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Training and the Labor Market in Indonesia: Policies for Productivity Gains and Employment Growth

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CURRENCY EQUIVALENTS

Before November 15, 1978, US\$1.00 = Rp 415
Annual Average 1979-92

1979	US\$1.00 = Rp 623
1980	US\$1.00 = Rp 627
1981	US\$1.00 = Rp 632
1982	US\$1.00 = Rp 661
1983	US\$1.00 = Rp 909 ^a
1984	US\$1.00 = Rp 1,026
1985	US\$1.00 = Rp 1,111
1986	US\$1.00 = Rp 1,283 ^b
1987	US\$1.00 = Rp 1,644
1988	US\$1.00 = Rp 1,686
1989	US\$1.00 = Rp 1,770
1990	US\$1.00 = Rp 1,843
1991	US\$1.00 = Rp 1,950
1992	US\$1.00 = Rp 2,030
1993	US\$1.00 = Rp 2,087
1994	US\$1.00 = Rp 2,161
1995	US\$1.00 = Rp 2,249
1996	US\$1.00 = Rp 2,340

Fiscal Year: April 1 to March 31

^a On March 30, 1983 the Rupiah was devalued from US\$1.00 = Rp 703 to US\$1.00 = Rp 970.

^b On September 12, 1986 the Rupiah was devalued from US\$1.00 = Rp 1,134 to US\$1.00 = Rp 1,644.

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ABBREVIATIONS, ACRONYMS AND DEFINITIONS

AAET	Agency for Agricultural Education and Training (Ministry of Agriculture)
ADB	Asian Development Bank
APBD	Provincial Budget
APBN	National Budget
APINDO	Employers' Association
BAKN	National Civil Service Administration Agency
BAPPENAS	National Development Planning Board
BLI	Industrial Training Centers
BLK	Ministry of Manpower Skills Training Center (Medium and Large)
CPI	Consumer Price Index
DI (IV)	One (Four) Year Diploma
DEPNAKER	Ministry of Manpower
DIK	Routine Budget
DIKLUSEMAS	Directorate of Private Non-formal Education (Ministry of Education and Culture)
DIKMAS	Directorate of Community Education (Ministry of Education and Culture)
DINAS	Provincial Office with sectoral responsibility reporting to the Governor
DIP	Development Budget
DRER	Domestic Real Exchange Rate
EMPAT	Economy-wide Manpower demand model (Ministry of Manpower)
GOI	Government of Indonesia
GTZ	Deutsche Gesellschaft Fur Technische Zusammenarbeit
ILO	International Labor Organization
JICA	Japanese Interational Cooperation Agency
KANDEP	District Office of Central Government Ministry
KANWIL	Provincial Office of Central Government Ministry
KLK	Ministry of Manpower Skills Training Center (Small)
LAN	National Institute of Administration
MDTP	Manpower Development and Training Project
MENPAN	Ministry for the Utilization of the State Apparatus
MOA	Ministry of Agriculture
MOEC	Ministry of Education and Culture
MOHA	Ministry of Home Affairs
MOI	Ministry of Industry
MOM	Ministry of Manpower
MPKN	National Vocational Education Board
MPKP	Provincial Vocational Education Board
MPKTK	Manpower Model (Bappenas)
MPW	Ministry of Public Works
MRP	Manufacturing Resource Planning
NIC	Newly Industrialized Countries
NPC	National Productivity Center
PPI	Producer Price Index
PTK	Post Secondary Institutions under Ministries

PTKDP	Manpower Model (Ministry of Education and Culture)
Pusat AKAN	Overseas Employment Service
REPELITA	Five-Year Development Plan
SAKERNAS	National Labor Force Survey
SI	University Degree
SD	Primary School
SLTA	Generic term for all types of Senior Secondary Schools
SLTP	Generic term for all types of Junior Secondary School
SMA	Senior Secondary General School
SME	Small and Medium Enterprises
SMEA	Senior Secondary Commercial School
STIA	School of Public Administration (under LAN)
STM	Senior Secondary Technical School
SUSENAS	National Social Economic Survey
UNDP	United Nations Development Program
TFP	Total Factor Productivity
USAID	United States Agency for International Development
VTE	Vocational and Technical Education

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TRAINING AND THE LABOR MARKET IN INDONESIA

Productivity Gains and Employment Growth

i. In the past two decades economic growth in Indonesia has been fast, education has expanded significantly and poverty was reduced at rapid rates. The challenge Indonesia faces

OVERVIEW

today is to maintain the past record in light of the increased international competition especially from its neighbors. The way skills are created, financed and accredited can facilitate or hinder human resources development and economic growth. The objective of this study is to examine skills creation in the broader context of the labor market and the macroeconomy, and to offer policy directions for training. The three main areas that training policies should address are:

ii. **Publicly provided training.** It has high costs per trainee that can be reduced with greater use of the private training sector and lower subsidies to public vocational centers for private training. The monetary savings can be used to increase competition among the public and private suppliers of skills through a combination of subsidies in the form of tax credits, vouchers, loans and scholarships. Licensing, accreditation and certification can become more transparent and simpler through increasing self-regulation in the private sector under Government guidelines. BAPPENAS can assess how many resources are used for training by the public sector across various Departments and Agencies and take the lead in setting up a national body to manage manpower development across the whole economy.

The way skills are created, financed and accredited can facilitate or hinder human resources development and economic growth.

iii. **Civil service training.** It attracts considerable public funds — at least two-thirds of the public budget spent on tertiary education (and this *excludes* training on the public education and health sectors). This can be reduced if civil service training does not extend to the provision of general qualifications that are available in the open labor market. Applicants should be recruited with the required qualifications taking advantage of the increasing output of the educational sector and of high unemployment among graduates. In-service training should be offered only for well defined upgrading of higher level staff and management. As a transitory measure and to support major new initiatives, such as decentralization, upgrading of permanent staff may be desirable. Civil

service training should be subject to competitive bidding open to the private training sector and should be contracted-out to the private sector whenever possible. In-house training schools and centers that no

longer provide specialized skills or skills unavailable in the private sector should be passed on to the Ministry of Education and Culture and form part of the general education system that serves the population at large, while the coordination of specific civil service training should remain under LAN.

iv. **Apprenticeships and levy-grant schemes.** The labor market conditions do not call for long and expensive training programs. Apprenticeship schemes should start as pilots. Their costs and effects should be evaluated and assessed

before they are introduced on a nationwide basis. Levy-grant schemes, if deemed to be desirable, should also start on a limited scale, their management should be given to the private sector, and the funds collected should be kept in a dedicated account and should not be part of general government income.

MAIN FINDINGS

v. **Human Resources policies are paying off.** The Government's policies on human resources development have been successful in creating the necessary conditions for high growth and a reduction in poverty. They have prevented the emergence of skills shortages through broad based public education and the fostering of a thriving private sector which has played a large beneficial role in skills acquisition. The study finds that more education leads to more demand for skills training by both individuals and employers. The increase in education and skills that has taken place has raised productivity and facilitated the movement of workers from marginal activities in the informal sector to formal employment. Overall, the economy has benefited from a more educated labor force and a better trained civil service.

vi. **Skills can be created at lower costs.** Public training has high unit costs: Annualized costs per student of *pre-employment* training at public training centers come to between Rp 1 and Rp 2 million (\$500-\$1,000). Similar costs are found in the case of in-service tertiary education to civil servants that is provided by in-house institutions. These costs are comparable to the cost of attending university education.

vii. **A reallocation of public funds would increase efficiency.** Public training absorbs a large amount of resources. The large budgetary

allocations to *pre-employment* training in public vocational centers and *in-house* civil service training are straining the Government's allocations to other social expenditures. The annual training expenditure on 50,000 trainees in the training centers of the Ministry of Manpower would be sufficient to satisfy the training needs of 3.5 million workers employed in large and medium sized manufacturing firms. *In-house civil service* training (excluding workers in the health and education sectors) is at least two-thirds as large as the public budget for tertiary education that serves the labor force entrants. The trainees in public vocational centers and the civil servants who receive in-house training are only a fraction of the nearly 1.2 million students who drop-out of primary schools every year, an additional 1.2 million who do not proceed to junior secondary education

after completing primary school and nearly half-a-million drop-outs from junior secondary schools. These 2.8 million early leavers and drop outs from basic education compare with less than half-a-million graduates from public senior secondary schools and tertiary education who are the

main beneficiaries of the public funds allocated to skills creation.

viii. **The regulatory framework can create more competition, reduce the price and increase the supply of skills.** The high costs of public training are nonetheless inadequate to fully utilize the public training centers and fund instructor salaries. This leads to the use of training facilities for third-party training at highly subsidized costs. Instructors can lawfully retain part of the proceeds. Third-party activities of public vocational centers take place where private demand exists which could have been served by private training institutions. Thus, the operations of public training centers may crowd out or restrict the expansion of the private sector that is also affected by licensing and accreditation procedures. Creating a level playing field will increase the supply of training and, through competition, lower its price.

The annual expenditure on 50,000 trainees in public training centers can be sufficient to finance the training needs of 3.5 million workers in modern manufacturing.

POLICY DIRECTIONS

ix. Taken together, the previous findings do not call for a reduction in Government involvement in the area of skills creation, but for its reorientation in order to increase efficiency (to do more with the public money spent on training). To create a market-driven and cost-effective training system capable of meeting the challenge of the future, the study offers the following policy directions:

x. *First, publicly provided pre-employment training can be reconsidered in view of its high costs, limited effectiveness and the presence of a large private training sector.*

- One possibility is to reduce publicly provided training of skills that are already supplied by the private sector (commercial and secretarial training, computers, home economics, driving lessons and so on). These areas account for the bulk of publicly provided training but, if they are gradually phased out, there would be substantial fiscal savings at no loss to the supply of skills as the private sector expands. The budgetary savings to the Government can be used for operations in areas that are in demand but not offered by the private sector or to support needy but promising students .
- Cost recovery for training offered in public facilities can become more efficient by reducing subsidies to third-party training and by increasing the revenue of the centers conditional upon performance (such as the rate of successful placements after training is over). These changes can be intermediated directly through scholarships, loans and vouchers to students or, indirectly, in the form of tax credits for training to employers. Even though to-date such schemes have been restricted by limited administrative capacity and low take-up rates,

If civil service recruits already possessed the general qualifications that need not be acquired by in-service education and training, the budgetary savings could enable a substantial increase in their wages.

they need to be developed as the economy grows and evolves to facilitate competition in the supply of skills. Even if the reforms do not have an effect on the overall level of publicly funded training, they will increase efficiency at local level and will also enable the Government to fund training activities where the greatest needs are felt.

- Increasing reliance on the private sector for the creation of occupation-specific pre-employment training could be accompanied, at least initially, by public subsidies in areas that the government feels are especially important and are not being adequately supplied. In this system the budgetary costs would be transparent and significant cost-savings to the public budget can be created

(as the overheads and high unit costs of publicly provided training will be avoided). Savings could be used for supporting students who would like to undertake training but cannot afford to do so. Government financed training should be subject

to periodic evaluation or sunset clauses that would ensure continuing competition and flexibility.

- Finally, after an appropriate evaluation is conducted, larger public vocational centers located in prime industrial areas, that are over-designed for what they currently offer, can be upgraded to offer middle-level and especially advanced skills with increasing participation in management and finance by the private sector.

xi. *Second, as a result of the expansion of education, the nature of civil service training could shift.*

- The civil service could start recruiting applicants already possessing the level of education necessary to perform the required tasks and offer in-service training only for

well defined managerial and promotional purposes or specific skills that are not readily available from the general education system.

- Existing legislation should be enforced. Legislation is already in place that stipulates that educational institutions run by ministries/agencies should provide programs that are not already available in institutions under the Ministry of Education and Culture. This demarcation should be followed to avoid duplication, institutional rivalry, and undue competition in the labor market among public and private sector workers.
- As a transitory measure and to support major new initiatives, such as decentralization, upgrading of permanent staff may be desirable. These needs may be particularly great in some regions and in certain specific skills. This is because it will be some time before the flow of new recruits with higher education qualifications impacts the existing stock. Whenever possible, such skills upgrading should be contracted out through competitive bidding.
- A review should be undertaken of the costs of the large numbers of in-house education and training institutions run by the various ministries/agencies for civil servants. As there will be increasingly less need for in-house provided civil service training due to better quality recruits, these institutions should gradually become part of the general education and training system.
- The cost savings from providing less in-service general education could be subsequently used to increase civil service salaries for those who possess the right level of education and would be deprived from the "salary supplement" that in-

As the economy grows, production becomes more complex and skills become more sophisticated, the need for clearly defined training standards and accurate information systems will increase.

service skills upgrading currently provides. This can be done without addressing other issues in the overall incentive systems for civil servants as it relates to personnel issues rather than the strategic role of the public sector and the more general issue of incentives.

- xii. *Third, the licensing and accreditation of private training institutions can improve, and a national skills standards and certification system can be created with the active involvement of employers and private training institutions.*
 - Private training institutions should be required to register with one Government agency only. They should be licensed and accredited on transparent criteria to reduce transaction costs and increase the supply of skills. The time required for obtaining a license and for determining the status of the institution can be reduced. There is a need to have a single mechanism to develop private training to provide national guidance and encourage a decentralized implementation.
 - National skills standards and occupational certification should be introduced in tandem with technology development and increases in complexity of job requirements. They should begin with the largest occupations that require sophisticated skills in the formal economy. These interventions should be implemented gradually in cooperation with employers and should not be over-designed.
 - In cases where investment in training by the private sector is found to be less than is socially desirable, the Government can raise employers' and professional associations' awareness of the importance of training and provide incentives (such as tax credits and training subsidies) to companies, employers and the self-employed to increase their training effort.
- xiii. *Fourth, to the extent that the previous recommendations call for what can prove to be an increase in Government involvement in training, it is strongly recommended that a system of continuous*

evaluation of training interventions is established along with the improvement in the labor market information systems.

- Evaluations should become an integral part of human resources development. They should be based upon experimental designs or data of sufficient quality that enable rigorous analyses of the efficiency and equity outcomes of training interventions.
- Accurate and relevant labor market information requires common industrial and occupational definitions to be developed across agencies (such as Ministry of Manpower, Ministry of Industry, Ministry of Education and Culture and the Central Statistical Office). The quality of surveys should improve particularly in the areas of wages and labor costs. Small but regularly conducted surveys could provide timely information. The role of the Central Statistical Office, which already has technical expertise and ability to coordinate surveys, should increase to alleviate the burden of preparation, collection and cleaning up of data that is currently undertaken by line ministries.

SUMMARY OF THE STUDY

xiv. The study is structured as follows: Chapter 1 places training and broader human resources development in the context of the macroeconomy and the labor market. Chapter 2 provides an overview of the characteristics of skills development. Public vocational training centers are examined in Chapter 3 and the analysis extends to vocational/technical education in Chapter 4. Chapters 5 and 6 examine the private training sector, that is, private training institutions and employer-provided training. Civil service training is reviewed in the last chapter. The sections below summarize the major issues discussed in individual

chapters, and expand upon the main recommendations offered in the previous section.

THE LABOR MARKET

xv. This study examines the efficiency of public and private training in a broader context of labor market functioning and human resources development. The internal and external efficiency of training is reviewed against macro and trade policies, especially following the deregulation that took place in the mid-1980s.

xvi. **Productivity and Deregulation.** Labor productivity (output/worker) in Indonesia is about one-quarter of Korea's and one-tenth of US. However, this aspect of (technical) productivity fails to take into account that in economic terms (unit labor costs) an Indonesian worker is

three times more productive than an American worker and twice as productive as Korean workers. The study shows that Indonesia's competitiveness has been the result of the exchange rate realignment of the 1980s and the deregulation that followed. Before de-

regulation, output growth was dependent primarily on domestic demand due to import substitution policies. Since 1985, exports and technology effects accounted for more than two-thirds of the spectacular increase in manufacturing output. Employment increased very much at the same rate as the growth in the labor force at more or less constant wages. Productivity in Indonesia can increase further through greater participation in world trade by removing tariffs on inputs, maintaining properly aligned exchange rates and building efficient transport and communications. This would shift factors of production into industries that have higher returns when valued at international prices.

xvii **Minimum Wages and Training.** Real wages started increasing in the early 1990s. Part of the increase has been the result of minimum

The Government can play a significant role in skills development by increasing its activities in areas where there are high social returns and decreasing them where there are no market failures.

wage hikes. Minimum wages were raised in an attempt to increase workers' share of the benefits of growth. However, increases in minimum wages can actually reduce growth and also harm workers in the uncovered sector. This can happen if higher wages reduce employment opportunities in the formal sector and forces workers into the informal sector thereby reducing wages. Training could mitigate the adverse effects of minimum wages, if it creates compensating increases in productivity provided that it does not incur (additional) costs to employers. The current reforms in Indonesia, however, instead of subsidizing employer-provided or privately-funded training, focus on increasing publicly provided training through cost-recovery from employers, students and workers. In the end, these policies may act as a tax on production.

xviii. **Underemployment.** Underemployment in low productivity jobs, not unemployment, is the major labor market issue. The study finds that "underemployment" is high partly because households depend

on small land-holdings as a major source of income, people in rural areas report shorter hours than they actually work, and many workers in the formal sector report low weekly hours in their main job because they have other jobs. Fewer than 10 percent of the "underemployed" would like to work longer hours with little differences between the response of urban and rural workers or between men and women. Typical for an economy with still a large agricultural and informal sector, workers appear to adjust quickly through changes in employment (new and part-time work) rather than hours worked. This kind of underemployment cannot be addressed effectively by additional training: It will be reduced when additional opportunities for employment are created through growth.

xix. **Unemployment.** The study argues that unemployment in Indonesia is not due to lack

of employable skills. Unemployment is primarily a phenomenon of the better educated urban workers. The overall unemployment rate has been remarkably constant (between 2-3 percent) in the last 30 years. Age, sex and education specific unemployment rates have also been relatively stable. The duration of job search has been declining following the deregulation of the mid-1980s. The increase in the unemployment stock by nearly 1.5 million since 1980 has been the result of demographic changes (rural/urban), age effects due to the increasing rate of new labor force entrants (who now make up about 80% of the unemployed), education changes (the more educated spend longer periods on search) and an increase in female labor force participation rates. Unemployment will be reduced when the rate of job creation increases through growth as it did following the deregulation of the mid-1980s.

xx. **Vocational/Technical Secondary Education.**

In 1977, senior secondary vocational school graduates were paid three times more than workers with less than primary education and enjoyed a significant wage premium (30%) over their counterparts from senior general secondary schools. By

1990, vocational graduates were paid only twice the rates of workers with less than primary education, and their wage advantage over graduates from general schools was eroded. This can be explained by the fact that the employment prospects for vocational education graduates did not improve as much as for those from general education, while the output of vocational education continued to increase. The share in total unemployment of graduates from general schools has declined by one-third since 1982. They also increased their share in manufacturing employment by 50 percent more than vocational school graduates who, allegedly, are technically better equipped.

xxi. **Skills Standards, Curricula, Examinations and Certification.** There is little demand by students (as evidenced by participation in examinations) to have their credentials certified. Neither do employers place much value on certification, preferring instead to recruit through informal

Training policies should take into account the functioning of the labor market in a rapidly changing economy subject to international competition.

channels. Employers tend to value the reputation of particular training institutes and the credentials they privately confer more than publicly accredited certificates. In fact, survey results indicate that employers often prefer to recruit applicants with lower credentials, even with lower skills, and pay them lower wages. This is expected in an economy where production arrangements are dominated by low technology, and there are small skill differences between alternative jobs. In the future, as technology is upgraded and skill requirements become more complex, these aspects of training will, however, assume greater importance.

THE SUPPLY OF SKILLS

xxii. Skills in Indonesia are created through a variety of public and private mechanisms, though the private ones dominate. Excluding the basic education system (primary and junior secondary schools), annual outputs are as follows:

- Approximately 800,000 senior secondary students leave the school system every year of whom one-third have attended vocational and technical schools. Two-thirds of senior secondary schools graduates from both general and vocational and technical schools are from private institutions.
- Another 200,000 graduate with diplomas and degrees from tertiary institutions and approximately 100,000 discontinue their studies before graduation. The annual output of engineering, science and technology graduates comes to 38,000 (this flow is 50% larger than the stock of scientists and engineers employed in large and medium size manufacturing firms). Again, approximately two-thirds of tertiary graduates come from private institutions.
- Many ministries and government agencies have their own, mainly tertiary, education institutions for in-service upgrading of the qualifications of civil servants. Annual enrollment in these in-house institutions is at least 54,000

Increasing the public provision of training does not necessarily imply that more skills will be created, if this results in higher overall costs to the economy or crowding out of the private sector.

(and this excludes training institutions for education, health and defense workers who account for more than half of the four million civil servants). Additional training is commonly offered through many short-term courses.

- The Ministry of Manpower offers pre-employment training to 50,000 job-seekers in 153 public vocational centers (BLK/KLK). Another 100 public vocational centers exist and come under various other ministries and agencies.
- There are approximately 150,000 apprentices in company-based registered training schemes but this figure grossly underestimates in-service employer-provided training.
- Finally, there are more than 20,000 registered private training centers with the

Ministry of Education and Culture and the Ministry of Manpower (and an unknown large number of centers that escape the registration of these two ministries). The private centers

represent a large training sector which serves at least four million students, job seekers and workers annually.

xxiii. These numbers underestimate the supply of skills due to inadequate information systems. They, nevertheless, show that the skills creation effort is significant mainly because of the overall size of the private sector. Publicly provided training, though less important in terms of size, attracts significant amounts of public funds (see next para), and even small inefficiencies can have significantly adverse effects on human resources development, economic growth and poverty reduction.

