namely manufacturing and services.** In addition, within other sectors such as mining, electricity-water-gas, and construction, SMK graduates are more likely to be absorbed in labor market than SMU graduates. Surprisingly, within financial sector, SMK graduates had been slightly better than SMU graduates in term of absorption rate.

**SMK graduates had been persistently more likely to be absorbed in formal sector than SMU graduates.** This reflects that while having a better chance to get a more decent and secured job, they have wider opportunity to get further trained which will ultimately have positive impact on their skill formation and skill upgrading in the long run.

**SMK graduates had enjoyed relatively better wage compared to SMU graduates within both professional-managerial and non professional-managerial occupations.** This fact certainly recognizes their relatively higher productivities and skills.

## 6. Mapping of regional potentiality as a foundation to develop and to promote vocational high school (SMK) based on province specific

### 6.1. Review of leading sector[7] by province

The section will briefly review of leading sector by province.

**Based on LQ[8] indicator, each province has each leading sector/s.** However, **agriculture** still dominate most of the province in Indonesia, except for DKI, West Java and BANTEN which are having more advanced and diversified economy and RIAU, East Kalimantan which are heavily dependent on other resource based sector, i.e. Mining and Quarrying.

**Manufacturing Industries** are likely become the sector base for some provinces, i.e.: West Java, BANTEN, Central Java, East Java and East Kalimantan.

While **Trade, Hotel and Restaurant** sector are likely potential to become important sector in BENGKULU, Java (except for BANTEN), Bali, West Kalimantan, MALUKU and North MALUKU.

**Transportation and communication** becomes sector base in almost all regions except for NAD, RIAU, SUMSEL, LAMPUNG, BABEL, JABAR, JATENG, JATIM, KALTIM and PAPUA.

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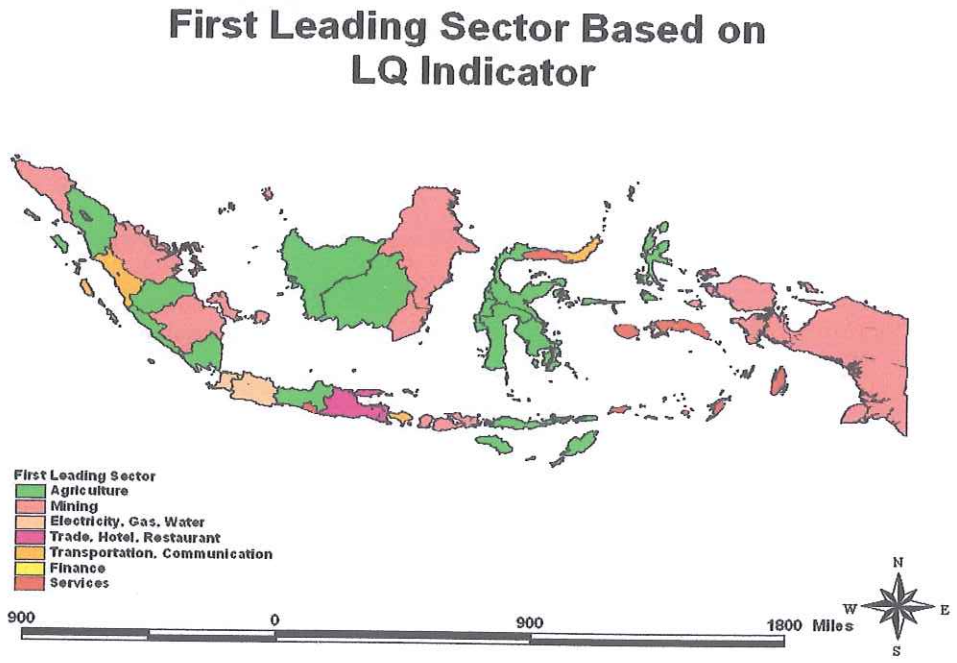
[7] AG=Agriculture; MQ=Mining and Quarrying; MF=Manufacturing Industries; EG=Electricity, Gas and Water Supply; CT=Construction; TH=Trade, Hotel and Restaurant; TC=Transportation and Communication; FI=Financial, Ownership and Business; SE=Services.