PUBLICLY PROVIDED TRAINING

xxiv. **Public Vocational Training Centers.** The study estimates that total budgetary allocation

for the 153 training centers under the Ministry of Manpower (BLK/KLK) can be sufficient to satisfy the training needs of 3.5 million workers employed in large and medium sized manufacturing firms. Still these centers train only 50,000 job seekers a year just at the basic skill level. This training has no noticeable effects on graduates' labor market outcomes. Employers hardly perceive any benefits from the graduates of public training centers and continue recruiting graduates from the general education system. Many public vocational training centers are located in prime industrial and commercial areas but are in effect over-designed for what they offer.

xxv. **Does more (public) training mean more (total) training?** Attempts to reduce the underutilization of public vocational centers through third-party contracts may crowd out private training.

The drive of public training centers for additional revenue induces them to operate in the areas where private demand already exists, that is, precisely where market failures are

unlikely. Public institutions that are allowed to sell their services in the open market and retain the proceeds may maximize neither profits (production) as in the case of a private firm, nor social welfare (benefits) as in the case of a public firm. They may simply maximize their staff's incomes. This can lead to higher costs and lower output of training than is socially optimal. Licensing requirements can further restrict or delay the formation of private centers.

xxvi. **Civil service training is extensive partly because personnel are recruited with low levels of education.** In-house secondary and post-secondary institutions offer training that constitutes an expensive way of upgrading educational credentials. In-service training is much sought after by staff: the incidence of

training in the civil service is four times higher than the private labor force at large. Civil service training has to a great extent lost its identity in staff development and in its contribution to greater civil service efficiency. Its effect on civil service performance is uncertain as it is pursued for the salary supplements it brings and the private benefits it generates through moonlighting rather than the enhancement of the service as such.

PRIVATE TRAINING

xxvii. **Employer-based Training.** Though difficult to measure, survey results show that employer-provided in-service training is significant, at least among the larger firms. At the basic level (informal work, putting out arrangements) skills creation takes place but goes undetected by government statistics. Survey results suggest that there is no obvious market failure in in-service training. The

analysis of vacancies among manufacturing firms shows that they are negligible, only 1 to 2 percent for operators, assemblers and technicians. Wage differentials for skilled and professional workers have narrowed in the last 30 years. These results are in accordance with production arrangements in Indonesia

and the nature of technology, product demand, prices and labor market conditions. Particularly in the area of skills in the formal sector and especially manufacturing, the study reviews a series of employer surveys and finds little evidence that productivity, profits and production/growth have been supply-constrained due to the lack of in-service training.

xxviii. **Private Training Centers.** In the last ten years the number of private training centers has increased at 6 percent, approximately double the annual rate of growth of the labor force and at a much greater rate than any Government planned and financed manpower program could have supported. The centers respond to shifting labor market demand in the economy. Their growth profile matches the sectoral growth of firms and occupations. Low quality has often been cited as a characteristic of

Demand for training is high and uniform across urban and rural areas and between men and women. This calls for broad-based human resources interventions and reliance on in-service training for occupation-specific skills.

training offered by the private sector. There is little doubt that in an absolute sense this is correct. Quality could be better at an additional expense (higher student fees), longer duration of studies (attendance of complete programs rather than an add-on course one at a time), and in the presence of a rigorous skills certification system. But the case for a market failure is not obvious: there is little evidence that higher quality and more recognizable skills standards are yet the concern of either workers or employers, and who would pay for such improvements has yet to be determined.

xxix. **Licensing and accreditation.** Private training centers come under a plethora of often overlapping Government regulations. Often centers register with more than one Ministry to make sure that they do not break any regulation. Though the curricula and instructional, marketing and employment practices are relatively unaffected by government regulation, the existence and status (accreditation) of private training centers depends on how public training centers decide to compete with them, and how fast and under what conditions local officials license them.

xxx. **The Private Demand for Training.** An analysis of the SUSENAS 1992 survey revealed that women who want to be trained have greater access to training than men (respectively 32 percent and 25 percent of those who want to be trained are in training). The highest excess demand for training (more than two-thirds) is in the areas of computers, business, language and home economics with craft training accounting for less than 15 percent and other areas, such as athletics, art, literature and religion, account for the rest. The mismatch of training (the difference between what subjects are demanded and what are supplied) is similar between urban and rural areas (only 8 percent and 7 percent of the total demand for training should be reallocated to achieve equality in excess demand for training in urban and rural areas). Demand for training increases with education, and educated workers are more likely to be offered training by employers: There are no substantial differences in the demand for training between the poor and the non-poor. These findings suggest that demand for training by individuals is substantial and rather universal and uniform among groups and loca-

tions. They may be taken to signal that educational policies that address the needs of the population at large are more desirable than interventions in narrow areas of training and for targeted groups.

RECENT REFORMS

xxxi. **The Dual and Apprenticeship Schemes.** The introduction of the apprenticeship scheme under the Ministry of Manpower and the dual system under the Ministry of Education and Culture rests on the notion that school leavers, especially from the general stream, need an employable skill to secure employment. The link between education and training and the labor market is an important one though often school leavers require minimal pre-service training, and most demand for skills development (and highest returns to training) comes from those already in employment. Thus, interventions need to be carefully designed and targeted. There has been no formal analysis of the potential costs of the reforms or an assessment of the willingness of employers to participate. Surveys suggest the reluctance of employers to participate in the schemes. Students are not persuaded of the need to specialize too early amidst conditions of changing employer demand and production technologies. An expansion of vocational education should, therefore, consider the willingness of students to enroll in this type of education and the conditions of the labor market. The apprenticeship scheme should ensure that the finance of training does not act as a tax to employers who should have flexibility in meeting labor costs. The best approach is to proceed on a selective basis, and the labor market outcomes of students and trainees to be evaluated together with the increased costs that the new schemes require.

xxxii. **Levy-Grant Scheme.** A levy-grant scheme was introduced in East Java in 1992. The scheme is administered by a 29-member committee with minimal representation from the private sector (one employer and two representatives of private training centers). In its first two years in operation, fewer than 1,000 work-

ers were trained despite the fact that participating companies contributed nearly Rp 1 billion. Training courses have been conducted for companies (predominantly on supervisory management) but also in areas already well catered by the private sector and at lower costs (these areas include garments, beauty care and handicrafts). The levy-grant scheme is run almost entirely by the public sector that determines training needs and selects the companies to participate in the training program and the training institutions and instructors. Collected funds are not deposited in a dedicated account but become part of the provincial development budget. Allocations are made not only for company training but also for job seekers. Under current labor market conditions (relatively abundant supply of educated workers) and product conditions (relatively simple technology and ample opportunities of profit) such schemes may constitute a tax on labor. If expenditure on training is higher than it is relevant to production, the economy suffers a deadweight loss, productivity is reduced and both employers and workers lose. The design of the levy-grant scheme can improve. The management of the levy-grant should be given to the private sector, and the funds collected from payroll taxes should be kept in a dedicated account and should not be part of general government income.

FOREIGN ASSISTANCE

xxxiii. **The World Bank's and Donors' Role.** Past and ongoing donor support has taken place in the absence of a national strategy for training. This absence has led to mixed results. There are cases where training has achieved desirable effects. In other cases, donor support has contributed to the expansion of public training beyond a level that can be sustainable from public funds. The role of international donors is important for providing technical assistance and removing critical fiscal constraints in the short-run. Donors should ensure that their assistance is coordinated and targeted at the areas that have highest rewards and

sustainable in the long run. At the same time, BAPPENAS should be responsible for the coordination and rationalization of foreign funds given to individual agencies.

CONCLUSIONS

xxxiv. The Study confirms that Indonesia's success (fast economic growth and poverty reduction) has been the result of sound policies. In the area of human resources development, broad based policies have reached the population at large and have ensured that, by and large, there have been no supply constraints in the amount and type of skills required to meet the increasing demand for labor arising from continuous growth and changing production requirements. From an economy-wide perspective, policies have maintained a competitive exchange rate, reduced regulatory distortions and increased international competitiveness and macroeconomic stability. The instrumental role of Government in creating an environment conducive to fast and balanced growth should be maintained. This would require to continue the overall economic policies that have served so well in the past and to design a training system that is capable to respond to the rising international competition and the increasing complexity of production requirements.

xxxv. The study concludes that the Government can continue to play a significant role in skills development. It can invest in areas that have the highest social returns and would not have been undertaken by the private sector. It can also ensure a level playing field in both product markets (large and small scale producers) and in the market for training (public and private providers). This would require an increase in training activities in some areas and a reduction in others.

xxxvi. Training should be part of a strategy that ensures broad based *investment* in human resources, an *incentive* regime that creates a level playing field for public and private providers of skills, and an *institutional* framework that supports pre-employment and in-service training. Specific policies are shown in the matrix that follows. The recommended policies will reduce current constraints and

will contribute to the future strengthening of the training system:

- The constraints will be reduced if the high units costs of publicly provided training decrease, and the sectoral allocation of public funds to pre-employment training and between private sector workers and civil servants are re-assessed.
- The training system will be strengthened if, in addition to broad-based human resources development, the encouragement of privately provided training continues. Policies should support the sizeable and increasing numbers the private training system and the cost-effective provision of employer-provided in-service training.

FUTURE AGENDA

xxxvii. Future areas of research include a more in-depth analysis of regional development issues. Indonesia is a large and diverse country, and the policy directions offered in this study need to be

fine-tuned to the specific labor market and production conditions of individual provinces and regions.

xxxviii. Another area of research is high level and managerial training in the civil service. The study examined in-service training that offers rather general qualifications that are already available in the open labor market. Training specific to the needs of the civil service needs to be examined separately in context of the personnel practices relating to promotions and wage increases and the overall incentive regime in the Government sector.

xxxix. Finally, the study examined training in the context of a changing economy and the need to create efficient responses to fast changing production requirements. For the informal sector, where training needs are largely met internally, it is argued that increased access to and higher quality of basic education and low transactions costs (in the form of regulations) are often more important and cost-effective than direct training interventions. Nevertheless, large number of workers still enter the labor force with very low qualifications. Measures that increase productivity in the informal sector should be examined and pursued as long as they do not drain resources and perpetuate the flow of unqualified workers into the labor market.

RECOMMENDATIONS MATRIX

**TRAINING AND THE LABOR MARKET IN INDONESIA:
RECOMMENDATIONS FOR PRODUCTIVITY GAINS AND EMPLOYMENT GROWTH**

Area of Concern	Recommendations	Outcomes
<p style="text-align: center;">Publicly Provided Pre-employment Training</p>	<p>Reduce publicly provided training in areas supplied by private sector (such as commercial, secretarial, computers, home economics, and driving lessons).</p> <p>Public facilities used for private sector training should be subsidized equally with the private sector. Reduce Government subsidies to training offered under third-party arrangements (cost recovery used for salary supplements of local staff) and increase financing through tax credits to employers and scholarships, loans and vouchers to students.</p> <p>Public vocational centers in prime industrial areas can, after an evaluation, be upgraded to offer middle-level and especially advanced skills with increasing participation of the private sector in management and finance of the institutions.</p>	<p>Greater private sector involvement (efficiency objective). Budgetary savings that could be spent on needy groups (equity objectives).</p> <p>Increase competition between public and private providers of skills on a level playing field. Market driven publicly provided training at local level. More efficient cost-recovery measures.</p> <p>Cost savings to Government. Increase in supply of middle-level technicians.</p>
<p style="text-align: center;">Civil Service Training</p>	<p>Recruit applicants already possessing the level of general education necessary to perform the required tasks. Offer in-service training only for well-defined high-level and managerial purposes or specific skills that are not readily available from the general education system.</p> <p>As the quality of recruits increases and there is less need for corrective actions, reduce spending on general training and selectively bring the in-house (ministry-based) education and training institutions under the purview of Ministry of Education and Culture, while maintaining the responsibility for specific, functional civil service training under LAN.</p> <p>As a transitory measure and to support major new initiatives, such as decentralization, upgrading of permanent staff may be desirable. However, this does not necessarily have to be offered in in-house institutions, and much more should be contracted out through competitive bidding.</p>	<p>Better labor market signaling. Correct civil service incentives. Higher civil service productivity. Fiscal savings.</p> <p>Less duplication and institutional rivalry. More education and training for the population at large at lower costs.</p> <p>Increased productivity in civil service in a cost-effective way. Increased effectiveness of development programs such as decentralization.</p>
<p style="text-align: center;">Apprenticeships and Vocational and Technical Education</p>	<p>Start with pilots and estimate the cost implications of apprenticeship scheme and dual system. Assess the capacity of public and private schools and training centers to implement the proposed schemes and their willingness, as well as that of students and employers, to participate in them.</p> <p>Until the results of the previous two exercises are known, avoid early specialization within senior secondary and encourage the in-service, employer-provided creation of occupation-specific skills.</p>	<p>Public expenditures on VTE will not be unnecessarily expensive, and private expenditure will be sufficient to generate the skills in demand by employers and students.</p> <p>Early specialization will not compete with the acquisition of general skills for the population at large.</p>

Area of Concern	Recommendations	Outcomes
<p>Employer-Provided Training</p>	<p>Improve the design of the levy-grant scheme so that it is managed by the private sector, and the funds collected from payroll taxes are kept in dedicated account.</p> <p>In collaboration with employers, schools and training centers, design an appropriate institutional framework for in-service training (for example, relevant wage and employment regulations, certification and licensing of skills, and other contractual aspects of employment and training)</p>	<p>Private funding and management will result in market-driven training. Training finance will not act as a tax on employers</p> <p>A national skills certification system will develop in parallel with the increasing needs of the economy and will correct information failures in the labor market in a cost-effective way</p>
<p>Private Training Institutions</p>	<p>Establish transparent licensing and accreditation of institutions and rely more on self-regulation under Government guidelines.</p> <p>Introduce gradually a national skills standards and certification system with the active involvement of employers and private training institutions.</p> <p>Improve the information system and incorporate private training centers in national planning for skills.</p>	<p>Reduction in transaction costs, greater competition; increase in supply of skills.</p> <p>Increase recognition of skills on a national basis. Greater mobility of the labor force.</p> <p>Human resources planning will be based on the total (public <i>and</i> private) supply of skills and would accurately reflect shortages and indicate potential areas for intervention.</p>
<p>Labor Market Information System and Training Evaluation</p>	<p>Initiate small surveys to provide timely information especially on wages, labor costs and vacancies. Increase the role of the Central Bureau of Statistics and develop common labor market definitions across departments.</p> <p>Conduct regular evaluations of labor market outcomes of graduates and costs of training interventions taking into account potential opportunity costs of investing in specific skills for smaller numbers of students against the large number of those who would benefit from formal and general education.</p>	<p>Accurate and timely evaluation of policies. Reduction in duplication of effort among Ministries for data collection, cleaning up and processing. Reliability of statistics will improve.</p> <p>Development of cost-effective and relevant interventions.</p>

The Labor Market, Skills and Growth

1.1 The last thirty years have been a period of remarkable growth for the Indonesian economy. The growth rate faltered in the mid-1980s but, due to a series of market-oriented reforms, the economy subsequently recovered, and both production and employment growth reverted to their previous levels. The structural change that followed stabilization has been massive. Oil and natural gas was replaced by manufacturing as a leading sector while banking and finance increased in importance. Non-oil exports grew particularly fast, and by 1993 accounted for more than 70 percent of the total. The export success was not confined to manufacturing. Export earnings from agriculture, a sector that is still characterized by a relatively abundant supply of labor, tripled in ten years. But the most spectacular success was that of labor-intensive manufactured exports, particularly textiles and garments (which increased forty-fold in the period) and footwear.

OVERVIEW

Human resources development policies need to take a long term perspective and ensure that the labor force is well prepared to adapt to future patterns of production and technologies.

1.2 The pattern of growth in Indonesia and the reforms of the last decade have made productive use of labor. A fast growing labor force (at an annual rate of more than 3 percent in the last two decades) was absorbed with ease. Sound macroeconomic and trade policies are essential in sustaining the established record of growth. At the same time, human resources development policies need to take a long-term perspective and to ensure that the labor force is well prepared to adapt to future patterns of production and technologies.

1.3 The chapter examines first the effects of mid-1980s deregulation upon production and the labor market. It pays particular attention to the nature and the functioning of the labor market in the context of a growing economy subject to regulatory policies and international competition. The analysis shows that productivity increases have taken place all over the

economy despite a lack of an effective public training system. The magnitude of the deregulation effects upon the labor market (in terms of productivity and employment increases) has been greater than any Government-led training scheme could have anticipated and have financed. Still, deregulation has been partial and the effects of reforms have slowed down since the early 1990s.

1.4 The international competitiveness of Indonesian labor is examined next. Labor productivity (output/worker) is low in Indonesia, but it is argued that this is because the economy is still short of capital, both human and physical. The effects of low productivity on profitability have so far been neutralized to a large extent by low unit labor costs (output/labor costs). The analysis suggests that until the early 1990s international competitiveness was preserved primarily because of substantial devaluations

and the increase in labor productivity that followed deregulation. Since the mid-1980s total factor productivity growth in Indonesia has been positive perhaps for the first time. But since the early 1990s unit labor costs have been on the rise as the rate of currency devaluation slowed down, the effects of deregulation lost their momentum, and wages have been increasing faster than productivity. The study also identifies that the domestic real exchange rate has been increasing, that is, consumer prices (that affect wage demands by workers) are rising faster than before compared to producer prices (that affect production decisions). If this movement in prices continues, it can lead to "Dutch disease" and increase further labor costs.

1.5 Are the unemployed skill deficient? The indicators examined in this study (change in

unemployment rates, unemployment duration, wage differentials and labor absorption of graduates) point in the direction that the unemployment situation has eased over time, especially since the mid-1980s. Underemployment, or more precisely short work (less than 35 hours in a week) is examined in a national and also in a cross country context. It is argued that underemployment is not due to lack of skills. The experiences of Korea, Taiwan, Singapore and Hong Kong suggest that underemployment declines and wages increase only after some critical point of production is reached. This point is not yet reached in Indonesia, and broad based human resources policies need to be continued.

1.6 The chapter examines also the interaction of minimum wages, training and productivity. In an attempt to ensure that workers share the benefits of growth, minimum wages have been recently increased and more rigorously enforced. However, though training may increase productivity in some sectors, it does not necessarily increase wages and overall productivity. Given the results of the analysis of unit labor costs, deregulation and total factor productivity, it is not clear whether the net effects of minimum wages will be beneficial for workers (and overall economic growth). The study proposes that alternative schemes of wage determination based on worker productivity and company performance be examined before specific training cum minimum wage interventions are administered.

1.7 The last issue addressed is when tight labor market conditions may emerge in Indonesia (the "turning point"). This is important for

Table 1.1: Employment by Sector and Employment Status, 1980 And 1990

	Total Employment		Growth Rate	Wage Employment		Growth Rate
	1980	1990	p.a.	1980	1990	p.a.
	('000)	('000)	%	('000)	('000)	%
Agriculture	28,834	35,747	2.2	4,717	5,390	1.3
Mining	387	712	6.3	176	593	12.9
Manufacturing	4,680	8,177	5.7	2,228	5,794	10.0
Electricity	66	140	7.8	55	128	8.8
Construction	1,657	2,927	5.9	1,043	2,096	7.2
Trade	6,679	10,540	4.7	553	1,469	10.3
Transport	1,468	2,618	6.0	750	1,374	6.2
Banks/Finance	302	683	8.5	266	653	9.4
Services	7,145	9,345	2.7	4,672	7,284	4.5
Others	22	43	7.1	14	9	-4.4
Not Stated	313	636	7.4	75	165	8.3
Total	51,553	71,570	3.3	14,547	24,953	5.5

Source: Population Censuses.

training (and industrial) policies because the premature introduction of capital intensive techniques and acquisition of specialized but irrelevant skills can be costly, and can affect adversely, instead of increasing, employment growth.

A. IMPACT OF DEREGULATION

1.8 The labor market benefited considerably from the deregulation package of the late 1980s. Policies before then disproportionately favored import substitution and capital intensive industries that created few jobs and even displaced some of those involved in cottage and small manufacturing industries. Many of the displaced engaged in trade as petty traders, especially in Java.¹ Given the economy's severe distortions, the deregulation substantially improved the labor market. There were beneficial effects from export-led growth and, for the first time, signs of increasing total factor productivity.

1.9 An indicator of the beneficial impact of growth and structural change on the demand for

labor is the fast rate of growth of non-agricultural wage employment. Total employment grew at around the same rate as the labor force during the 1980s, but wage employment grew much faster, at an annual rate of 6 percent, with manufacturing and trade increasing at more than 10 percent. (Table 1.1).²

1.10 In the first half of the 1980s, manufacturing output growth was driven primarily by the expansion of domestic demand (that accounted for 67 percent of output growth) and import substitution (16 percent). Exports accounted for only 13 percent of output growth while the remaining 4 percent was due to technology upgrading. Import-replacing industries enjoyed the highest effective rates of protection, whereas export industries had negative rates implying that they were in effect prevented from growing by the policies of the time.³

1.11 In the second half of the 1980s, exports accounted for 41 percent and technology for a reputable 26 percent of output growth. The export effect was particularly pronounced in textiles (90 percent) though the sector did not benefit from technological effects. Output growth in wood and chemicals was also greatly affected by exports — in the range of 60 percent to 70 percent.

1.12 These changes resulted in substantial employment creation in manufacturing. Employment grew by 2.5 million compared to only one million in the preceding five years (Table 1.2). The growth in manufacturing came both from smaller and larger establishments. Textiles and related activities led the employment absorption, and metal products led the increase in value added with wood products close behind in both cases. Although productivity growth was highest among the relatively capital-intensive metal subsectors, it was also quite high among the labor-intensive, export

Table 1.2: Shares of Incremental Employment in Manufacturing Sector

	1980-85	1985-90
Wood/furniture	32.0	22.9
Food/beverage	31.0	9.7
Textiles/leather	21.0	35.8
Fabricated metals	7.9	8.4
Chemicals	5.7	12.8
Paper products	4.9	3.1
Minerals	4.3	2.6
Basic metals	2.6	1.7
Other manufacturing	-9.4	1.9
Total	100.0	100.0
Number (million)	1.1	2.5
Source: Gijsberts (1993), Dhanani (1995a)		

oriented industries of textiles, garments, leather and footwear.

1.13 The deregulation helped the small-scale industrial sector to keep its employment share at 60 percent since 1985 and also to contribute to exports. A 1992 survey of coconut sugar, furniture, noodle, metal, textiles, weaving and tiles in Central Java showed the diversity of the sector (in technology, scale economies, barriers and defensive survival or offensive entrepreneurial strategies) and its effects on labor market outcomes. These included variable use of casual labor, progressive specialization

among workers and higher labor earnings reflecting ability and skills.

1.14 Medium-sized manufacturing establishments (20-99 workers) expanded as fast as larger ones (with 100 or more workers). Establishments of all sizes grew steadily doubling their initial employment over a period of about 10 years. The real value added and productivity among smaller establishments (20-49 workers) grew faster than establishments with 50-499 workers.

1.15 The deregulation effects were particularly pronounced in the garment industry. Garments are the leading manufacturing exporter (value of exports \$5 billion in 1992). This reflected devaluation, increasing costs in Korea, Taiwan and Hong Kong, and the removal of quota ceilings following the multi-fiber agreement. Between 1977 and 1988 value added grew at 39 percent and employment at 27 percent per annum. Exports generated about 90 percent of output growth and accounted from less than 100 million in 1979 to nearly 5 billion in 1992. The number of firms rose from 157 to 798 between 1981 and 1988.

1.16 The post-1985 developments confirm that there had been significant job loss under the earlier protectionist policies. To repeat the success of earlier reforms additional regulatory reforms will be required. The share in formal employment of finance and insurance, hotels, restaurants, trade and construction has continued to increase in the 1990s, but in manufacturing it has remained constant. In fact, the share of urban workers in formal manufacturing employment declined between 1985 and 1990 (from 31.5 percent to 30.3 percent) while in informal employment increased from 3.4 percent to 8.9 percent.

1.17 The flow of workers between the formal and informal sectors is not smooth as evidenced by significant productivity differentials across firms of different size. Labor productivity varies by a factor 4 or 5 to 1 between establishments of 200 workers or more and those of 15-19 workers (the ratio is 2 in Japan, Thailand and South Korea) — though capital intensity and economies of scale may also vary more in Indonesia.

1.18 SMEs are often regulated and can be affected by as many as 15 departments. Such policies are partly responsible for the failure of micro-enterprises to succeed in becoming SMEs. There are virtually no instances of firms that had begun as microentrepreneurs or small subcontractors graduating to become fully fledged direct exporters. Contrary to expectations, footwear exports are dominated by large firms with no SME participation while exports of automobile components are non-existent. Many manufacturing sectors, especially those that cater to the domestic market, are heavily regulated such as the cement and agro-processing sub-sectors.

1.19 Licensing costs in the trade sector are particularly burdensome on the development of small enterprise sector. It has been estimated that the total cost of obtaining a trade license varies on average between 5 and 8 percent of investment costs.⁴ Specifically for the informal sector, a study of 331 establishments and 600 informal sector trade workers in Central Java revealed that access to the informal sector,

Table 1.3: Average Annual Growth Rates (%) of Selected Indicators and Employment Elasticities (ratio) in Manufacturing, 1981-1992

Country	Value Added ^a (1)	Employment (2)	Productivity (1)-(2)	Elasticity (2)/(1)
Indonesia	12.1	11.2	0.9	0.9
Korea	11.9	5.8	6.1	0.5
Malaysia	10.6	4.2	6.4	0.4
Philippines	0.9	-0.5	1.3	-0.5
Thailand	10.2	5.4	4.8	0.5

^aValue added in real terms weighted by the dollar value of output; registered establishments in the formal sector.

Source: UNIDO; Mazumdar and Basu (1994)

particularly for women, is restricted due to multiplicity of licensing (at various levels of government), level of fees and crowding (such as limited market sites and rental rises).

1.20 Indonesia has continued to deregulate economy and substantial reforms took place in 1994 and 1995. Phasing out any remaining distortions will have beneficial effects on output and would result in employment gains.

B. UNIT LABOR COSTS: WILL THE COMPETITIVENESS OF INDONESIAN MANUFACTURING CONTINUE?

1.21 Until the early 1990s unit labor costs in manufacturing were rising less fast than the wholesale price index in manufacturing. Profit opportunities remained ample and were an important factor in attracting foreign investment (IMF, 1993). However, recent increases in wages raise the important question whether Indonesia's international competitiveness is eroding. This is a relevant question for training policies. Training can in principle increase productivity and mitigate possible adverse effects of rising wages. However, training can only be provided at a cost, and its effect on productivity is not always immediate or even significant unless it is voluntarily provided or

financed by the employer. The analysis of this section suggests that international competitiveness in Indonesia will depend critically on the "wage-productivity gap" (that is, whether wages would rise faster than productivity).

1.22 From an international perspective, the story of Indonesian manufacturing in the 1980s is summarized in Table 1.3. Though there are data problems that reduce the validity of cross country comparisons, the figures are

suggestive of orders of magnitude. Indonesia had the most labor-friendly growth during this period as indicated by the value of the employment elasticity (near unity) and 11 percent annual growth in employment. This means that increases in output led to almost equal proportionate increases in employment. Indonesia also had the highest rate of growth in value added.

1.23 Where Indonesia lagged was in productivity growth. Comparative analyses show that productivity (output/worker) remains low in Indonesia. Productivity levels are still below those achieved by Korea in the early 1970s.⁵ Today productivity in Indonesia is about one-quarter of Korea's and one-tenth of US's (Table 1.4). However, an Indonesian worker is paid only 3.5 percent of his/her American counterpart and, in economic terms, he/she can be three times more profitable to his/her employer. As Korean workers are nearly eight times as expensive as Indone-

Table 1.4: Index of Real Output per Worker in Manufacturing (USA=100)^a

Branch	Indonesia	Korea	Australia	Japan	USA
Food, beverages & tobacco	5.4	12.8	47.2	29.1	100
Textiles, wearing apparel & leather	16.5	31.8	61.7	76.6	100
Chemicals, petroleum, coal, rubber, plastics	10.6	15.4	52.3	81.6	100
Basic & fabricated metals	25.2	45.0	54.1	104.3	100
Machinery, electrical, transport equipment	15.3	42.4	43.0	114.1	100
Other manufacturing ^b	9.0	25.1	43.4	66.9	100
Total	10.0	26.4	48.4	81.8	100

^a The Indonesia figures are for establishments with more than 19 persons employed; other comparisons are for total manufacturing.

^b Other manufacturing includes wood products, furniture and fixtures; paper, printing and publishing; non-metallic mineral products; precision instruments; and other manufacturing.

Source: Szirmai 1994.

sians, Indonesians can be economically twice as profitable as them (Table 1.5).

1.24 The reform process in economies such as India, Bangladesh, China and Vietnam is having a favorable effect on their unit labor costs, and they now compete more fiercely with Indonesia particularly at the lower end of the garment market. China, (since 1989) has been reaping the gains of substantial real devaluation. However, Indonesia's competitiveness

has been eroding in the 1990s as the analysis in the next section suggests.

THE DETERMINANTS OF CHANGE IN UNIT LABOR COSTS, 1979-1992

1.25 The factors that affect the international competitiveness of labor over time can be categorized in three groups. First, *changes in the wage/productivity gap*, that is, the difference between the rate of change in real wages and the rate of change in the physical productivity of labor. This factor depends on the behavior

Table 1.5: Index (Indonesia = 100) of Hourly Compensation Costs in Manufacturing Selected Countries, 1986-92

Country	1986	1992
Korea	328	836
Singapore	558	839
Sri Lanka	73	71
Mexico	265	398
USA	3,315	2,741
Indonesia	100	100
in US\$	0.40	0.59

Source: Godfrey, 1995

of the labor market. On the labor supply side, workers are interested in preserving the real value of their wages (in terms of consumer goods). On the labor demand side, employers' decisions are driven by their workers' productivity (output/worker). An increase in the wage/productivity gap increases labor costs and decreases international competitiveness.

Table 1.6: The Components of Change in Unit Labor Costs in Manufacturing, 1979-1992 (Annual Percentage Change)

Period	Wage-productivity gap (1)	Consumer-producer differential (2)	Nominal exchange rate (3)	Change in unit labor costs 1+2-3
79-85	-0.6	-2.2	13.1	-15.8
85-90	-5.3	-1.7	13.2	-20.2
90-92	9.0	-0.7	5.1	3.3

Source: See Annex 1.1

1.26 Second, *changes in the domestic real exchange rate (DRER)*, that is, the difference between a price index of non-traded goods and a corresponding index for traded goods. The price of non-traded goods (such as transport, housing and many services) is commonly approximated by the consumer price index (CPI). Food is also a major item of consumption that is generally a traded good but is also subject to administered prices (such as in the case of rice). Thus the domestic price of food might be somewhat insulated from the world trading price, and the consumer price index can serve as a proxy for a price index of non-traded goods. The price of traded goods can be approximated by the manufacturing producer price index (PPI) as a large proportion of manufactured goods produced in Indonesia is exported. If changes in CPI exceed those in PPI, then labor costs will increase.⁶

1.27 Third, *changes in the exchange rate (Rp/\$)*. An increase in the nominal exchange rate (devaluation) reduces the unit costs of manufacturing labor in dollars and increases competitiveness.

1.28 Table 1.6 provides these three components of the percentage changes in the unit cost of labor for three periods between 1979 and 1992.⁷ The first period is between 1979 and 1985, that is, before the mid-1980s reforms. The second period is between 1985 and 1990, that is, during deregulation and before the increase in average (and minimum) wages. The last period

in effect refers to the slowdown of deregulation and the increase in wages.

1.29 The distinct and substantial devaluations of 1979, 1983 and 1986 were very much responsible for the improvement in unit labor costs over time (column 3). While in many countries attempts to increase competitiveness through devaluation have been thwarted by the feedback effect of the devaluation upon the

domestic real exchange rate (DRER), this does not seem to have been the case in Indonesia. In general, changes in the consumer-producer price differential reinforced the negative effect of devaluation on unit labor costs. However, this effect is declining over time suggesting that the benefits of devaluation are eroding as the difference between the producer price index and the consumer price index narrows. This decline reduces incentives to shift resources in the tradable sector (from the nontradeable sector).

1.30 Finally, while changes in the wage-productivity gap were not significant in the first period, following deregulation, the wage-productivity gap narrowed and exercised a favorable effect on unit labor costs. However, since 1990, when the momentum of reforms slowed down and real wages started increasing faster than productivity and, for the first time, unit labor costs have started to rise.

DEREGULATION INCREASED PRODUCTIVITY

1.31 Early estimates for the manufacturing sector suggested that Total Factor Productivity might have fallen over the whole 1971-88 period.⁸ Total Factor Productivity growth for the whole Indonesian economy was lowest in the East Asia region and, in fact, negative between 1975 and 1990.⁹ The East Asian Miracle study (World Bank 1993a), covering the period 1960-85, find Total Factor Productivity growth to have been positive in Indonesia when production-function parameters are taken from a full sample of countries, but

Box 1.1: The Sources of Growth in Singapore and Indonesia

A comparison with Singapore shows that Indonesia still needs to pay attention to two key areas, physical and human capital. Singapore also had a dearth of endowments in the 1960s: too few Singaporeans were in the labor force, were little educated and had too little capital to work with. The increase in measured inputs in Singapore (work force, education and investment) is as impressive as its output growth. Singapore's growth has been mainly due to increases in measured inputs.

	% Growth in		Workers as % of		% of workers with education		Investment	
	GDP	pc GDP	total population		prim/below	Sec+	as % of output	
	1966-1990		1966	1990	1966	1990	1966	1990
Singapore	8.5	6.6	27	51	50	66	11	+40
	1970-1993		1971	1990	1971	1990	1971	1991
Indonesia	6.5	4.4	34	40	70	26	14	35

In Indonesia, there are still "few" workers as its population structure is still young, and their education level is still low. There can still be substantial increases in physical and human capital. What Indonesia requires is first, to maintain high investment rates and, if capital is not subsidized, growth will be labor absorbing. And second, to continue the trade reforms that would further increase growth through Total Factor Productivity gains.

Sources: Krugman (1994) for Singapore. Widjojo Nitisastro (1994); Hugo et al. (1987), Depnaker (1992); JIKA (1994); Mazundar and Basu (1994); Kim and Lau (1994). World Bank (1994a)

negative when the parameters are taken from a sample confined to high-growth economies.

1.32 Followed deregulation, the changes that took place in manufacturing, the inflow of foreign investment, the growth of exports and exposure to competition seems to have had a positive impact on Total Factor Productivity through a shift of production toward more efficient sectors, changes in production methods and development of the skills of the work force. Simple production functions which include only labor and capital show that Total Factor Productivity grew between 1988 and 1991, when labor inputs increased at an annual rate of 2.1 percent and capital stock at 8.4 percent, leaving an unexplained residual of 2.2 percent per year.¹⁰

1.33 The 1994 World Bank Country Report uses a more refined methodology and considers the market value of education rather than stock of years of education to measure human capital endowment. It also excludes inventory investment from the

estimates of the capital stock. These changes yield higher estimates of Total Factor Productivity growth. Total Factor Productivity is found to have been stagnant before the onset of the economic reforms in 1985, but that about 55 percent of the growth in GDP per worker between 1985 and 1992 (at an annual rate of 3.8 percent) was due to capital deepening, 14 percent to increased educational attainment, and as much as 31 percent to growth in Total Factor Productivity. This compares to no increase in Total Factor Productivity before deregulation.

1.34 The analysis of deregulation effects, manufacturing wages, changes in unit labor costs and total factor productivity show that macro and trade policies are critical for greater efficiency. In addition to using resources more efficiently, there still remains substantial scope for greater utilization of resources. Box 1.1

compares the sources of growth of Indonesia with Singapore and points to the fact that substantial investments in capital, physical and human, can still be made in the former. Unemployment and underemployment (discussed in sections E and F) will be reduced at large when these investments materialize.

**Table 1.7: Index Sectoral Wage Differentials
1977-1990
(Average Wages = 100)**

	Men		Women	
	1977	1990	1977	1990
Agriculture	43	53	48	43
Manufacturing	82	92	73	82
Services	133	106	147	121

Sources: Manning (1994).

C. LABOR ABSORPTION AND THE TURNING POINT

1.35 Productivity (value added per worker) rose by 10 percent in agriculture, 31 percent in manufacturing and 50 percent in services between 1983 and 1990. These differences in productivity created demand conditions that enabled labor to move to more dynamic sectors, especially manufacturing, with little upward pressure on wages. Over a longer perspective, relative labor earnings increased more in agriculture, despite lower productivity increases than manufacturing. And where productivity rose most, in services, relative earnings declined (Table 1.7). Generally, real labor costs have been very much constant over time with some cyclical deviations. However, there have been some increases since the early 1990s. The increase in Indonesia's compensation costs since in the 1990s raises the question of whether the economy is about to take the first steps into the transition from cheap labor to tight labor markets.

1.36 Looking at large and medium manufacturing firms, the number of wage employees increased by nearly 90 percent from around the time of deregulation (1986) to 1992. Real compensation cost per employee had risen by only 13 percent till 1991. Real value added per employee increased initially faster than compensation per employee but, overall, labor costs

increased by 39 percent and value added by 32 percent. These increases in labor costs are not that important as labor costs account for only 20 percent of the medium and large manufacturing firms' value added. Residual real value added that was only Rp 4,345 per worker in 1986 rose to Rp 5,569 in 1992 and profit opportunities have remained high.¹¹

1.37 In agriculture, also, increases in wage employment in Java in the 1980s did not involve significant increases in the product wage.¹² Regional producer price indices are not available for other sectors but, with wage data available for the construction sector, deflation by regional consumer price indices shows that in practically all cases construction wages were lower in real terms in 1990 than they had been five years earlier. However, the construction industry experienced a similar upturn in real wages in 1991-92 as that in manufacturing.

1.38 The constancy in wages is consistent with the unlimited-labor-supply model at least till the early 1990s: increases in employment did not set off substantial increases in the supply price of labor. Even in provinces and sectors affected by fast growing export-based manufacturing there has been little change in real wages. When such changes were observed, they were typically small and most likely reflected more intensive utilization of labor.¹³

1.39 However, in manufacturing as well as in other sectors, there have been symptoms of tightening labor markets since the early 1990s. In manufacturing a 24 percent increase in the number of employees in large/medium manufacturing went along with a large (34 percent) increase in real compensation cost. In agriculture, where employers were favorably placed between 1985 and 1991, real wages rose sharply in 1992 and 1993.

1.40 Do these increases signify a tightening of Indonesian labor markets, presaging the onset of the rising-real-wage turning point? The fact that the increase in labor costs in manufacturing has gone

along with an increase in productivity, such that the gap between the two is narrowing, is consistent with such a hypothesis. This is what has happened in the NICs (Box 1.2). Also, in Germany, Sweden, UK and USA industrial productivity increased initially much faster than real wages from 1885 to

around the 1920s, then these two variables increased more or less in line until after the Second World War when real wage growth exceeded industrial productivity growth.¹⁴

1.41 But these changes are consistent with other hypotheses also. Since 1989 the govern-

Box 1.2: Underemployment and Turning Points in NICs

As long as conditions of surplus labor/underemployment persist in the farm sector, labor can be absorbed in the expanding sectors (manufacturing, services) at a constant real wage. Until surplus labor is exhausted, the real wage in the agricultural sector will not increase either. Average product and incomes of farm households can well increase to the extent that the exodus of labor from agriculture does not decrease farm output. The increase in productivity in the expanding sectors will not increase wages but only the share of profits in the economy. This can generate high investment rates to sustain the growth process. This Lewis-type scenario fits the evolution of Indonesia's labor market and the decline in poverty during the New Order. It also fits the development path of the neighboring NICs.

It took Japan 75 years of sustained growth to reach the turning point in the 1950s. While agricultural wages grew at only 0.74 percent per annum since 1894, they increased by 5 percent per annum between 1951 and 1963.

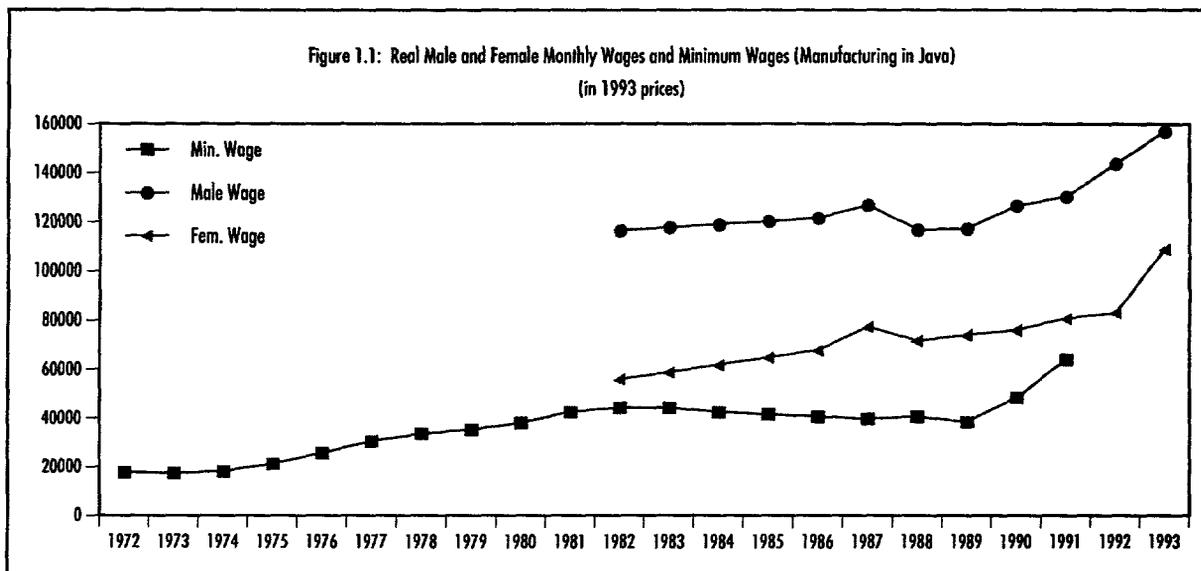
Korea in 1960 was in a similar economic and demographic situation as Japan in 1900. But the transition was much quicker - partly because the rate of growth of output was three times higher than in Japan. The real wage per farm employee was growing at only 0.7 percent till 1967 but between 1968 and 1973 it rose by 9 percent per annum. It took another five years before unemployment dropped from 8 to 4 percent (1978).