[8] Location quotient (LQ) is basically a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region "unique" in comparison to the national average. In more exact terms, location quotient is a ratio that compares a region to a larger reference region according to some characteristic or asset. Suppose X is the amount of some asset in a region (e.g., manufacturing jobs), and Y is the total amount of assets of comparable types in the region (e.g., all jobs). X/Y is then the regional "concentration" of that asset in the region. If X' and Y' are similar data points for some larger reference region (like a state or nation), then the LQ or relative concentration of that asset in the region compared to the nation is (X/Y) / (X'/Y').

**Financial sector**, only DKI and DIY which use this sector as the base. This sector becomes the most contributors for DKI.

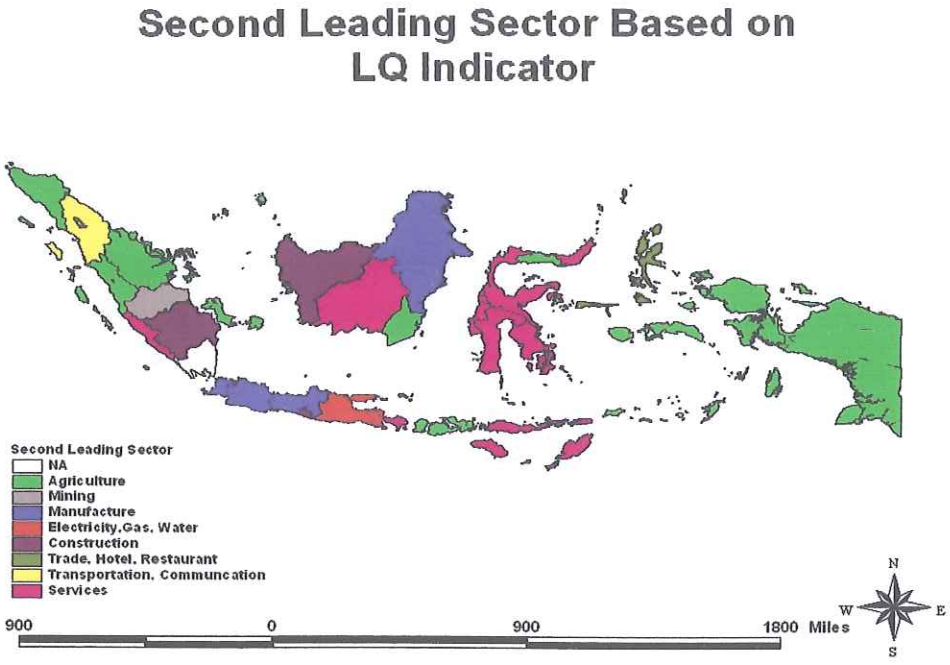
**Service sector** is likely to be the vital sector in all provinces, except for NAD, RIAU, SUMSEL, LAMPUNG, BABEL, JABAR, BANTEN, JATIM, KALSEL, KALTIM, MALUT and PAPUA.

Figure 6.1 First Leading Sector based on LQ indicator




Source: Calculated from Central Bureau Statistics (2006), *Gross Regional Domestic Product of Provinces in Indonesia by Industrial Origin*, Jakarta.

Figure 6.2 Second Leading Sector based on LQ indicator




Source: Calculated from Central Bureau Statistics (2006), *Gross Regional Domestic Product of Provinces in Indonesia by Industrial Origin*, Jakarta.

## 6.2. Summary

**Agricultural**, **manufacturing**, **trade-hotel-restaurant**, transportation-communication, **financial**, and **services** sectors respectively could be considered as the important sectors for some regions to promote regional growth based on province-specific potentiality.

## 7. Conclusion and Policy Recommendation

**As a result of successfully managing population policy, the growth rate of national population has declined substantially**. This has also been accompanied by transition of demographics which resulted in the explosion of working age population. However, the explosion of working age population creates the so-called 'window of opportunity' since there has been declining rate of dependency within this population structure. Thus, the key issue is how to prepare those potential young-age population as productive and effective workers as an important asset to boost national economic growth and improve national welfare.

**The increasing trend of high school enrollment ratio until 2015 should be considered as a good momentum to improve educational attainment, quality of education, and to promote specific skill and competence-based education**. This could be implemented by optimize the potentiality of vocational high school. If this effort could be accomplished successfully thus it will be a crucial factor to boost the quality of work force in the future.