Taiwan, albeit more advanced than Korea, required fifteen years of rapid growth in output (10 percent) before real wages in agriculture started rising: the year was 1966 and between then 1975 agricultural wages doubled.

Singapore and especially Hong Kong are in effect countries with no lessons for Indonesia — the dynamics of the transformation from an agrarian to industrial economy do not apply. But unlike Korea, Indonesia's growth did not come only from a high rate of growth of manufactured exports. The windfall of increases in oil prices was used for public expenditures that stimulated sectors such as construction, transport, trade and finance and a balanced urban/rural development (especially through financing extension services, agricultural credit and input subsidies). Macro policies helped especially the avoidance of the Dutch disease through a depreciation of the real exchange rate.

The oft quoted 40 percent underemployment rates in Indonesia cannot be solved through training. Underemployment at such scale can only be solved through sustained high rates of growth and policies for broad based human resources development. In other NICs it was only after the turning point was reached that the number of man-days per worker in agriculture increased — at the same time when agricultural wages started rising fast. Increased utilization of the labor force and rising wages through growth is therefore the result of the transformation from an agrarian to an industrial economy. Direct attempts to increase employment and raise wages simply treat a symptom and can significantly delay this transformation.

Sources: Lewis (1954); Lluch and Mazumdar (1983); Salome and Charmes (1988); Booth (1989); Jayasuriya and Manning (1993); Manning (1994).



ment has allowed more flexibility in industrial relations and the Department of Manpower has conducted a campaign against breaches of minimum wage regulations. Workers have begun to express their grievances over low pay and poor working conditions directly and the incidence of industrial unrest has escalated. Minimum wages have increased sharply (Figure 1.1) and have started being enforced more rigorously than before. The increase in real wages and labor costs in recent years may reflect an emerging political situation and higher minimum wages rather than a fundamental change in labor market conditions.

1.42 Labor absorption is still not complete and, to some extent, this has been the result of the slow rate of decline in agriculture's share in total employment. Despite the replacement of traditional agricultural activities (non-mechanized land preparation, manual threshing, no herbicides and transplanted seedlings) that used to require 1,350

hours/hectare, by modern ones that require 515 hours/hectare (mechanized land preparation, machine threshing, herbicides and direct seeding),¹⁵ the decline in the role of agriculture is slower than international standards would suggest (Table 1.8). In fact, on some counts the growth in the agricultural employment rate in the 1980s was almost 50 percent higher than that in the previous decade (1.45 percent compared to 1.03 percent; Dhanani, 1991). Agriculture is still expected to increase in absolute size throughout most of the Second Perspective Plan (1994-2018).

D. WAGE DIFFERENTIALS SUGGEST NO SKILL SHORTAGES

1.43 Wage differentials have narrowed significantly and for all education levels. A male who has completed upper secondary schooling (taking at least twelve years) now earns, on average, little more than double the wage of a worker with less than primary education (Table 1.9).

Table 1.8: Percentage Change in Sectoral Shares in Employment 1980-1991

Country	Agriculture	Industry	Services
Korea	-17.3	5.0	12.9
Thailand	-10.5	3.2	7.3
Malaysia	-10.4	4.6	6.6
Taiwan	-6.6	1.7	8.9
Philippines	-6.2	-0.6	6.7
Indonesia	-6.3	3.6	2.7

Sources: ADB Key indicators; SAKERNAS.

1.44 Urban labor markets no longer differentiate between those new entrants who have and those who have not completed primary schooling, and extend only a small premium to lower secondary school leavers. At upper secondary level, vocational graduates do worse than general graduates

and, from econometric studies, the rates of return for vocational education declined throughout 1982 to 1989 and are about two-thirds of the rates of return to general secondary education.¹⁶ The only category with a relatively resilient premium is university graduates who continue to enjoy a wage about four times that of an unschooled worker at labor-force-entry age. But this represents a considerable reduction from the ten-fold premium they used to enjoy twenty years ago.

1.45 Wage differentials by skill have also been declining over time (Table 1.10). In the early 1970s skilled blue collar workers were paid 2-3 times more than unskilled laborers, supervisors 3-4 times and professionals 5-10 times more. In the early 1990s tradesmen were paid only around 20 percent more than operators while professionals were paid about 4 times as much.

1.46 In conclusion, the narrowing of wage differentials by education and also skills suggests that so far there have not been very serious constraints arising from skill shortages in the labor market.¹⁷

Table 1.9: Index of Wage Differentials by Schooling and Gender, 1977 - 90 (<Primary = 100)

	Male				Female			
	1977	1982	1987	1990	1977	1982	1987	1990
<Primary	100	100	100	100	100	100	100	100
Primary	151	142	128	122	149	151	128	126
Junior Secondary	275	203	170	158	396	290	225	203
Gen. Sen. Secondary	245	249	212	214	380	368	304	287
Voc. Sen. Secondary	328	262	214	209	483	375	348	319
Tertiary	1033	410	372	366	1428	582	551	508

Source: SAKERNAS (various years)

E. UNDEREMPLOYMENT

1.47 Underemployment, not unemployment, remains the major problem. Underemployment in Indonesia is used to simply refer to the percentage of the labor force who work fewer than 35 hours a week. A more appropriate definition is those who work short hours and are looking for additional work. Nevertheless, on the former, broader definition underemployment stood at 37 percent in 1990 (28 million workers). Part of this percentage is due to the fact that households depend on small landholdings as a major source of income, especially in rural Java. Another part is statistical. People in rural areas often report shorter hours than they actually work. In urban areas many formal sector workers in teaching, government and community services are indeed employed for

less than 35 hours in their main job but they are also engaged in additional employment that escapes statistical enumeration.

1.48 Overall, underemployed workers so classified are expected to increase to 32 million by 1998. Working short hours is particularly prevalent in rural areas. In the agricultural sector underemployment

Table 1.10: Index of Wage Differentials by Skill

	1970	1992
Unskilled	100	100
Skilled	200-300	150-200
Supervisors	300-400	200-250
Professional	500-900	300-400

Sources: 1970 Manning (1979); 1992 Dhanani (1995a).

increased from 47 percent in 1980 to 51 percent in 1990.¹⁸ Whether training can reduce the incidence of short hours of work depends on the causes of underemployment. Underemployment can arise because of demand factors (few employment opportunities due, for example, to low investment) or supply factors (workers are unwilling to be employed for longer hours). Both factors are examined below and show that labor supply factors (workers' decisions) are important determinants of "underemployment." It is concluded that training is not the appropriate policy instrument for addressing underemployment. In any case, training is difficult and expensive to target because underemployed workers are geographically diffused in a large country like Indonesia. Instead, public resources can be better spent on increasing basic educational opportunities in rural areas that can in turn increase the mobility of and access to urban jobs of rural underqualified workers.

THE DEMAND SIDE

1.49 Investment in agriculture has averaged less than 5 percent of total investment since 1980. Most of investment has gone to industry, especially to big firms.¹⁹ Still, rural underemployment may have little to do with lack of investment. There are now labor shortages in agriculture near urban areas and, in fact, the mechanization of rice cultivation in densely populated areas in lowland Java has been the response to labor shortages.²⁰ Larger farms (one hectare plus) are shifting to sugar, and agriculture in Java is no longer considered a subsistence activity but a commercial operation.

1.50 As cropping systems are reaching their limits in the number of crops per year and an increase in rice production in Java is becoming increasingly harder, reduction of underemployment in agricultural activities, especially in rural Java, are probably impossible. In fact, rather

surprisingly, studies show that the percentage of workers working less than 35 hours per week in agriculture is higher in Java (53 percent) than in the Outer Islands (48 percent).²¹ Java is generally expected to be the first island to experience a "turning point" in the sense that agricultural employment may start declining at the end of Repelita VI.²² But this will depend on the employment opportunities in other sectors, not simply the degree of saturation of agriculture as such. Whether workers will be able to change jobs or regions will depend more on their general employability/education and employment opportunities, rather than the availability of skills specific to particular

rural areas. And whether those currently underemployed would work longer hours would depend on their willingness to take advantage of such opportunities.

THE SUPPLY SIDE

1.51 One-third of workers (both sexes) work for less than 35 hours a week (Table 1.11). However, when they were asked whether they would have liked to work more hours, less than one-in-twelve of all workers (and no more than one-in-twenty women) said that they would have liked to do so. Even in the Outer Islands only 12 percent of the underemployed in agriculture are willing to undertake more work.

CONCLUSIONS

1.52 This discussion suggests that the causes of underemployment are workers' own decisions and technical (land and technological) constraints. Both are dependent on decisions made by workers and employers/farmers in view of wages and prices, and investment possibilities. In this context, underemployment is the outcome of labor surplus conditions in the presence of low and unduly capital-intensive effective demand. The policy question in this case is not about training but about growth: Until continuous growth brings the level of output to a critical level, underemployment will not decline nor will wages increase (Box 1.2).

Graduates who seek employment in the private sector have shorter unemployment duration than those who apply for a public sector job.

1.53 Spending resources on training, rather than on broad based education, can only have a marginal effect. In fact, training may well constitute a supply-driven measure that ignores what workers themselves want to do given employment opportunities elsewhere. Although land prices and landlessness is increasing, the unemployment of landless people is not a serious problem as long as employment opportunities outside their villages continue as they have done in the past. Already most of the landless rural families on Java have at least one person who is working outside the village, in a factory or service job.²³ Massive numbers of villagers are migrating on a daily, monthly and yearly basis to the cities for factory and service jobs; to Sumatra for work on tree crop and sugar cane estates; to Saudi Arabia as domestic workers; and to Malaysia as construction laborers and domestic workers.

1.54 Even if all underemployment were due to skills mismatch and shortages, an expansion of publicly provided training would reduce it marginally and at great public expense. For example, training only 10 percent of the underemployed who are willing to work more would still require a program for nearly 600,000 workers (8 percent of the 10 percent underemployed of 70 million workers). This would affect less than one percent of the labor force. And if these previously underemployed workers could increase their weekly hours from an average, say, 20 hours a week to even 40, the total manhours worked in the whole economy would increase by only 0.5 percentage points. Agricultural extension programs are not within the scope of this Study. But rural training programs undertaken by KLKs (rural vocational training centers) and the Mobile Training Units of the Ministry of Manpower have average unit costs of Rp 300,000 (see Chapter 2). The usefulness of these programs should be examined against attempts to increase enrollments in primary and junior secondary education that has stagnated in recent years in rural areas.

Table 1.11: Distribution (%) of Working Population by Hours Worked, 1980 and 1990 and % of Those Working but Seeking More Work, 1990

Hours	1980 1990		Men	Women	% of employed seeking more work, in 1990	
	All Workers					
<25	23	23	16	35	Urban male	5
25-34	14	16	14	18	Rural male	11
35-39	52	51	58	38	Urban female	3
40+	11	10	11	9	Rural female	7
Total	100	100	100	100	All	8

Source: Population Censuses

1.55 In conclusion, underemployment is not because poorer people seek more work at current wage rates.²⁴ To the extent that training programs are driven by the objective to absorb underemployed labor, they should be reconsidered. Instead, policies should aim to maintain the employment generation ability of the economy through macro policies, further deregulation, and broad-based education.

F. ARE THE UNEMPLOYED SKILL DEFICIENT?

1.56 Unemployment is generally an inappropriate labor market indicator in low-income countries with surplus labor. In countries that lack a comprehensive social security system, few people can afford to be both not working and seeking work (the combination needed to qualify as unemployed on the international definition). The vast majority of workers work in whatever they can while trying to improve their employment outcomes as opportunities arise. Partly for this reason, unemployment is primarily a transitional issue among urban and better educated young persons from richer families, looking for their first job.

1.57 The data profile and econometric analysis of the unemployed in Indonesia support these views on unemployment. With respect to the transitional view, it takes on average about 10

months for job seekers to find a job. Unemployment is primarily a phenomenon among the young and the educated (Table 1.12). The unemployment rates increase among those aged 15-19 (when secondary school leavers join the labor force) and further among those aged 20-24 (when their numbers are reinforced by tertiary education graduates). In the next age group (25-29) the unemployment rate drops by nearly two-thirds and becomes virtually zero at older ages.

1.58 Unemployment also increases with education. The increased propensity of the educated young to remain openly unemployed reflects in part their financial ability to search longer for a suitable first time job: university graduates come predominantly from the top income deciles.²⁵ By 1993 one-in-three of all urban unemployed had tertiary qualification.

1.59 The above-mentioned patterns of more or less "luxury" unemployment are gradually eroded by the increase in secondary education that benefits successively middle-and lower-income families. In this context the presence of family ties across all income groups in Indonesia become important determinants of job search in addition to possible income differences among the unemployed. Econometric analysis of the determinants of youth unemployment based on SAKERNAS 1992 data shows that, after controlling for age and education, the very poor have indeed very low probability of being unemployed. However, unemployment among the lower and middle-income groups is high as is indeed for the richest groups.²⁶ Additional analysis of recent SAKERNAS data also reveals a weak relationship between unemployment rates and incomes.²⁷

1.60 These findings suggest that unemployment, especially among the urban youth, is an important issue which requires policy attention. However, unemployment is not a problem of lack of employable skills among job-seekers that

Table 1.12: Unemployment Rates (%) by Age Group and Educational Level, 1990

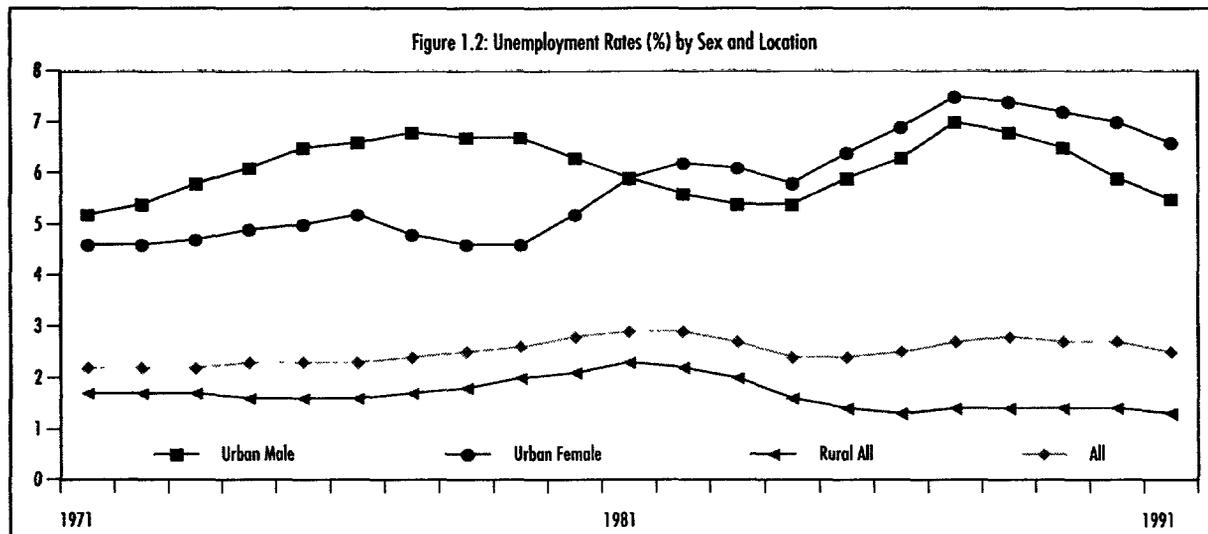
Age group	Unemployment	Education level	Unemployment
10-14	1.5	No schooling	0.3
15-19	6.0	Incomplete primary	0.6
20-24	9.6	Completed primary	1.3
25-29	3.3	Lower secondary (general)	4.1
30-34	0.8	Lower secondary (vocational)	4.4
35-39	0.4	Upper secondary (general)	14.0
40-44	0.3	Upper secondary (vocational)	8.3
45-49	0.3	Diploma/academy	6.9
50+	0.2	University	9.7
All ages	2.5	All levels	2.5%

Source: Sakernas

can be addressed through publicly provided pre-employment training or a re-orientation of the education system towards vocational subjects. Labor supply factors explain practically all the increase in the stock of unemployment in the last 20 years. The increase has been due to changes in the population structure (age and urban/rural residence), a 10 percent increase in the labor force participation rate (from 50 percent in 1980 to 55 percent in 1990) and an increase in (not a shortage of) skills, as proxied by an expanding education system. And unemployment seems to have eased in recent years following the macro reforms of the mid-1980s.

BROAD TRENDS

1.61 There were approximately one million unemployed workers in both 1970 and 1980 but their number had increased to 2.2 million by 1992. This increase mirrors the growth in the labor force in the last three decades (from 39 million to nearly 80 million). The labor force growth in the 1980s (3.5 percent per annum) was very much the same as the growth in employment (3.4 percent per annum). So, employment constraints have at most contributed



only 0.13 percent of the increase in unemployment (or approximately 150,000 workers).²⁸

1.62 The unemployment rate has been remarkably constant over time exhibiting only a cyclical pattern but no discernible trend (Figure 1.2 based on smoothed-out, three-year moving averages of unemployment rates).²⁹ Unemployment rose only among urban women. This reflects both a 20 percent increase in the female labor force participation rate (from under 33 percent in 1980 to nearly 40 percent in 1990) and a far greater increase in the educational attainment of women compared to men. As a result, women contributed almost half of the increase in the open unemployment in the last decade. However, women's unemployment rates have been declining since the late 1980s as did the rates for other groups. The decline coincided with the stabilization measures undertaken at the time, a point pursued in more detail later on.

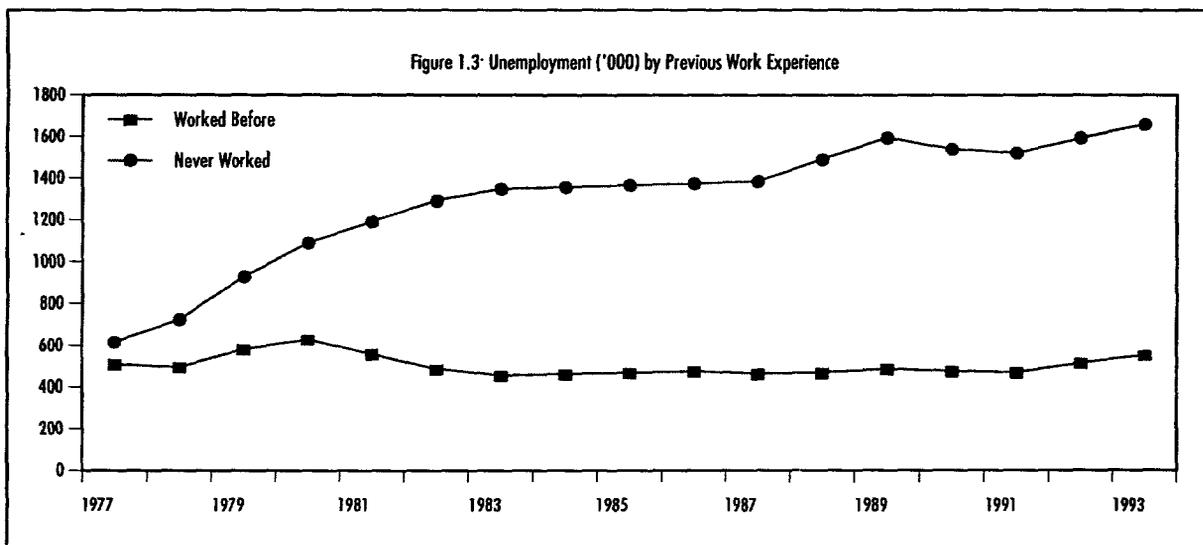
1.63 While only half of the unemployed were new entrants to the labor force in 1980, their share had increased to three-quarters in 1990. Figure 1.3 shows the growth of unemployed workers over time separately for first-time job seekers and those who have previous work experience. The annual number of unemployed with work experience has been remarkably constant over time at around half-a-million. However, the number of unemployed first time job-seekers has risen to 1.7 million.³⁰

1.64 There has been little change in the education-specific unemployment rates over time (Table 1.13). If anything, unemployment rates have declined for nearly all age groups and both sexes. The exception is for men and women with senior general secondary education and women university graduates. However, in the most recent period, senior secondary graduates have had significant employment gains and the apparently better preparedness of vocational graduates, who are included among diploma graduates in Table 1.13, has deteriorated.

UNEMPLOYMENT DURATION

1.65 Contrary to what an increasing education/skills mismatch hypothesis would support, the period of job search among the unemployed has been declining over time (Figure 1.4). Also, the length of unemployment duration by education level indicates that the less educated find employment faster than the more educated. The decline in unemployment duration/job search coincided with the time after the stabilization/reform measures had the opportunity to register their effects (in the late 1980s).

1.66 The average duration of job search among the unemployed was 10.2 months in 1987 but declined to nine months in 1992. The median duration of job search (that is, the time by which 50 percent of the unemployed find



work) also declined from five months to 4.5 months. The greatest decline in average unemployment duration of job search was among those educated at junior secondary level (1.8 months) followed closely by graduates of senior secondary general education (1.7 months). The greatest decline in median duration was again among graduates of senior secondary general education (1.3 months). Unemployment duration over time has become more uniform across education groups.

1.67 The greater decline in unemployment duration of general education graduates (compared to those who come from a vocational stream) has been accompanied by greater reduction in the unemployment of the former compared to the latter. Figure 1.5 shows the unemployment rates of general education and vocational education graduates.

1.68 The changes in unemployment duration, unemployment rates, and wages over time do not support the alleged greater mismatch between the output from general secondary education as opposed to vocational education and the needs of the labor market. (see also Chapter 4).

GRADUATE UNEMPLOYMENT

1.69 There are more than 1,000 post-secondary/tertiary institutions in Indonesia

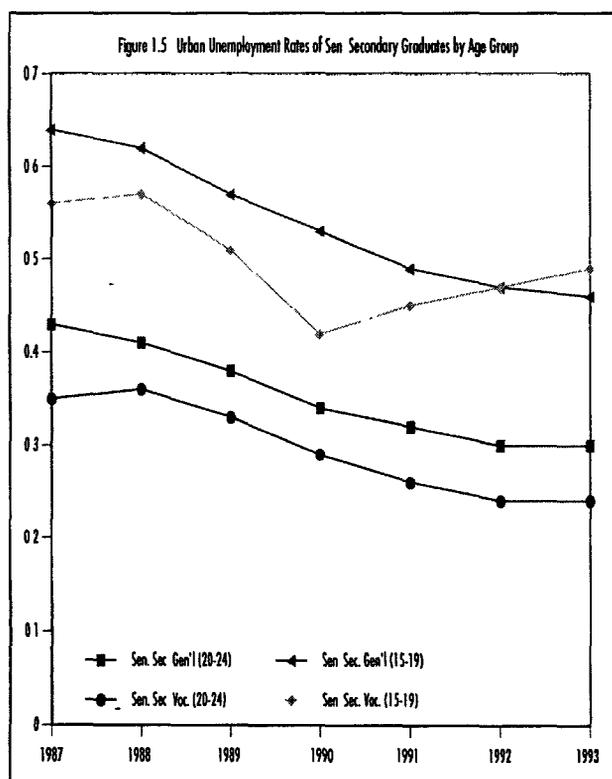
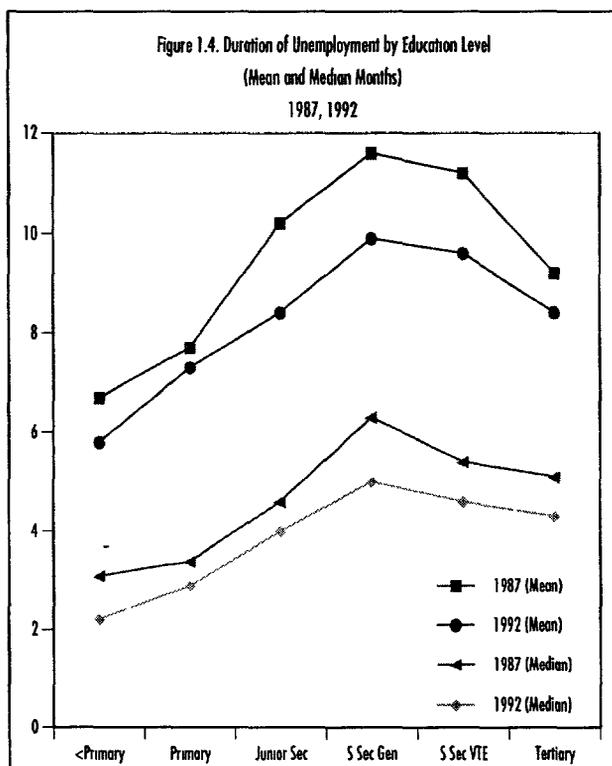
and their recent expansion has been fast (reaching almost 100 new universities a year). The annual growth rate of degree graduates is currently 16 percent followed by 14 percent for diploma graduates (3-year program) and 9 percent for certificate (1-2 years of studies). Of the 2.5 million persons with tertiary qualifications in 1993, 1.2 million had degrees, 900,000 had 3-year diplomas and only 400,000 have one-to-two year diplomas/certificates.

1.70 The rising numbers of graduates from tertiary education institutions, have contributed to a rise in the stock of the unemployed (Table 1.14). It

Table 1.13: Urban Unemployment Rates (%) by Education and Sex 1976 and 1990

Education Level	Men		Women	
	1976	1990	1976	1990
< Primary	5.1	1.2	1.7	1.3
Primary	7.1	2.6	5.5	2.5
Junior Secondary	8.0	5.5	11.3	7.2
Senior Sec. General	9.7	12.9	18.6	21.1
Senior Sec. Voc +D1 +D2	10.6	8.6	12.1	11.8
University	6.9	6.3	9.3	13.7
All urban	6.9	5.7	5.1	6.7

Source: Manning (1994).



was the increase in the size of tertiary education output (and not an increase in the unemployment rate or the duration of search) that has been responsible for the increasing share of graduates in the unemployment pool.

1.71 A recent tracer study of 5 cohorts (1989 to 1993) of 3,300 science and technology private university graduates examined their employment outcomes vis-à-vis a series of characteristics (type of studies, level of qualification, institution they attended, sex and so on).³¹ The study covered six provinces ranging from the industrialized ones (Jakarta, Bandung, Surabaya, Medan) to the less industrialized (West Sumatra and East Nusa Tenggara). Additional information was collected on local labor market conditions and especially the role of the public and private sectors in graduate employment.

1.72 The study confirmed that the unemployment situation has eased since the late-1980s. It found that the search period of male graduates declined from 13 to 9 months between 1988 and 1992 and overall from 10 to 9 months. The proportion of unemployed male job seekers looking for a job longer than one year declined from 29 percent to 24 percent.

1.73 For women graduates, whose growth has been greater than men over time, there were no significant changes. This was partly attributed to the fact women tend to have less intensive job searches and withdraw at times from

Table 1.14: Educational Composition of Urban Unemployment

Education	1976	1989	1993
Primary or below	54.0	17.0	18.0
Junior secondary	19.0	15.0	14.0
Senior secondary	25.0	61.0	55.0
Tertiary	2.0	7.0	13.0
All	100.0	100.0	100.0
Rate (%)	6.3	6.0	5.8
N (million)	0.5	1.2	1.3

Sources: SAKERNAS

the labor force: in the sample nearly half of female graduates were first-time job seekers while almost two-thirds of men had some previous work experience. An additional factor is that women are twice as likely to eventually work for the government that, as argued below, takes considerably longer than finding a private job. Related to this employment expectation was the fact that women were over-represented in agriculturist and natural sciences programs that are in greater demand by the government sector.

1.74 The median time for finding a job was only 2 months for diploma graduates but twice as long for degree graduates ("median time"

refers to the period when half of graduates have found work). The median time for men was reduced from 4 to 2 months between 1989 and 1993 and for women from 6 to 3 months. Part of the change in the female case was because women started seeking employment in the private sector.

1.75 Two important findings were that first, the recruitment freeze in the public sector has resulted in greater shares of graduates being recruited by industry and trade. The share of graduates entering government employment declined from 22 percent in 1989 to 15 percent in 1993. Industry benefited most absorbing 5 percent of the 7 percent decline in government recruitment.

1.76 Second, it takes much longer to find government employment than private employment due to lengthy application and recruitment procedures. For example, while on average agricultural degree graduates can enter self-employment in only two months and wage employment in the private sector in five months, it takes them ten months to find employment in the public sector. It took engineers two months to find employment in the private sector but five months before they were

employed by the public sector. During the period under consideration, the median time for getting a job in a state-owned enterprise did not change.

1.77 Of lesser importance was the ownership (public/private) of the institution. Those from public universities had a 7 percent unemployment rate 4 years after graduation compared to 13 percent for those who graduated from a private institution. Private university graduates had equal access to first-time employment as graduates from public universities. However, part of the difference was because public university graduates were more often employed in the public sector in "permanent" jobs. By contrast, the unemployment rate for

private university graduates is affected by turnover, that is, they were already searching for a second or even a third job after graduation at the time of the survey. Overall, therefore, the unemployment rate of private graduates was higher because of higher rates of frictional unemployment (turnover).

Early specialization has high costs and competes with the acquisition of more general skills. Occupation-specific training should be left at the very end of programs, and the very specialized skills should be determined by employers' needs and acquired in-service.

1.78 Unemployment rates for diploma graduates in 1989 were lower than that of their counterparts with degrees (7 and 11 percent respectively). However, there was no evidence that there was a closer match for diploma holders between field of study and employment than that among degree holders.

1.79 The prime determinant of unemployment was field of study. Engineers had the lowest unemployment rates (8 percent), but natural scientists and especially agriculturists higher (11 percent and 15 percent respectively). However, in another study of graduates from public universities the most significant determinant of employment outcomes was location.³² In fact, in the latter study graduates of business fields had a lower unemployment rate than those who had attended technical fields. The difference between these two studies may be due to the fact that the former focused more on private university graduates while the latter on

public ones. Public universities are more evenly distributed geographically. Private universities tend to be in areas where prospects for employment are favorable to employment.

1.80 In conclusion, much of the increase in the stock of unemployment has been due to changing demographic characteristics of the labor supply, namely, the increase in the working age population, changing residence from rural to urban, an increase in women's share in the labor force, and increasing education among job-seekers. From a training perspective, this finding suggests that there has not been an increase in the mismatch of education output to labor market needs.

G. MINIMUM WAGES AND TRAINING

1.81 Training policies can be relevant to minimum wages. Minimum wages in Indonesia are being raised in hopes of enabling workers to get a greater share in the benefits of growth. If policies increase productivity in an efficient way, they can mitigate possible adverse employment effects of minimum wage increases. However, increases in productivity are a necessary, but not sufficient, condition for wage increases. Wages will not start rising until the market tightens up on the labor supply side or the rules for distributing production between profits and wages are changed. Nevertheless, training as an antidote to minimum wages can be examined in the context of a dual labor market where experience and training are used to allocate workers between the primary and secondary labor market sectors (that is, those covered by minimum wage legislation and those that are not covered).

1.82 When a minimum wage is introduced, this forces the least productive workers — especially youths — into unemployment. Product market demand responds to the prices of the outputs of the two sectors, and this ensures that labor demand matches labor supply. In a first best world, welfare could be increased in this model by simply remov-

ing the minimum wage, since this is the source of market imperfection. Alternative second best policies include the payment of a subsidy in two ways. The first is to provide firms with a subsidy based on the wage paid to youth labor. This reduces the impact of the minimum wage on youth unemployment, but the welfare loss of the taxes that are needed to pay for the subsidy can be sizable.

1.83 An alternative policy is to subsidize the costs of training. The output effects of this policy are ambiguous.³³ The initial effect of increased training is to induce some secondary sector workers to move to the primary sector. But this reduces secondary sector output, and so increases its product market price. Secondary market employers thus demand more labor and

raise the wage in order to encourage primary sector workers to move to the secondary sector. Since an increase in product market prices raises the value of the marginal product of the additional worker, some of the unemployed

might move into secondary sector employment as a result of the training subsidy. The net effect on output of the primary and secondary sectors depends on the magnitude of the relevant elasticities. One conceivable — but disturbing — outcome could also be that the introduction of a training subsidy may actually reduce overall employment. In this scenario trained workers entering the primary sector displace older workers from that sector. Meanwhile the movement of labor from the primary sector into the secondary sector may (owing to low returns to ability and training there) not be sufficient to restore output in that sector to its pre-policy level and may create unemployment. Put simply, training leads to a new allocation of workers across sectors without necessarily increasing output.

1.84 It is not unambiguously the case, therefore, that training subsidies are a good thing, since in the most likely outcome there

Underemployment is not because the poor seek more work at current wages. Until more jobs are created by growth, underemployment will not decline and wages will not increase.

exist both gainers and losers. Ex post, the gainers are those employed in the primary sector after policy implementation while the losers are those who are employed in the secondary sector both before and after implementation of the policy. Though there are outcomes in which a training subsidy raises economic welfare, attempts to use a training subsidy in Indonesia as an antidote to minimum wages may be difficult to implement. They require tax mechanisms that are beyond the existing institutional capacity, and funds that are difficult to be raised given current budgetary constraints. Public training subsidies are also

unlikely to be beneficial to employers who are not really concerned about skills shortages.

1.85 Administrative measures to simultaneously increase wages and introduce training (see Chapters 3 and 4 respectively on apprenticeships schemes and the dual system) can reduce adjustment within the firm. In most cases, employer provided training takes place through lower wages, because employers fear poaching of the workers they trained unless the costs of training are shared between them and their workers. As neighboring competitors reap the benefits of devaluation whose effects for Indonesia have declined (Table 1.6,

Box 1.3: Training and Wages in Korea

An alternative wage setting mechanism to minimum wages is that found in Japan and Korea. With reference to Korea, the industrial relations framework resembled, until its reform in the late 1980s, that of Indonesia today. Labor was suppressed, the influence of unions was minimal outside the large manufacturing sector where, again, government involvement was extensive. Though labor was sharing disproportionately little of the substantial growth in output and profits, wages kept nevertheless increasing over time due to a profit sharing arrangement that formed the basis of wage determination in industry. Basic wages formed about 70 percent of total earnings and the rest was based on productivity bonuses, business conditions, overtime and so on.

This mechanism for apportioning some of the profits to workers was reinforced by internal (to the firm) pay rules. Starting wages were determined mainly by education and sex - very much like Indonesia today. Subsequent increases were based on seniority (length of service with the company) and rewards to skills that were acquired on the job -- again like in Indonesia. Studies reported an additional year of company based experience increased wages of male workers by 10 percent compared to less than 4 percent for experience acquired outside the firm. Company based wage policies were driven by the fact that Korea had little prior knowledge/experience of new technologies that were largely imported, and managers themselves did not know enough about the intricacies of production. They had therefore to rely on on-the-job training and, more importantly, on the "motivation of workers ... to exercise the most fundamental skill of all, intelligence".

Still the Korean government had to intervene after the periods of external shocks with wage repression in 1975 and again in 1980/81. This "emergency management" that is required to safeguard the interests of macroeconomic stabilization and adjustment is quite different from policies that rely on manpower forecasts, minimum wages and supply-led reforms in training. The short description of the wage and skills processes in Korea shows both the synergy between labor costs and training for growth but also their relationship to "unborn technology" argument: Decentralized labor market arrangements can alleviate skills shortages as they arise and link wages with productivity and the macroeconomic conditions.

Sources: Lee (1983); Park (1988); Amsden (1990); Mazumdar and Basu (1994).

column 3), it would be important for Indonesia to prevent an increase in the wage-productivity gap (*ibid.*, column 1). The devaluation effects have been pronounced in China that is also relaxing wage controls and is moving into flexible wage determination schemes: Enterprises can now introduce bonuses and piece rate payments. Wages are no longer controlled in private enterprises or the smaller collectives. The share of the basic wage in total emoluments of workers in state enterprises in urban areas has been reduced from 85 percent in 1978 to 45 percent in 1992.³⁴

1.86 Alternative wage determination arrangements can be worth examining. Box 1.3 makes reference to Japan and Korea whereby wage increases are conditional on productivity gains and profits. This internal (to the firm) mechanism is particularly relevant for both the provision of training and the introduction of new technologies, and its applicability to Indonesia could be examined vis-à-vis further increases in minimum wages.

H. PROSPECTS

1.87 Current projections in effect assume little change in sectoral employment changes (Table 1.15) and represent the euphoria created by manufacturing expansion: manufacturing is expected to employ one-in-four of new workers in the second half of the 1990s. The previous analysis of the effects of deregulation suggests that the continuing growth in manufacturing will be very much dependent on macro and trade policies. In view of the post-deregulation experience the prime concern of policies should be to preserve and expand these gains.

1.88 Table 1.16 summarizes the changes in the composition of occupations and education of the manufacturing labor force. It shows the significant educational

upgrading that has contributed to productivity increases in the sector. Overall, while the share of graduates of secondary and tertiary institutions in employment was only 7 percent in 1980, it had increased to 16 percent by 1990. Those

Table 1.15: Actual (1980-90) and Projected Employment Changes (REPELITA V and VI) (%)

	80-85	85-90	Rep V	Rep VI
Agriculture	36.4	21.0	20.8	17.6
Mining	0.3	3.3	3.5	4.5
Manufacturing	12.1	26.9	27.6	26.0
Utilities	0.0	0.8	0.8	1.7
Construction	4.8	9.4	9.6	12.7
Trade/hotels	29.1	14.1	14.1	14.4
Transport/communication	5.3	7.5	7.7	9.4
Banking and Finance	-0.6	4.8	5.3	3.7
Services*	12.6	12.2	12.5	10.2
Total	100.0	100.0	100.0	100.0
Number (Million)	9.0	9.1	10.5	10.8

* Figures for services in Repelita VI assume a decline in government employment of 313,000.

Source: Gijsberts (1993).

Table 1.16: Occupational and Educational Structure in Manufacturing

Occupation	1980	1990	Education	1980	1990
Professional/techn.	0.97	0.40	Tertiary	0.5	1.6
Managerial/admin.	0.25	0.46	Senior Voc	2.7	5.7
Clerical	2.10	2.86	Senior Gen	2.8	8.5
Sales	1.25	0.85	Junior Voc	1.4	1.1
Service	2.25	0.79	Junior Gen	5.1	11.5
Production workers	91.08	93.76	Primary	24.3	34.8
Others	2.10	0.88	Below Prim	63.2	36.8
Total (%)	100.00	100.00	Total	100.0	100.0
Number (million)	4.70	8.10		4.7	8.2

Source: Census

with below primary education lost almost half of their share. The table also shows that, while in 1980 general and vocational school graduates had equal shares in the work force, the share of general secondary education graduates had increased by 1990 much faster than that of their vocational education counterparts. These changes reflect the increase in the relative supply of educated workers that is still on the rise (see Chapter 4). It is likely that opportunities for improving staffing at lower levels will continue to exist for some time. New graduates of secondary and tertiary education will understandably continue to resist what they regard as downgrading (loss of status and also income). Thus, the absorption of the unemployed, who are mainly educated, will be gradual unless investment accelerates significantly.

1.89 It may, however, become easier for future generations of workers to be absorbed in the labor market. Though projections made in 1993 indicated that labor force growth should start declining from the end of Repelita VI (Annex 1.2), SAKERNAS data already show that the labor force currently grows at less than 2 percent per annum — last year it was only 1.7 percent. An additional beneficial factor is that declining rates of labor force growth will apply to successively larger labor force. Assuming that macro policies continue to foster labor demanding growth and do not prematurely switch production to capital intensive techniques (for example, through capital subsidies or incentives to high tech activities), labor absorption may well continue as it has done in the past.

1.90 The reduction in the rate of growth of the labor force should alleviate the pressure on unemployment, and the ongoing expansion of education should better equip the future labor force for undertaking more complicated tasks. Would this be enough for ensuring that critical skills shortages do not emerge? Yes, to a great extent. An example of how new technology creates new skills on-the-job is provided in Box 1.4: Even completely unknown technologies can be adopted swiftly as long as the work force has the necessary general education skills. Since

productive learning does not end with formal schooling, it is imperative for the education system to provide sufficient mastery in verbal and numerical skills upon which lifetime training can build. The role of public policy is to ensure that children leave school with adequate education. Chapter 2 argues that there are significant gains to be made if attention is paid to the nearly three million students who leave school before they complete the basic education cycle (9 years).

1.91 As skills requirements become more complex, the importance of the allocative, rather than the productive, aspect of education/training increases. The former refers to the ability of workers to adapt to new techniques and use new information while the latter deals with narrow/technical aspects of direct relevance to production. In the example in Box 1.4, the less educated workers had difficulty in innovating beyond the point of mechanically applying new methods (see also Box 4.2). In this respect training in specific skills is a poor substitute for general education. It addresses narrow situations that can become quickly outdated. It usually costs more to provide, from a public policy point of view, than general education. Training in occupation-specific skills should be therefore carefully designed: It should be decentralized and determined by company specific needs and workers' demand (Chapters 5 and 6).

1.92 The move into high technology production may not require in the first instance more skills, and "formal" training schemes may constitute little more than a routine activity and a pretext for paying low wages (see Box 6.3). As discussed in Chapter 5, foreign investment is not conditioned by lack of skills and does not necessarily create skills as long as labor remains a relatively abundant factor of production. Under these conditions, production can occur with only a few highly trained workers and hundreds of workers whose only task is to undertake repetitive tasks.

1.93 Should training policies be geared to the provision of highly technical skills? The success of training in this case would depend on whether a sufficiently clear national technology policy exists. Technology policy can be defined as a comprehensive and consistent set of official guidelines,

Box 1.4: How Are Previously Unknown Skills Acquired? By New Production Arrangements and On-the-Job

The emergence of new technologies requires workers, from novices to experts, to learn new systems while at work. At times, there is not even a formal curriculum for teaching emerging technologies, if their introduction took place at a fast pace.

A study examined the contributions of classroom teaching and workplace learning to the mastery of knowledge after a five-year period of observation and analysis of two US manufacturing plants. The "experiment" was the introduction of a new computer-based system, Manufacturing Resource Planning (MRP). MRP is both a theory of manufacturing and a computer system designed to integrate all aspects of a company's operations and enable workers to make both production and inventory decisions.

For the most part, MRP did not create new types of jobs. Rather it modified activities and transformed the conditions under which existing functions are carried out. MRP affected jobs at all skill levels and increased the intellectual demands on what was once considered unskilled labor. The successful application of MRP requires some teaching of its central principles but much of the mastery of its theoretical concepts occurs on the job, after the worker had the opportunity to apply it.

Since MRP is a new technology, workers learnt it from the ground up. They had been recruited from the world of work -- no possibility of getting such workers from vocational schools of which many may have not even heard about it. But some workers attempted to improve their understanding of MRP through self study and part-time courses undertaken on their own time and expense. The expectation for increasing responsibilities was the driving force.