From the secondary data analysis, it is evidently confirmed that SMK graduates has relatively better achievement than SMU graduates reflected by some indicator as follows. ***First***, vocational High School (SMK) graduates had been more absorbed in labor market than SMU graduates. ***Second***, proportion of SMK graduates within professional-managerial level is larger than SMU graduates. ***Third***, the absorption rate of SMK graduates is higher than SMU graduates within such sectors as manufacturing, services, mining, water-electricity-gas, construction, and financial sector. ***Forth***, SMK graduates had been persistently more likely to be absorbed in formal sector than SMU graduates. ***Last***, SMK graduates had enjoyed relatively better wage compared to SMU graduates within both professional-managerial and non professional-managerial occupations.
However, the further development and enrichment of vocational program within SMK should be at best regional-specific oriented. This is essential to support provincial development.

From those conclusions, there are some recommendations as follows. ***First***, it is strongly required to enforce the implementation of SMK expansion, while it is also crucial to improve the quality of its graduates to meet the industrial demand. Otherwise,

the expansion of SMK will become a new boomerang for national labor policy in the future. ***Second***, it is urgent to initiate and to promote the revision of curriculum that meets the demand for specific and skilled workers (link and match with the industry within the regional/provincial/local level). ***Third***, is essential to improve the quality of policy making related to vocational education. In addition, it is also important to promote more focused program implementation toward 2015.

Nevertheless, the study only relies on secondary data which, in some extents, has limitation. Therefore, there is a need to conduct fieldwork, both qualitative study and primary survey, to enrich and to clarify the findings from the result of this study.

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# Appendices

## Appendix 1 Number and Percentage of Youth 15-24 in the Labor Force, 1990-2007

| | 1990 | 1995 | 2000 | 2004 | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|
| **Number of Youth 15-24, (Census and Population Projection)** | | | | | | | |
| Male | 17,103,745 | 1,831,018 | 19,886,812 | 19,579,338 | 19,637,738 | 21,500,254 | 21,960,724 |
| Female | 17,951,600 | 1,911,990 | 20,520,806 | 19,681,437 | 19,604,362 | 20,652,622 | 21,100,666 |
| Total | 35,055,345 | 3,743,008 | 40,407,618 | 39,260,775 | 39,242,100 | 42,152,876 | 43,061,390 |
| **Number of youth 15-24 in the labor force** | | | | | | | |
| Male | 10,236,161 | 11,998,023 | 12,003,542 | 12,570,150 | 13,111,944 | 13,266,782 | 13,796,480 |
| Female | 7,141,104 | 8,151,826 | 8,967,141 | 8,666,290 | 9,201,575 | 9,013,788 | 8,716,058 |
| Total | 17,377,265 | 20,149,849 | 20,970,683 | 21,236,440 | 22,313,519 | 22,280,570 | 22,512,538 |
| **Youth Labor Force Participation rate 15-24 (% to number of youth)** | | | | | | | |
| Male | 61.0 | 65.5 | 63.8 | 64.2 | 62.2 | 61.7 | 62.8 |
| Female | 41.3 | 42.6 | 46.1 | 44.0 | 43.4 | 43.6 | 41.3 |
| Total | **51.0** | **53.8** | **54.8** | **54.1** | **52.8** | **52.9** | **52.3** |
| **Number of youth employed** | | | | | | | |
| Male | 9,437,955 | 9,995,182 | 9,186,013 | 9,192,238 | 9,166,087 | 9,578,277 | 10,518,143 |
| Female | 6,557,149 | 6,125,161 | 6,700,391 | 5,767,157 | 5,687,796 | 5,886,077 | 6,334,359 |
| Total | 15,995,104 | 16,120,343 | 15,886,404 | 14,959,395 | 14,853,883 | 15,464,354 | 16,852,502 |
| **Percent of youth employed (% employed to number of youth in labor force)** | | | | | | | |
| Male | 92.2 | 83.3 | 76.5 | 73.1 | 69.9 | 72.2 | 76.2 |
| Female | 91.8 | 75.1 | 74.7 | 66.5 | 61.8 | 65.3 | 72.7 |
| Total | 92.0 | 80.0 | 75.8 | 70.4 | 66.6 | 69.4 | 74.9 |
| **Number of youth seeking for work (unemployed)** | | | | | | | |
| Male | 798,206 | 2,002,841 | 2,817,529 | 3,377,912 | 3,945,857 | 3,688,505 | 3,278,337 |
| Female | 583,955 | 946,168 | 226,675 | 2,899,133 | 3,513,779 | 3,127,711 | 2,381,699 |
| Total | 1,382,161 | 4,029,506 | 5,084,279 | 6,277,045 | 7,459,636 | 6,816,216 | 5,660,036 |
| **Percent of youth unemployment (% unemployed to youth LF)** | | | | | | | |
| Male | 7.8 | 16.7 | 23.5 | 26.9 | 30.1 | 27.8 | 23.8 |
| Female | 8.2 | 11.6 | 25.0 | 33.5 | 38.2 | 34.7 | 27.3 |
| Total | 8.0 | 20.0 | 24.2 | 29.6 | 33.4 | 30.6 | 25.1 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Number of youth under-employed (number of youth working less than 35 hrs per week)** | | | | | | | |
| Male | 3,559,174 | 3,361,383 | 2,962,783 | 2,609,680 | 2,772,040 | 2,893,388 | 3,173,220 |
| Female | 3,331,849 | 2,582,038 | 2,717,253 | 2,029,922 | 1,977,098 | 1,944,717 | 2,171,729 |
| Total | 6,891,023 | 5,943,421 | 5,680,036 | 4,639,602 | 4,749,138 | 4,838,105 | 5,344,949 |
| **Percent of youth under-employed (% working <35 hrs per week to number of youth employed)** | | | | | | | |
| Male | 37.7 | 33.6 | 32.3 | 28.4 | 30.2 | 30.2 | 30.2 |
| Female | 50.8 | 42.2 | 40.6 | 35.2 | 34.8 | 33.0 | 34.3 |
| Total | 43.1 | 36.9 | 35.8 | 31.0 | 32.0 | 31.3 | 31.7 |
| **Number of youth working in informal sector** | | | | | | | |
| Male | 6,273,440 | 5,603,257 | 5,387,103 | 5,944,654 | 5,986,758 | 6,264,008 | 6,758,271 |
| Female | 4,299,877 | 3,300,018 | 3,687,393 | 3,191,577 | 3,058,430 | 3,053,472 | 3,491,046 |
| Total | 10,573,317 | 8,903,275 | 9,074,496 | 9,136,231 | 9,045,188 | 9,317,480 | 10,249,317 |
| **Percent of youth working in informal economy (% of number of youth employed)** | | | | | | | |
| Male | 66.5 | 56.1 | 58.6 | 64.7 | 65.3 | 65.4 | 64.3 |
| Female | 65.6 | 53.9 | 55.0 | 55.3 | 53.8 | 51.9 | 55.1 |
| Total | 66.1 | 55.2 | 57.1 | 61.1 | 60.9 | 60.3 | 60.8 |