The two plants differed in their stage of implementation. In one MRP was fully functioning. In the other, MRP was only partly implemented and could not provide updated information about the latest status of manufacturing and production - traditional methods had to be used, too. In the later case, training was assisted by the American Production and Inventory Control Society. Still, the results were similar in the two key areas the study addressed.

First, in both plants theoretical knowledge of MRP was not dependent on formal training. While the theory of MRP can be learned in school-like activities, it could be also learned through hands-on experience.

Second, functional knowledge, the ability to use the system, varied by skill category. Material control supervisors and managers learn to perform tasks competently. The less educated production workers initially learned fixed formulas for solving routine problems but failed to recognize when these were not relevant or to formulate new ones in novel situations.

The study (with additional analysis) concluded that appropriate job responsibilities increase workers' conceptual understanding through work activities even without class-room based instruction. The nature of work can enhance or inhibit learning: Educationally-rich work (such as production technologies demanding to specify problems, develop hypotheses, test solutions and communicate problems with co-workers) is a good substitute for school. Since workers come to their jobs from a large variety of backgrounds and educational routes, multiple forms of on-the-job learning are as important as trying to design the one best training program.

The workplace is a potential learning environment as people can develop conceptual understanding on-the-job without prior formal training. Educators and policy makers have to learn how to tap that potential.

Source: Scribner et al. (1990).

measures and instruments which affect choice, acquisition, creation and application of technology throughout the economy. Technology and employment are treated as critical issues in Indonesia, but policies are not fully developed and the relationship between the two areas is not always clear. Technology is often perceived somewhat narrowly as being equivalent to modern machines which are a short-cut to efficiency and quality in large-scale industrial production.³⁵ There is emphasis on training scientists and researchers in such fields as nuclear physics, remote sensing and aeronautics, and on setting up a string of sophisticated laboratories. However, there are no specific suggestions on the selection and application of technologies which would contribute substantially to creating job and income opportunities. The instruments required to arrive at a more equitable distribution of income have not yet been fully developed: estimates suggest that an additional job in base metal, machinery and chemical industries in the 1980s required \$135,000 of targeted investment while the same employment effect in small industry could have come at an investment of only \$630.

1.94 The right response to anticipated critical shortages is to create a training system that can alleviate these shortages as they arise rather than to supply them ahead of time (see Chapter 2 on manpower planning). Production technologies change continuously and often fast. Box 1.5 traces the changes in the semiconductor industry over time, an industry which is sometimes considered strategic because of its "spillovers". It shows how unpredictable new technology is. Also, it reinforces the previous arguments on deregulation in the sense that there is often little justification for protectionist policies. What matters for growth and employment creation is to ensure that profit opportunities are not constrained by switching prematurely to high technology production, especially in a relatively labor abundant economy. Indonesia's success has been largely based on selling in the international markets products that can be cheaply produced locally and leave ample margins for profit.

Box 1.5: Semiconductors: Low Spillovers

The semiconductor industry is often cited as a "strategic" industry because important learning-by-doing spillovers may justify special industrial policies. The most important stylized fact of the industry is that unit costs fall significantly as production experience (cumulative output) rises. In the early product cycle of a semiconductor, as much as 90 percent of output is flawed and must be discarded. This can contribute as much as 80 percent of costs. When production experience has been acquired, the failure rate can fall to under 10 percent though learning may not be a pure-by-product of experience, but may require the joint input of managerial monitoring.

An empirical analysis of quarterly data for 32 firms that produced the seven successive generations of semiconductors between 1974 and 1992 showed that (i) learning-by-doing when output is doubled reduces costs by 20 percent; (ii) firms learn three times more from increasing their own production than from additional production of other firms; learning spillovers are just as much between firms in different countries as between firms within a given country; (iv) intergenerational spillovers across different, improved, types of semiconductors are weak (statistically insignificant in five of the seven generations of semiconductors).

These findings led to the conclusions, first, that spillovers are international in scope and therefore provide no clear justification for policies that favor domestic over foreign firms. And, second, the lack of important intergenerational spillovers, combined with short (3-5 year) product cycle, implies that any gains from promoting the industry may be short-lived.

Source: Irwin and Klenow (1994).

1.95 Even the best national training policy may not be able to avoid the temporary emergence of skills shortages in critical areas, if such shortages are also present in other, especially, neighboring countries. For example, computer experts and engineers are in short supply in Hong Kong, and the Government approved the employment of many Chinese professionals last year. Though the situation in Hong Kong eased, it may have created shortages in China. This may happen to Indonesia: training that proves to be successful in creating critical skills may not solve Indonesia's skills shortages but those in countries where wages are higher for high-tech skills, through emigration. To the extent that the creation of critical skills is a private matter (for example, if they are decided and financed by students who have taken into account the possibility of emigration), public policy has effectively no role. However, if these skills are created with the support of public funds, then they may substitute private investment and promote private objectives instead of social goals. Public funds spent in this way will subsidize production that takes place in other countries. It is, therefore, important that public investments in human resources are relevant to the country's developmental stage.

The success of a training system depends on the investments it attracts, the incentives it offers, and the institutional framework within which it operates.

I. CONCLUSIONS AND RECOMMENDATIONS

1.96 The skills that are required and the degree to which labor is absorbed depends on the goods and services produced (the composition and growth rate of output). Though some products are inherently capital intensive, many products and processes can take place with various combinations of capital and labor depending on costs of capital and labor. It cannot be assumed that higher capital intensity and more sophisticated skills in some sectors increase overall productivity and wages or the rate of economic growth and improve the welfare of the population.

1.97 There is nothing inherently bad in low productivity levels in an open, well functioning economy, that is, in an economy that has no impediments to capital formation and investment in human resources. Attempts to artificially boost productivity in a few sectors, at the expense of others, can have adverse effects upon the whole economy. However, non-discriminatory policies that raise capital and human capital investment across the whole economy and encourage firms and individuals to adjust efficiently, can raise the overall productivity level in the economy and growth rate.

1.98 These mechanisms were present in Indonesia and the economy has been transformed since 1986. Fast and steady growth followed the internal

and external stabilization and structural change. The emphasis of policies, starting in the mid-1980s, on market-oriented deregulation have produced beneficial effects on employment creation if not yet upon wage levels. Still, there is more to be done but also in a different way: deregulation has been implemented in an uneven, stop-go way that creates uncertainty. Investment decisions, especially by the international business community, are driven by expectations. A steady policy environment can attract more funds than special, even more favorable, policies that are however subject to change.

1.99 The analysis in this chapter showed that skills increased very much in line with skills requirements: There are no alarming signals in terms of rising unemployment or increases in skilled/unskilled wage differentials in the economy at large. This suggests (and it is also confirmed in subsequent chapters on private training institutions and employer provided training) that there is already in place a mechanism able to generate a sufficient supply response to the changing conditions of a growing economy. This mechanism is mainly privately

driven and should be preserved and enhanced to meet the challenge that the introduction of new technologies will require.

1.100 The conclusion (further supported in the rest of the study) is that skills can be created relatively quickly and in a cost-efficient way if both employers and workers have an interest in them. Because training is usually a good investment, job seekers, workers and employers are willing to finance it. In Indonesia, enrollment of job seekers and workers in private training

centers by far exceeds those in public centers (Chapter 5). Employers invest in their employees' training when certain skills are required (Chapter

6). It is new technology that drives the creation of new skills not vice versa. Qualifications that are acquired ahead of their demand by employers may remain largely unrewarded (Tables 1.9 and 1.10 on declining wage differentials by education and skills) or unutilized in terms of appropriate level of responsibility (Table 1.16 on the limited occupational upgrading of educated workers). In addition to its limited success in increasing wages ahead of tight labor market conditions and increasing productivity in the economy at large, supply-driven training does not create additional employment and, if it attracts public resources at the expense of broader human resources investment (for example, in basic education or in health), it can increase unemployment and perpetuate under-employment.

1.101 Selective interventions can facilitate the interaction between workers and employers and reduce the effects of market failures. For example, though students are currently concerned more with the acquisition, than the formal recognition, of skills (Chapter 5), and firms do not appreciate skills certification (Chapter 6), the study argues that these are important policy areas for the future. Licensing and accreditation

of private providers of skills and the creation of skills standards and occupational certification need to be introduced or improved at the same pace as new types of jobs emerge in response to new production technologies.

1.102 Another market failure arises from the fact that workers are those who ultimately decide for whom they work. This results in a risk for employers who provide training to a worker who may be subsequently poached by another firm. This kind of market failure is usually solved by flexible wages.

Company-provided training is determined to a large extent by the ability of employers to pass at least some of the costs of training on to those who benefit from it (that is, to workers in the form of lower wages while on training). In this respect, a policy of

minimum wages, if pursued, should be designed in such a way so that to enable flexibility in trainee wages.

1.103 There remains the issue that all developing countries face: how to provide training for those skills that require significant pre-employment training but their demand is neither demographically driven (such as for nurses or teachers) nor predictable (such as skills that would be used when new technologies are introduced). In this case, because it is so difficult to forecast requirements and also too expensive to provide specialized skills, a general rule is not to attempt to match future demand with supply but to minimize losses caused by inappropriate training interventions. Training programs should therefore maximize internal flexibility so that the choice of specific occupations can be as close to graduation as possible. The occupation-specific elements of training should be left at the very end of programs, as early specialization can have high costs and usually competes with the acquisition of more general skills as well as education. The very specialized types of occupation-specific training should be acquired in-service. This requires that training should have close links with employers who should guide not only the volume of training but also its content.

Policies should continue to lay the foundations for broad-based human resources investments, start building the "middle," and develop the institutional aspects of training.

1.104 The last section of this chapter argued that the technology policy should be broadened and include sectors beyond modern and large industrial firms. Policies should not create sharp distinctions (dualism) in the treatment of small and large firms. A premature switch to capital intensive production can be costly directly in terms of employment loss and indirectly in terms of the opportunity cost of public funds that would not be spent where social returns are highest.

1.112 In conclusion, this Study (with additional analysis in subsequent chapters) recommends the following sequence for skills development in Indonesia.

1.113 *First*, continue to lay the foundations for broad human resources development especially for the nearly 3 million pupils who leave the basic education system every year before completing the basic cycle (9 years). This will reduce the flow of workers into relatively marginalized activities where considerable underemployment exists or in areas where productivity is low. These policies should continue for as long as it is required to ensure universal enrollment in basic education, perhaps, for the next ten years.

1.114 *Second*, start building the middle by selective interventions in both education and training. In education, secondary schools should become increasingly accessible, and technical/vocational education should still emphasize the general end of the curriculum and the development of transferable skills. Gradually, as more specialized skills are required by employers, occupation-specific technical/vocational education should be provided by enterprises that have specialized facilities. To the extent that the training is enterprise-specific, employers would be less concerned about losing the trainee and their investment to a competitor.

1.115 *Third*, with respect to training, continue building institutional aspects (from licensing and accreditation to skills standards, and from occupational certification to information systems) in close collaboration with employers as needs arise. The public provision of training can be reformed, even maintaining its size, to become more selective (that is, not to crowd out the private sector), less costly, and more responsive to changing labor market conditions.

ENDNOTES

¹ Hill (1989).

² The relationship between total and average employment figures may have been affected by changes in the way unpaid and family work were measured in the censuses (Dasgupta, Hanson and Hullu 1994), but the magnitudes of change reported in Table 1.1 should largely be in order with what happened in the 1980s.

³ Poot (1991).

⁴ Cook and Kirkpatrick (1993).

⁵ Godfrey (1995).

⁶ Administered prices have been flexible to some extent and are not over any long period being used to repress inflation. However, the CPI and PPI as calculated in the text are only an approximate indicator of DRER.

⁷ These three factors (wage/productivity gap, domestic real exchange rate and nominal exchange rate) do not change of each other independently over time. For example, a currency devaluation raises both CPI and PPI. In the conventional theory of economic adjustment, a devaluation should increase PPI more than CPI, and this should help shift resources in the tradeable sector. However, a devaluation can set in motion a wage-price spiral causing real wages to rise faster than labor productivity. Despite the interdependence of these three factors, an examination of their changes over time provide an estimate, albeit approximate, of the relative importance of macro and labor market factors that affect unit labor costs and international competitiveness over time.

⁸ Robertson (1991).

⁹ Thomas and Wang (1993). Mazumdar and Basu (1994) summarizing the evidence in Asia between 1960 and 1989 show that Taiwan and Hong King had annual Total Factor Productivity growth rates in excess of 4 percent, while Japan, Korea and Thailand had rates around 3-4 percent. The rates in Singapore and Malaysia were below 2 percent as was also the case in Indonesia

¹⁰ Bhattacharya and Pangestu (1993).

¹¹ IMF (1993).

¹² Godfrey (1993).

¹³ Manning (1992).

¹⁴ Phelps Brown and Browne (1968).

¹⁵ Naylor (1992). Both methods would require in addition 110 hours for water management, fertilizing and spraying.

¹⁶ MacMahon and Boediono (1992a).

¹⁷ The fact that our analysis suggests that there have not been skills shortages at large, does not preclude that shortages in specific or highly specialized skills do not exist. In fact, there is evidence that in the modern sector, where Indonesia is competing quite successfully in the international markets, such shortages do exist in the sense that companies have to pay high salaries that are disproportionate to the level of wages in a low-middle income economy. For example, work permits for expatriate labor rose from 17,998 in 1989 to 33,356 in 1996. The policy issue in this case is to what extent the Government should address such shortages, that would require heavy outlays, at the expense of other, more general education that is cheaper to provide and can reach many more workers (see Box 2.2).

¹⁸ Appendix of President Soeharto's State Address, August 13, 1993, Table XII-1. Part of the increase in short work may simply reflect the under-enumeration of female rural workers in the 1980 census who tend to work shorter hours than the rest of the population.

¹⁹ Hasibuan (1994a and 1994b).

²⁰ Sinaga et al. (1993).

²¹ Manning (1994) Table 13.

²² Fletcher (1993).

²³ Collier et al. (1993).

²⁴ Similar conclusion reached by Manning (1994, p. 36) "the evidence for widespread underemployment and its association with poverty and excess pressure of labor supply is remarkably thin. This is true both for the national survey and village study data." (emphasis added).

²⁵ World Bank (1993b).

²⁶ Manning (1994).

²⁷ Dhanani (1995a).

²⁸ This figure may include frictional unemployment, as this type of unemployment increases with urbanization and more complex labor markets.

²⁹ Calculated from Manning (1994).

³⁰ Calculated from Dhanani (1995a).

³¹ Dhanani (1995b).

³² Clark (1995).

³³ Gusstman and Steinmeier (1994).

³⁴ Knight and Song (1995).

³⁵ Fluitman (1986).

The Supply and Planning of Skills

2.1 Training interventions can be beneficial but have costs. They should therefore be decided within an overall human resources development framework. This chapter shows (Section A) that the annual flow from the education system is 4.5 million of which 2.8 million consists of those who drop out of primary schooling, those who complete primary but do not proceed to junior secondary education, and those who start but do not complete junior secondary education. The 2.8 million who leave school before they qualify even at basic level (9 years) are likely to become unqualified workers and will be a major determinant of overall productivity in the economy for decades to come.

2.2 The opportunity cost of providing training for relatively narrow skills to those who have acquired some schooling/skills need to be evaluated in terms of both efficiency and poverty objectives. In Section B selective public training programs are reviewed. They have some common characteristics. Their objective is often to alleviate income or employment needs of specific groups rather than to explicitly address skills gaps that arise from identifiable market failures. Some have been supported initially by donor funds and, due to high costs and the absence of a strategic framework for training interventions, have proven ineffective and unsustainable from recurrent public funds. These and other locally initiated training schemes operate under excess capacity that increases their social cost.

2.3 Before existing schemes are revitalized or new ones are introduced a comprehensive mapping and evaluation of existing training schemes needs to be undertaken by all line ministries and BAPPENAS. This would require an approach to planning that extends beyond forecasts of manpower requirements (Section C). Human resources planning can examine what are the likely sources of current or future skills gaps. If skills gaps arise from imperfect labor markets, inflexible wage structures,

credit market failures and so on, then the first priority of policies should be to address these failures in the areas in which they arise and then develop supplementary interventions in various training areas (financing, accreditation, skills tests, occupational certification, regulatory framework for apprentices and so on). In doing so, the existence and functioning of private mechanisms (such as private pre-employment training and employer-provided training) should be taken into account. Public provision of training can become the solution of last resort but the Government's role in financing training and ensuring that an enabling institutional framework is in place can increase.

2.4 A precondition for accurate, relevant and timely decisions on training (and human

resources development, in general) is that adequate information systems exist. Section D reviews the labor market information systems and stresses the significance of definitions for labor market indicators that are common among various agencies and the

importance for swift processing of the information collected.

The 2.8 million who leave school every year before they qualify even at basic level (9 years) are likely to become unqualified workers and will be the prime determinant of overall productivity in the economy for decades to come.

A. THE SUPPLY OF SKILLS

2.5 The annual supply of skills in Indonesia (broadly defined to include academic and vocational skills at senior secondary level and above) is just over 1 million (Table 2.1). This is impressive for a country with US\$900 per capita income in which 70% of its labor force had primary or below education only a generation ago. A major determinant of future skills of the labor force and productivity gains will, however, be the majority of the young, who leave the education system before they complete the basic cycle (9 years). Approximately, 2.8 million students dropped out of the basic education system in 1994 (Table 2.1).

2.6 Despite earlier (and impressive gains) in educational enrollments across all educational levels (see Table 4.1), enrollment rates for lower education levels have been declining in more recent periods. Between 1980 and 1990 the annual number of primary school graduates increased from about 2 million to 3.4 million and the annual number of drop-outs remained almost constant at 1.2 million. Junior secondary graduates increased from 1.1 million to nearly 2 million but drop-outs also increased from about 200,000 to more than 400,000.¹ SUSENAS and SAKERNAS data confirm that between 1989 and 1992 the enrollment rate for junior secondary education declined in all provinces. In

contrast, the expansion of tertiary education continues to increase: in the last two years the growth rates of certificate (one year), diploma (2-3 years) and degree graduates increased by 9 percent, 14 percent and 16 percent respectively.

2.7 The supply of science and engineers graduates is relatively large and expanding. They constituted nearly one-third of all diploma and degree graduates in 1992 (Table 2.2). Their number has been increasing fast, an increase of nearly 20 percent between 1989 and 1992. The number of graduates in engineering fields alone was 14,000 in 1994. For comparison purposes, the respective number in Korea, Malaysia or

Thailand was around 6,000 in the early 1990s. With reference to manufacturing employment, the number of scientists and engineers in medium and large firms is estimated to be around 24,000 (see Chapter 6).

2.8 The main characteristic of the supply of skills is that it is now dominated by private institutions. With respect to education, the number of senior secondary graduates from private schools is now equal to that of graduates from public schools (and 10 percent greater, if religious schools are excluded; see Annex 2.1). The number of graduates from private post-secondary institutions and

Table 2.1: The Supply of Education and Skills in Indonesia ('000)^{a/}

Education Level	Total Output	of whom Private	Drop-outs	Not proceeding to next level of education
Primary ^{b/}	3,840	256	1,200	1,200
Junior Secondary ^{b/}	1,905	522	400	400
Senior Secondary	1,226	592	300	800
General ^{b/}	863	366		
Vocational ^{c/}	210	129		
Technical ^{d/}	153	97		
Diploma	59	39	100 ^{e/}	n.a.
Degree	155	110		n.a.
Post-graduate	2			
PTKs (Civil Service Tertiary Inst) ^{f/}	54			
BLKs/KLKs (MOM Training Centers)	50			
Private Training Centers ^{g/}		4,500		

^{a/} Most recent year, varied from 1992 to 1994
^{b/} Includes religious schools
^{c/} Includes commercial (SMEA) and home economics (SMKK)
^{d/} Includes three and four year technical schools (STM, STMP)
^{e/} Number is for both diploma and degree dropouts
^{f/} Enrollment in selected PTKs (see Chapter 7)
^{g/} Enrollment (see Chapter 5)

Sources: Ministry of Education and Culture; Ministry of Manpower

universities is more than double those from public institutions.

2.9 With respect to training, publicly provided training is only a fraction of that supplied by the private sector. Enrollment in private training centers registered with the Ministry of Manpower is approximately one million, and an additional three million attend training in private centers registered with the Ministry of Education (Chapter 5). Employer provided training is also extensive (Chapter 6). Both types of training, pre-employment and in-service, though grossly underestimated in official registrations, are cost effective and demand determined.

2.10 These characteristics of the education and training system provide useful information for setting priorities for human resources policies in Indonesia. When examined against costs, Government investments at the higher end of skills are significantly greater than those at basic education level. They benefit predominantly those from higher income families or employers in the formal sector (where labor costs are only a fraction of value added — typically less than 20 percent). The annual unit cost in primary education is on average \$80. The cost in a senior secondary technical school comes to 50 percent more than in a general school (Chapter 4). In a public university, annual public cost is approximately \$800, but pre-employment training in one of the public vocational training centers can cost more than \$1,000 on an annual basis (Chapter 3), a figure that is comparable to in-house civil service training and education (Chapter 7). The public provision of skills outside the general education system is therefore particularly costly.

2.11 The development of human resources policies from a training perspective would require the reexamination, first, of the efficiency of existing training programs (Section B); second, of manpower needs as they have been recently projected and have shaped developmental priorities in Repelita VI (Section C); and third, the reliability of statistics

Table 2.2: Science and Technology University Graduates (1988/89 and 1991/92)

	1988/89	1991/92	% increase
Natural Science	4,949	6,840	38.2
Medicine/Health	3,761	3,950	5.0
Agronomy	7,592	9,164	20.7
Math/Computer	3,658	3,696	1.0
Engineering ^{w/}	11,915	14,037	17.8
Sub-total	31,875	37,687	18.2
Total University Graduates (S0/S1)	142,992	149,401	4.9
^{w/} Includes architecture and urban planning			
Source: Ministry of Education and Culture			

(Section D). A more detailed discussion of public vocational centers, vocational and technical education, private training and employer in-service training are discussed in Chapters 3 to 6, respectively. Civil service training is examined last in Chapter 7.

B. PUBLIC TRAINING PROGRAMS

2.12 Public training is provided by many Ministries such as the Ministry of Manpower, Agriculture, Industry, and others. The activities of different agencies involved in training are covered by Presidential Decree No. 34/1972 that stipulates that (a) the Minister of Education and Culture is in charge of and responsible for the management of general education and vocational training; (b) the Minister of Manpower for vocational training to the non-government sector; and (c) the Chairman of the National Agency for State Administration for the training and education of government officials. This section focuses on the main provider and regulator of training to the private sector, the Ministry of Manpower, and civil service training is discussed in Chapter 7.

2.13 Training for the public in the Ministry of Manpower (MOM) is the responsibility of three different directorates general (DGs). The largest volume of training is through the DG of Training and National Productivity Development, which has responsibility for the vocational training centers and manpower productivity services offered to firms. The DG of Development of Manpower Placement (DG BINAPENTA) is responsible for a range of programs directed mainly to the informal sector. The DG of Development of Industrial Relations runs programs for employers and employees affecting the work environment. Training is delivered at central, provincial and district levels. MOM also offers training for other government training personnel such as training managers, officers, instructors, administrators in the areas such as training methodology and curriculum design.

2.14 The training programs cover a wide range of groups and areas. They vary in design and delivery modes in order to meet the needs of school dropouts, school and university graduates, other job seekers (housewives, handicapped, the old and so on), employees, self-employed and professionals. In practice, programs are targeted at three groups: (a) job-seekers (school drop outs but increasingly secondary school graduates) who receive training in the Ministry's vocational training centers (BLKs/KLKs); (b) workers in private or state-owned enterprises who may either attend fully subsidized training organized by the Manpower Productivity Directorate; and (c) self-employed workers in small business or agriculture who receive training either through DG BINAPENTA or a mobile training unit attached to a vocational training center.

Some training programs have high unit costs, low capacity utilization, weak links with employers and limited impact on the labor market outcomes of trainees.

PUBLIC VOCATIONAL CENTERS (BLKS/KLKs)

2.15 There are 153 vocational training centers (BLKs/KLKs). Initially, the orientation of vocational centers was intended to provide fully subsidized courses in the trades (mechanical, agriculture, welding and so on) leaving upon private training centers and employers the responsibility "to meet the demand of the labor market." However, due to budgetary restrictions, training is provided in less expensive areas (such as computers, tailoring, dressmaking, tourism, and driving) that are already served by private training institutions. Cost recovery measures have been introduced.

2.16 The vocational centers have low internal and external efficiency. Unit costs are high, and capacity utilization is low (on average around 50 percent). Linkages with employers are weak and the labor market outcomes of graduates (earnings, job search duration and unemployment) are in practice indistinguishable of other job seekers. These issues are discussed extensively in Chapter 3.

MOBILE TRAINING

2.17 This program supports training in basic knowledge and skills to dispersed rural communities. It is managed and supported by the Ministry's smaller vocational centers (Type B BLKs and KLKs, see chapter 3). Training lasts for around two months (200-300 hours). The program operates at about one-third of its annual capacity of 120,000 given budgetary constraints. The program has always been severely constrained by lack of funds. This has resulted in limited transport, shortage of training materials and inappropriate curricula. Currently mobile training is partially revived following soft loans by other donors. New curricula and basic training materials were prepared under the Manpower Development and Training Project (World Bank Loan 2705-IND). The unit costs of mobile training (RP300,000 per trainee) are high: this expenditure could support the education of two rural children in a secondary school for an entire year.

PRODUCTIVITY TRAINING

2.18 The National Productivity Center (NPC) at the Ministry of Manpower is responsible for the development, administration and delivery of management skills training and consultancy services to firms. At its headquarters (BPPN), the Center develops curricula for managerial training and provides some training but the main volume is delivered by the regional productivity centers (BPPDs) located in each of the 27 provinces. Management and planning are centralized. The program of courses offered and the allocation of resources to the regions is decided at the Ministry.² Provincial centers may design training courses to suit their local needs but implementation requires approval from the Center.

2.19 The centers employ approximately 200 instructors (28 at national level and 170 in the provinces). Trainers are university graduates generally with bachelor degrees in economics with a small number having science and engineering backgrounds. Instructors both at national and local level lack technical qualifications and have little direct industrial experience. This reduces their effectiveness and their standing with employers.

2.20 In 1992/93, approximately 36,000 people were trained through government provided funds. This part of training is fully subsidized. No fees are charged, training materials are provided free, transport costs of participants are generally subsidized. In addition, extension services are provided free to small firms for one year after the intervention to assist them in instituting necessary production changes. The development budget allocation was Rp15 billion resulting in an unit cost of about Rp400,000 (US\$200). This cost excludes the routine costs funded through the recurrent budget (DIK).

2.21 Central government funds are insufficient to keep the centers fully utilized. The centers offer training to the private sector on a cost-recovery basis. In 1992/93 contract training was provided to 28,000 people. This figure is close to the number of

government funded trainees - in fact, the number trained using the government budget can be overstated as some of them are trained using commercial contracts. The revenue collected by the private sector remains at the provincial level and is often used to correct for the underfunding of staff salaries.

TRAINING FOR THE SELF-EMPLOYED

2.22 The DG BINAPENTA implements three programs to "develop job opportunities that are labor intensive, use appropriate technologies, and apply to both educated manpower and manpower in the informal sector". The three programs are: the Educated Volunteer Program, Training in Appropriate Technology, and Training for Self-Employment and the Informal Sector. These programs are described below though they are not the only ones available. For

example, the Ministry of Trade has a program for Economically Weak Traders that reached 150,000 persons at a unit cost of Rp200,000 (\$100) in 1992.

2.23 Educated Volunteer Program.

The program provides training and creates "job opportunities that overcome unemployment among the educated and stimulate university graduates to join voluntary work to serve as pioneers for developmental reform". The training part of the program intends to impart skills appropriate in running a small business and the employment part assigns graduates to villages for volunteer work. The target group is unemployed polytechnic and university graduates. Though the program is managed by the Ministry of Manpower, the 5,500 participants in 1993/94 were from other ministries, too.

2.24 After they are selected, the graduates are offered two weeks' intensive training by private instructors. This is followed by an assignment to a rural community for two years. During this period graduates are paid Rp100,000/month. When the assignment is over, additional training is provided to finally prepare the volunteers

Before training programs are reformed or revitalized, they should be examined from the point of effectiveness and sustainability.

Box 2.1: Entrepreneurship Training Can Be Expensive

The Directorate for Labor Intensive and Informal Sector of the Ministry of Manpower is mandated (i) to enhance the introduction of appropriate technology, that is, labor intensive methods of production that use local materials; (ii) to provide labor intensive public works in areas with high seasonal unemployment especially during the months between planting and harvesting; and (iii) to promote self-employment via imparting training for the development of business skills (such training covers production techniques in cottage activities including costing and marking).

Since the ability of the Directorate to provide training for entrepreneurship to outsiders is limited as its staff are themselves civil servants with little private sector exposure, the training of their instructors-to-be is contracted to private firms. One such firm started in 1990. It is headed by a retired naval officer who is the Secretary General of the Association for Supplies to the Army. It does not have regular students and does not provide training directly to individuals. It specializes in *ad hoc* courses. Its clients have been the Navy, Public Enterprises, the Ministries of Trade, Transmigration, Industry, Transport and the Ministry of Manpower. The training firm speeded up the licensing procedure at the Ministry of Education by agreeing to offer a pre-retirement training course to the Navy so that officers can engage in commercial activities after their retirement. This agreement enabled the Ministry of Education to grant the license swiftly.

The training course the firm offered to MOM officials was attended by 49 trainees at a cost of Rp 2,000,000 per participant (about \$1,000). The course lasted for 400 hours (two months). Training was provided by 33 teachers. The distribution of teachers were 10 from the National Productivity Center (BPPD), 7 from the aforesaid Directorate, and four from other units in the Ministry of Manpower (including staff from provincial offices). There were also nine teachers from the private firm, two from Bank Rakyat Indonesia and one from the Ministry of Cooperation. The teachers' rate of pay varied from Rp 100,000/hour (\$ 50) to Rp 250,000/hour (\$ 125) — the latter amount being paid to university staff. Hourly pay can be even higher for distinguished speakers.

for self-employment. In practice, volunteer graduates may find their way to government employment and undergo additional training to acquire skills required for work in the public sector.

TRAINING IN APPROPRIATE TECHNOLOGIES

2.25 The objective of this program is to create employment for people with limited education in poor rural areas by utilizing local resources. The program is administered by the KANWILS in 27 provinces. Capable individuals are identified from government, banks and NGOs and are given a six-week training course in a technology appropriate to the community. The transfer of these skills and knowledge is

expected to increase the ability of individuals and groups to produce local items for sale.

2.26 Training is administered by nearly 1,000 facilitators. There were 364 training courses in appropriate technology in 1993/94 that reached only 7,300 individuals. The program is funded by the Ministry of Manpower. The development budget allocation (DIP) was Rp2.1 billion. This averages out to Rp6 million (\$3,000) per course or Rp300,000 (\$150) per trainee. These figures exclude allocations from the recurrent budget (DIK).

2.27 No evaluation of this training program has been undertaken. Despite its high costs, the incentives to facilitators are generally deemed to be low. The scope of training facilitators provide is limited, and there is no follow-up of what facilitators do.

OTHER PROGRAMS FOR SELF-EMPLOYMENT³

2.28 These programs are often inter-ministerial (for example, undertaken jointly with the Ministry of Industry) and employed more than 400 instructors in 1993/94. Some provide training that lasts for two months and offer training in basic skills necessary to run a small business; additional trainers are often contracted from private institutes and take place in temporary rented sites. Other programs provide support to small business when the key partner dies. Management training (BUM) is also offered to secondary and some university graduates to start a small business. There are also special programs for primary school leavers and secondary school drop-outs in basic skills that can be used in self-employment. In some cases, stipends are paid to participants.

TRAINING FOR OVERSEAS WORKERS

2.29 Before they emigrate, workers are "obliged to attend training and skills tests if they have not already met the required levels and, in all cases, they have to attend pre-departure orientation offered by Ministry of Manpower".⁴ Pre-departure training aims to strengthen worker motivation and working ethic and to introduce them to working situations and conditions overseas. Other departments can also be involved (such the Ministry of Health for medical workers or Ministry of Transport for seamen).

2.30 Pre-departure training is a large scale operation — in 1992/93 nearly 180,000 workers emigrated. The Overseas Employment Service (Pusat AKAN) of the Ministry supervises special training for overseas employment offered by 50 units with a capacity of 50,000 participants/year. BLKs also offer additional training to 5,000 workers prepared to undertake formal employment overseas. Finally, because work overseas often requires certified qualifications, skills tests constitute a significant activity of the Ministry. Between 1989 and 1991 more than 120,000 women were examined in areas such as hairdressing, beautician and home economics skills.

Box 2.2: Which Human Resources Investments Help the Poor? Wage Effects of Training Versus Education

The public expenditure required to finance junior secondary education for the 1.2 million students who terminate their studies at the end of primary education would be Rp 900 billion (three years at Rp 250,000). This will increase their earnings by 30 percent compared to primary school graduates (Table 1.9). If monthly wages of primary school graduates are Rp 60,000, the increase would be approximately Rp 20,000 per month.

If this amount is spent on training with a 5 percent rate of return, it will increase total wages by Rp 45 billion or by Rp 20,000 per month for 187,500 workers only.

APPRENTICESHIP TRAINING

2.31 The Ministry of Manpower has always had a low-capacity program to place people for in-service training with employers. With the aid of foreign funds (WB Loan 2705-IND), a new program was designed that combined training on- and off-the-job to last for a period of one to two years. However, this particular program was never implemented but, another apprenticeship scheme was introduced in 1994 that is discussed in Chapter 3.

TRAINING PROGRAMS IN OTHER MINISTRIES

2.32 The Ministry of Industry operates six Industrial Training Centers (BLI). Through government funds, the BLI's train government workers, small scale industry owners, handicraft producers and unemployed university graduates who receive entrepreneurial training. Like in the case of training provided by the Ministry of Manpower, the BLI's are severely underutilized due to lack of funds and provide privately contracted training. The case of the Ministry of Agriculture training centers are examined in Chapter 7.

CONCLUSIONS

2.33 The programs reviewed here have high costs, and their developmental impact is uncertain. Low quality training is the result of lack of funds and structure of incentives for civil servants. In some cases, training is the result of the development budget allocations that may create its own supply of training (see Box 2.1).

2.34 The overall usefulness of publicly provided training needs to be examined against alternative public expenditures. A area of concern should be the impact of training upon the income opportunities of the poor. Though the analysis in subsequent chapters suggests that the labor market outcomes of those who receive publicly provided training are indistinguishable from those who do not receive such training, it could be assumed that the rate of return to training is 5 percent. Under this assumption, if the expenditure required to finance the junior secondary education for the 1.2 million students who terminate their studies at the end of primary education were spent on training, it would increase the wages of 187,500 beneficiaries of training by Rp 20,000 per month. This is how much the wages of 1.2 million primary school leavers would have also increased (Box 2.2). That is, this expenditure could benefit six times more (equally poor) workers if spent on educating them at the junior secondary level.

C. PLANNING FOR HUMAN RESOURCES

2.35 Human resources planning in Indonesia is largely based on the manpower requirements approach. The Ministry of Manpower has an economy-wide manpower demand model (EMPAT) that undertakes output growth/productivity/employment projections. BAPPENAS has its own manpower model (MPKTK) for monitoring and projecting employment creation using similar industry/occupation/education matrices. The MOEC has another one (PTKDP).

2.36 A major issue for manpower projections in Indonesia is the presence of a sizable informal

Table 2.3: Variation in Employment Output Elasticities (%) Estimated by Different Researchers for the Same Period (Column 1) and by the Same Researcher in Two Consecutive Periods (Column 2) ^{a/}

	Same period Comparison 1980-85 (1)	1980-85 to 1985-90 (2)
Agriculture	-20.0	278.8
Mining/Quarrying	-72.7	-235.8
Manufacturing	66.7	-53.5
Utilities	-76.7	-72.2
Construction	-0.7	86.1
Trade	1.7	448.5
Transport	0.0	-29.7
Banking	46.4	-212.2
Other	0.0	-33.3
Total	29.3	78.3

^{a/} The figures express the ratio of one elasticity to another.
 Sources: Calculated from Paaum (1991) and Gijsberts (1993) for 1980 to 1985 (Column 1); and Gijsberts (1993) for 1980-85 and 1985-90 (Column 2).

sector with proven ability to "adjust within". The economy has shown a remarkable degree of adjustment (see Chapter 1) that makes attempts to derive projections rather futile. This reduces the reliability of forecasts for planning purposes. For example, the construction sector is projected to play a leading employment generation role in Repelita VI. In addition, construction activity is principally supported by government funding. The ability of government to finance construction in the future, as well as the volatility of the sector of economic cycles, imply that there is little certainty whether employment in construction will increase or decrease. In either case, the change will take place quite unpredictably: The ease with which the sector adjusts (through contractors, sub-contractors and casual, part-time use of labor) means that adjustment can be swift and sizable.

2.37 In addition, the projections are based on an uncomfortable level of aggregation (usually "one digit" occupations and industries and broad education levels) and outdated information (most often censuses). Sectoral employment elasticities (the response of employment to output changes) vary significantly (by a factor of 5) and are often negative.

Table 2.3 shows the substantial difference in elasticities estimated for adjacent periods or even for the same period by using different data and assumptions. When sectoral targets for Repelita VI are checked for macro-consistency, the discrepancy can reach four million workers (compared to an expected growth of employment of 11 million). A comparison of projections of shortages/surpluses made at the beginning of Repelita V with actual outcomes by the end of the plan's period shows that manpower estimates wrongly predicted half of the cases: this could have been the outcome under random selection. A significant change in the labor market between 1988 and 1993 was also missed: the unemployment rate of graduates from general senior secondary schools fell from 19% to 12% (Table 2.4).

FROM MANPOWER PROJECTIONS TO SKILLS NEEDS

2.38 In 1994, the increase in the labor force by the end of Repelita VI (1999) was projected to be around 11 million workers. Employment prospects for Repelita VI were interpreted according to a "10:3:2" rule: "for every ten job seekers in the region, there would be three vacancies but only two could be filled with workers of suitable skills". These calculations lead to an inflation of skills needs because the "3" refers to openings in the formal sector only, and the "2" to placements through the

Table 2.4: Projected Mismatch in Demand/Supply of Education ('000 Workers) and Actual Changes in Unemployment Rates During Repelita V (1988/89-1993/94)

Education Level	Anticipated Shortages(-) Surpluses (+)	Unemployment Rate (%) ^{a/}		Manpower estimates compatible with unemployment change? ^{b/}
		1988	1993	
Primary or less	-45	2.7	2.0	yes
Junior Secondary	-352	7.1	4.8	yes
Senior Secondary General	709	18.8	12.5	no
Senior Secondary Voc'l	-174	13.1	8.6	yes
Tertiary	111	10.6	9.9	no
Total	249	7.3	5.5	no
^{a/} Unemployment rates for urban workers.				
^{b/} A "yes" indicates that an anticipated shortage was accompanied by a decline in the unemployment rate and an anticipated surplus by an increase in the unemployment rate.				
Sources: McMahon and Boediono (1992b); Unemployment SAKERNAS				

local exchange office. It is inappropriate, however, to assume that the rest "8" are necessarily in need of some form of training to acquire employable skills. When the existing unemployed are added to the projected labor force entrants, the need for training is inflated further.

2.39 When needs are calculated in this way, they typically suggest that a massive training program should be undertaken. The Ministry of Manpower estimated that 4 million job seekers would require training during Repelita VI. This could be solved "through launching appropriate programs including advanced skills training in the facilities of industrialized countries. Such programs require 400 hours (3 months) of training at Rp 300,000 for each job seeker that Government funds cannot meet. Therefore, the active participation of the private sector is invited to solve this financial problem." This approach to training can lead to inefficient interventions. For example, it may require substantial private financing for publicly provided training and can act as an employment tax (see Chapter 6 on the levy-grant scheme).

ALTERNATIVE CRITERIA FOR TRAINING INTERVENTIONS

2.40 An alternative way to set priorities for training interventions (compared to needs determined by manpower planning) is by identifying market failures in the area of skills. A selective list of cases that can lead to real or apparent skills gaps is presented below.

2.41 Imperfect labor markets When firms have some power in wage-setting, then even in an otherwise human capital framework, employees will not be not fully compensated for the costs of their general training and will tend to acquire too little. In this case, the appropriate policy instrument is not training but the removal of firms' market power. This market power will not go away with the imposition of minimum wages. In fact, minimum wages, if binding, may aggravate the situation as it will be employers who would provide too little (in-service) training because possibilities of cost sharing are reduced. The high value of the elasticity of supply of labor in Indonesia

(employment creation in the modern sector with low upward pressure on wages) implies that compliance may be low. Or, if compliance is high, the efficiency losses may be significant (given that the elasticity of demand, that is, the ease of substitution of capital for labor, is also high in Indonesia).⁵

2.42 Poaching⁶ When training is transferable, then the benefits from training can be shared by the worker, his firm and potentially other firms that can poach him and free ride on training expenses. No arrangement that reduces the cost of training to the existing employer would be sufficient to provide adequate incentives for training. In fact, if wages are inflexible, this would preclude cost-sharing between employers and workers; in-service training will not be offered even by competitive firms. Thus employers who train will either lose their invest-

ment in workers' skills or have to pay higher wages to those they already trained in order to retain them. In this case, the market left to its own forces may fail to invest enough in skills as employers cannot own people — like machines, and fear that competitors will attempt to poach their skilled workers. However, much of the skills on-the-job training generates are either uniquely applicable to particular operations undertaken by the original firm or can be transferred to another firm only with technical assistance from the firm having the know-how (Table 6.4). This reduces the probability for poaching. In addition, the evidence in Indonesia suggests that poaching is not a serious concern of employers (chapter 6) and another market failure can neutralize the effects of poaching (see the new technology argument).

2.43 Credit Markets Since workers have often no collateral against loan default, they may be credit-constrained from acquiring sufficient training — evidence for this is present even among industrialized countries. Again in this case the market failure rests in the capital markets, not in the market for training.

2.44 Outside Opportunities As the number of educated and skilled workers increases, this provides firms with increasing outside opportunities. Firms enjoy abnormal profits while they can reduce the amount of training they provide. Workers will also start "under-investing" in their own skills. This is not a case that is amenable to training. It is, in fact, a demonstration of competitive markets at work, though the Government should ensure that school enrollments do not decline for the poor and at lower levels of education.