Source: calculated from SAKERNAS - special tabulation by ILO (2007), figures of young population are from the Censuses (BPS) and Population Projection 2005-2025 (Bappenas, BPS and UNFPA, 2005). Figures for the discourage workers are special tabulation of the 2003 and 2006 Sakernas raw data by the team member at the Demographic Institute.

Appendix 2 Leading Sectors Based on LQ Indicator

| Province/ Leading Sector | AG | MQ | MF | EG | CT | TH | TC | FI | SE |
|---|---|---|---|---|---|---|---|---|---|
| NAD | | | | | | | | | |
| SUMUT | | | | | | | | | |
| SUMBAR | | | | | | | | | |
| RIAU | | | | | | | | | |
| JAMBI | | | | | | | | | |
| SUMSEL | | | | | | | | | |
| BENGKULU | | | | | | | | | |
| LAMPUNG | | | | | | | | | |
| BABEL | | | | | | | | | |
| DKI | | | | | | | | | |
| JABAR | | | | | | | | | |
| BANTEN | | | | | | | | | |
| JATENG | | | | | | | | | |
| DIY | | | | | | | | | |
| JATIM | | | | | | | | | |
| BALI | | | | | | | | | |
| NTB | | | | | | | | | |
| NTT | | | | | | | | | |
| KALBAR | | | | | | | | | |
| KALTENG | | | | | | | | | |
| KALSEL | | | | | | | | | |
| KALTIM | | | | | | | | | |
| SULUT | | | | | | | | | |
| SULTENG | | | | | | | | | |
| SULSEL | | | | | | | | | |
| SULTRA | | | | | | | | | |
| GORONTALO | | | | | | | | | |
| MALUKU | | | | | | | | | |
| MALUT | | | | | | | | | |
| PAPUA | | | | | | | | | |

Source: Calculated from Central Bureau Statistics (2006), *Gross Regional Domestic Product of Provinces in Indonesia by Industrial Origin*, Jakarta.

= 1<LQ<2 = LQ>2