2.45 Complementarities If labor and capital are complements in production, deficient investment in human capital reduces the productivity of physical capital and leads to deficient investment and slow growth. In this case the question arises why firms do not provide such training themselves and have to rely on Government action the results of which

Skills gaps are always present; they represent the difference between the quantities of skills supplied and skills demanded at any single point in time.

can often show only after a long delay (for example, it can take several years before a training program is proposed, designed, approved and implemented). Foreign firms in Indonesia have shown little concern with skills. The Manufacturing Survey (1992) listed "careless use of equipment" as the last reason of employers' concern (chapter 6).

2.46 New Technology Firms may be reluctant to innovate because the labor force is insufficiently skilled to apply the new techniques. Workers do not acquire sufficient human capital because there are not many innovating firms. But, if shortages lead to serious poaching, this can be corrected: the rise in labor turnover costs will increase the incentive for firms to innovate as they attempt to moderate these labor costs by maintaining their success in innovation. If not, firms will confront higher costs of attracting new workers and may close down. Many NICs have solved the problem of technological upgrading through foreign investment. This option is a promising one for Indonesia as the effects of deregulation showed (see Chapter 1).

2.47 Training policies depend on which of the above mentioned cases apply and to what extent. Public provision of training is not always a first best option. An alternative policy is public finance. For example, tax incentives for workers to invest in training are more appropriate when firms have significant market power in wage setting. Tax incentives for employers can help reduce the poaching externality, the complementarity between capital and labor, and interactions between skills and innovation. However, tax incentives are less appropriate when taxes are low because they cannot cover much of the training costs or lost wages. Apprenticeship systems may also help address problems of poaching and innovation but require appropriate regulation of wages and employment contracts (see Chapters 3 and 6).

2.48 A case can be made for public intervention in training in areas where costs are prohibitive for the private sector but have social benefits unconsidered by the private sector; skills that require long periods of training; and skills shortages that can be predicted. The last requirement is the hardest to meet.

2.49 The solution to the first case, high costs, rests on the public finance of training (through, for

example, scholarships, vouchers or tax incentives) rather its public provision. In fact, given that the public provision of training is in general more costly than the private one, then the former may add an efficiency loss to the attempt to alleviate skills shortages.

2.50 Skills that require long periods of training are usually those that should be acquired through lengthy education or substantial on-the-job experience. The cost-effective approach in this case is for schools and institutional training to provide the general part of the curriculum and leave the occupation-specific part upon enterprise-based or enterprise-sponsored training. The question then becomes "at what stage in the education of the individual should occupation-specific skills be developed?". This relates to the third requirement, that skills should be predictable. This requirement is particularly hard to satisfy for successful training interventions. With the exception of demographically driven occupations (such as teachers and health care personnel), for whom projections are rather arithmetical once policy objectives have been determined, the growth in other specialized occupations are generally unpredictable and can be often met through substitution of one kind of workers by another (with some wage adjustment depending on productivity loss for poor matches). Training interventions for those occupations that require significant pre-employment training and whose demand cannot be forecast should be internally flexible, in the sense, that they should leave the final choice of specific occupation as close to the graduation as possible. As far as possible, the more specialized types of training should be acquired in-service. Training should therefore be equipped with close links to employers.

2.51 The planning of human resources development can, therefore, rest in the future more on labor market analysis rather than the conventional manpower requirements approach. The latter assumes that the supply and demand for different skills are independent of one another, and that the role of manpower development planning is to avoid skill shortages or surpluses. However, as supply and demand are typically

interdependent and can be regarded as different aspects of the same process, the most important aspect of planning is to undertake labor market analysis, identify market failures and introduce policies that can correct for them (rather than policies that will increase directly the supply of specific skills). Labor market analysis would require a better information system — an issue examined next.

D. INFORMATION SYSTEMS

2.52 Information systems in Indonesia are weak. The data discrepancy in labor market information between different statistical sources, or even the same survey at different times, is often so high that severely restricts their usefulness for labor market analysis. These discrepancies are present (and sizable) even among basic labor market indicators such as broad labor force participation rates.⁷ Weak information systems reduce the ability of planners, educators, employers and workers to interpret labor market signaling. Lack of reliable labor market data at the local level also affects adversely the impact of donor supported projects in Indonesia.⁸

2.53 The weakness of information systems derives from many sources. The monitoring of local labor markets that is undertaken by the regional offices of the Ministry of Manpower is based on unreliable information supplied by labor exchanges. Local statistics are limited to registered unemployed youth workers and job vacancies in the formal sector neither of which are representative of local labor market conditions. The reliability of this information is further reduced because records are not updated regularly. These deficiencies reduce the ability of the Ministry of Manpower, that is the central agency for monitoring labor market

development, to form an accurate picture of the characteristics of the labor market across the country.

2.54 Different surveys often use different definitions. At times the discrepancies are extremely high. For example, due to differences in the treatment of unpaid family workers the data in the national labor force survey (SAKERNAS) suggests that 28 percent of the labor force were in this category in 1990 while Census data for the same year brings their proportion to only 20 percent (a 30 percent difference or approximately six million workers). Also, the census shows that less than 50 per cent of total employment is in agriculture, while SAKERNAS suggests that the proportion is over 55 per cent. Though labor market analysis should rely more on the labor force survey, which has a good questionnaire and relatively skilled enumerators, rather than the census, there are

considerable problems with the size and representativeness of its sample.⁹

2.55 Often, due to omissions or errors information is not classified in the appropriate category. For example, between 1985 and 1990 one-in-five of new industrial jobs were

classified in "other manufacturing" mainly due to wrong coding. In the 1990 census 700,000 workers were classified under "unknown status" while in 1980 nearly two million family workers may have been omitted from the census. In some cases, cross examination of the data wrongly suggests that a sizable proportion of professionals (such as architects and doctors) have attended only primary education — in one case, as many as 30 percent.¹⁰

2.56 In some cases, over-regulation often creates significant statistical problems. For example, private training centers may be registered with both the Ministry of Manpower and the Ministry of Education to avoid complications due to lack of clear demarcation of authority between the two ministries. Also, ambiguity of administrative

A problem for manpower forecasts in economies with a substantial informal sector is that adjustment takes place quickly through flexible wages and worker mobility across economic sectors and regions. This can be neither easily measured nor predicted.

requirements outside the education and training sectors creates definitional problems. For example, the tourist sector is not clearly delineated: Licensing of restaurants, hotels, travel offices and food outlets are under the jurisdiction of the Ministry of Trade, Ministry of Industry, Ministry of Transport as well as the provincial Regional Tourism Service.

2.57 Some important phenomena for a country like Indonesia (such as circular migration) escape the net of labor statistics. Further improvements in survey content and method would be useful. But probably more important than any inadequacies in the supply of statistics are the continuing weaknesses on the demand side. Consumers of statistics (particularly in line Ministries) are often interested in data needed for projections (such as occupational data) that are under pressure to routinely provide, rather than in those needed to answer policy questions (such as tracer study data).

2.58 One of the areas of labor market statistics most in need of improvement is wage statistics. Many wage data (for example, on agriculture, construction and occupational wages) are of poor statistical quality. Delays in publication of wage data tend to limit their usefulness for monitoring purposes. Surveys are often gender-blind, not distinguishing between male and female wages.

2.59 Though several improvements are under way,¹¹ the quality of data remains low and there is significant duplication of effort despite the significant amounts and effort spent on labor market information systems.¹² There are three data series on manufacturing employment produced by Ministry of Manpower, Ministry of Industry and the Central Statistical Office. Definitions of what constitutes an industrial activity differ among these agencies, and the data are generally unreliable.¹³

The quality of labor market statistics has improved considerably in the 1990s. When new results on wages and vacancies become available, labor market analysis can become the cornerstone of human resources development policies.

STATISTICAL TREATMENT OF ECONOMIC SECTORS

2.60 Statistical differences in the size of the formal sector and what constitutes the private sector have important implications for training policies. The statistical treatment of the formal and informal sector overstates the former at the expense of the other. Typically formal sector employment is locally based on the "wage employment" criterion. On this criterion, about one-third of the labor force (approximately 25 million workers) are classified as belonging to the formal sector. According to this, an unlicensed establishment with one wage worker is classified as belonging to the formal sector while a self-employed professional is classified as an informal worker. In fact the number of university graduates in the informal trade are

twice as many as in the formal sector trade (6 percent versus 3 percent).¹⁴

2.61 The size of the formal sector, when more appropriately defined is much lower. On the basis of employment in "incorporated establishment" less

than 12 million of workers are in the formal sector of whom four million are civil servants. Also, the private sector as defined in Indonesia includes all public sector activities that result in the production of a service or good that is exchanged in the market (such as utilities and other parastatals), that is, it excludes only central administration. Thus, a training needs analysis that is based on 25 million formal sector workers broadly defined will produce drastically different results from one based on only 8 million private sector workers employed in incorporated establishments.

2.62 Differences in employment estimates due to definitional issues in Indonesia arises also

within sectors. For example, there is no clear definition of the construction sector. The Central Statistical Office (CBS) defines the sector more in terms of physical activities (the construction and maintenance/upgrading of facilities) while the Ministry of Public Works defines it more in terms of contractor and consultant services. In practical terms this difference means that CBS data relate to inputs and outputs as classified by the standard occupational and industrial codes while the Ministry's data relate to licensing and regulatory aspects of contractors, consultants and construction enterprises.

E. CONCLUSIONS AND RECOMMENDATIONS

2.63 There are many public training programs that are not designed in an way that clearly addresses failures in the provision of skills. Some were initiated and others expanded in an uncoordinated fashion with donor assistance. Overall, unit costs are high and create significant pressure on the public budget.

2.64 Mobile training has high costs (Rp 300,000 per trainee) and is run below capacity levels. To make it fully operational at the current level of quality would require trebling the current allocation of public funds. Quality improvements would require additional funds. Given that mobile training takes place primarily in rural areas, its usefulness should be examined against the costs of alternative investments in human capital (such as education and health) or infrastructure.

2.65 Productivity training is equally expensive. The development budget allocation alone amounts to unit costs of Rp 400,000. Still, the productivity centers remain under-funded and their instructors offer training to third parties including state-owned enterprises. It is not clear to what extent these additional activities crowd out the private provision of training, but this type of training may create fiscal problems (as it is paid from public funds) and decrease effi-

ciency (see Chapter 3 on the effects of third party contracts undertaken by civil servants).

2.66 The Indonesia Second Perspective Plan states that in the last 25 years training "did not succeed in handling the unemployment problem [and] low productivity of employment ... [The] constraint is the imbalance between the supply and demand for manpower ... [The] inability of educational institutions to throw certain programs providing the skills and expertise needed by the labor market has been a constraint on the efforts to effectively expand job opportunity". The priority areas for action are stated later on in the Plan and include manpower planning, distributing workforce from manpower surplus to manpower lacking regions and accelerating the transfer of technology from expatriate to Indonesian workers.

2.67 The discussion in this chapter and the previous one (on labor markets) indicates that training is not always the most appropriate policy instrument for a reduction in unemployment and for increasing productivity.

2.68 Manpower planning (of the manpower requirements type) is an unreliable technique for human resources development policies. In addition to weak methodological underpinnings, manpower planning in Indonesia is hampered by weak information systems. The nature of the economy (large informal sector and prevalence of casual employment in the formal sector) imply that adjustments can take place quickly, and this reduces further the validity of manpower planning.

2.69 A five-year plan cycle is not always reliable or flexible enough to enable training to respond to changes during the planning period, especially when the targets are only reviewed at the mid-point of the plan. If performance of the plan is measured against fixed targets, the ministries would adhere to them and would be unresponsive to labor market changes. Training programs should therefore be monitored and adjusted annually if necessary.

2.70 In conclusion, it would be desirable, *first*, to rationalize the scope and activities of public training across the whole spectrum of interventions taking into account their fiscal implications, substi-

tution possibilities with the private sector and relative efficiency (that is, the usefulness of training vis-à-vis alternative human resources development policies). Before corrective action is taken to revive public training, in terms of greater utilization or improved quality, clear targets need to be set with respect to what the system would look in its mature stage, and whether that stage would be efficient or sustainable from public funds. BAPPENAS can assess how many resources are used for training by the public sector across various Departments and Agencies and take the lead in setting up a national body to manage manpower development across the whole economy.

2.71 *Second*, private sector and other public sector training capacity should also be taken into account in planning for training. In many instances, publicly provided training competes in the same areas as the private sector: Government training can avoid duplicating what the private sector can do well. The coordination between the Ministries that are involved in the planning and implementation of training could also be improved: there is a need to

have a single mechanism to develop private training to provide national guidance and encourage decentralized implementation.

2.72 *Third*, public training interventions need to be targeted to areas where there is a market failure. Of course a demand for these programs would have to exist.

2.73 *Finally*, the information system should be improved. Common definitions could be developed, additional and more reliable information on wages and vacancies could be created, and statistical procedures could be streamlined to economize on costs. The Central Statistical Office can play the lead role in all survey data as it has already technical expertise, and ability to coordinate survey demands. It can become a feeder of information to line Ministries that can reduce their activities in the areas of preparation, collection and cleaning up of data. The capacity of Ministries to engage in data processing can increase and be used for labor market analysis more than for manpower forecasts.

ENDNOTES

¹ Ministry of Manpower (1992) pp. 136-7.

² Courses are offered in a variety of subject areas including achievement motivation, leadership, supervision, management of small business, management consulting, total quality control, productivity measurement and analysis for workers and for the company, productivity strategy, and total quality control.

³ Another program not discussed in the study is the program for Labor Intensive Work. During the First Perspective Plan (1968-93), the Labor Intensive Program, targeted at areas of high populations prone to natural disasters, offered training in 29 types of labor intensive technology and employment in public works to 13 million people in 16,500 villages. The Second Perspective Plan (1994-2019) envisages that "it is necessary to prepare skilled personnel to serve as mediators and tutors that can impart their knowledge to the village community for successful independent development, applications and distribution of labor intensive technology". Participation in the program was 300,000 individuals in 4,000 villages in 1992/93. Participants receive payments equal to 70 percent of the minimum wage.

⁴ The overseas employment of Indonesians is coordinated by the Center for Overseas Employment of Depnaker (Pusat AKAN). It is executed by 250 private companies affiliated with the Indonesian Manpower Supplier Association (IMSA). Before they are granted visa, workers should satisfy several criteria based on skills, expertise, need, ethic, spirit, motivation, mental attitude and physical condition. After selection and training, a decision is made by Pusat AKAN that reexamines the previous qualifications and other administrative requirements. Then, Pusat AKAN issues a recommendation to the Directorate General of Immigration. When the travel documents are awarded, the recruiting company arranges for a visa with the country of destination. When this is issued an employment contract is drawn with

the recruiting company that acts for and on behalf of the worker before the manpower supervisory staff. Then Pusat AKAN issues a recommendation letter to the worker to be used when s/he departs. In all, there above procedures and additional ones upon the return of the worker come to more than 20 steps.

⁵ Squire and Suthiwart-Narueput (1995).

⁶ "Poaching" means "stealing" workers from another firm.

⁷ See background report by Dar (1994); also Manning (1994).

⁸ REDECON (1991: iv).

⁹ Popovic (1992).

¹⁰ Godfrey (1995).

¹¹ These improvements include a reduction in the publication delay of the labor force survey to one year; a new quarterly wage survey has been initiated, which collects and aims to publish quickly data on median earnings per production worker from establishments in industry, hotels and mining. A report on the Manpower and Employment Situation in Indonesia has been published annually since 1992; a frequent Manpower Newsletter was initiated by an ILO project (ILO/UNDP project INS/90/001, Information System for Employment Development and Manpower Planning); and district-level labor force survey (SAKERDA) is being tried in a sample of districts.

¹² The World Bank, ILO/UNDP, USAID and other donors have supported the creation of information systems at Ministry of Manpower, BAPPENAS, the Central Statistical Office and the Ministry of Education as well as various pilot programs to develop regional capacity for planning and labor market analysis and improve job placement services.

¹³ REDECON (1991).

¹⁴ Mehmet (1993).

Public Vocational Training Centers

3.1 The vocational training centers (BLKs/KLKs) under the Ministry of Manpower (MOM)¹ were intended to become the cornerstone of Indonesia's industrial training effort. Their number reached 153 in the early 1980s with substantial donor aid, and the Fourth Five Year Plan (Repelita IV: 1984/85-1988/89) envisaged that more than 120,000 job seekers would be trained in the centers annually. However, these expectations did not materialize and enrollments reached an all time low in 1988 with fewer than 25,000 participants. Since then, the operations of the vocational centers have been in continuous jeopardy due to high costs and fiscal constraints. The current plan (Repelita VI) expects that only 50,000 government sponsored trainees will be trained annually for the next five years. Despite a decline in enrollments by half in the last ten years, the number of instructors has doubled.

OVERVIEW

3.2 This chapter briefly examines the characteristics, operations and efficiency of the vocational training centers (Sections A and B) as it has little to add to the recent findings of a MOM study.² The main findings of that study reflect some of the problems discussed in Chapter 1 (on the labor market) and Chapter 7 (on education and training of civil servants). Instructors do not meet the needs of technological developments and changes. Training materials and publicly funded modules are not always of appropriate quality and content which is needed for industry. There is little interest in the business community in this training, and employers do not make use of government incentives (tax exemption) for training expenditures.

3.3 Instead, this chapter takes up two particular issues. First, the amount of public funds that pre-employment training in the public vocational centers absorbs and, second, the effects of allowing

the training centers to engage in "cost-recovery" and keep the proceeds. (Section D). The main findings of the chapter are:

- First, publicly provided training has high costs and cannot be supported by public funds. Annualized unit costs in BLKs are between Rp 1 and Rp 2 million. Government funds for the support of BLKs/KLKs are limited and the centers are seriously underutilized. It is estimated that the annual allocation of public funds to train (at basic level) only 50,000 job seekers may be sufficient to finance the training needs of the work force in medium and large size manufacturing firms (with a total employment of 3.5 million).
- Cost-recovery measures as currently administered are not necessarily efficient. They may solve the problem of low salaries for civil servants but create others. They may crowd out private training initiatives, charge prices that do not reflect capital

costs, or simply supply services to the point that instructor incomes (rather than the supply of training) is maximized.

An unin-

tended aspect of instructor incentives that are based on this type of cost-recovery may be that officials restrict the operation or growth of private training institutions through accreditation and licensing.

3.4 The recently (1994) introduced apprenticeship scheme is also reviewed (Section E). The scheme is technically sound. It receives technical assistance (GTZ). However, it has been introduced without prior evaluation of its costs. Though it may solve part of the financial

Built with donor assistance aiming to reduce skills shortages, the BLKs/KLKs reached an enrollment of 120,000 trainees in 1984. Since then, enrollment declined by more than half and the centers are underutilized.

problems of the vocational training centers, it may impose a sizable cost on firms. In addition, the number of firms available to participate in the scheme is relatively small as other Ministries are also engaged in reforms that intend to involve the private sector. For example, the implementation of the dual system in MOEC regulated secondary vocational schools is expected to take place in 6,000 firms, and other important players in the field, such as agricultural training provided by the MOA, construction trades by the Ministry of Public Works, industrial training by MOI, training for the informal sector by the Ministry of Cooperatives as well as commercial and trade associations and a multiplicity of local providers, have not been included in MOM's analysis of the situation. Also, the thriving private training sector has not been incorporated in the analysis (of MOM or other Ministries) which can give rise to the supply-driven effects noted earlier in the MOM study (para 3.2). Finally, it is not clear how long it will take for the public vocational centers to reach a standard of services that will be appreciated by industry, nor how much it will cost to the Government, employers, workers and trainees.

A. OVERVIEW OF THE CENTERS

3.5 The Ministry of Manpower (MOM) operates 153 Vocational Training Centers (BLKs/KLKs). The centers are classified into three types: 33 Type A centers (BLKs) are the biggest ones and located in urban areas in 26 provinces; 16 Type B centers (BLKs) located in smaller urban centers in 12 provinces; and 104 Type C centers (KLKs) that are the smallest ones and located throughout 19 provinces primarily in rural areas. The bigger centers provide training in industrial and services skills while the smaller ones offer training in appropriate technologies for rural areas and self-employment skills.

3.6 The centers are designed to accommodate approximately 120,000 trainees annually. Type A BLKs have a capacity to train 60,000, and Type B

Table 3.1: Enrollment of Government-Funded Trainees and Staff in Ministry of Manpower Vocational Training Centers

	1984	1988	1992	1994
Trainees	118,000	30,000	80,000	59,000
Staff	1,600	2,240	3,525	
DIP (Rp bl)	12.6	7.6	44.3	

Sources: Center for Vocational Training; Ministry of Manpower; Bank estimates.

BLKs 20,000 and the KLKs 40,000 trainees per annum. The BLKs can provide training at basic level (about 450 hours of training over three months), intermediate (additional 240 hours) and advanced levels. The KLKs offer a more basic level of training of 200-300 hours over two months. By the end of the first Twenty-Five Year Plan (PJPT I:1968-1993) the centers had trained 1.3 million, of whom less than half (550,000) had received training in industrial skills (mechanical, electrical, automotive and construction). The rest were trained in management/business/secretarial courses and agricultural subjects. These are areas well catered for by the private sector or other government agencies (such as the Ministry of Agriculture).

3.7 Over time there has been a decline in the size of the operations of the centers. Government sponsored enrollments reached nearly 120,000 in 1984. The Government's ability to fund the vocational centers declined in the mid-1980s when project funds dried out and the macroeconomic situation deteriorated necessitating budget cuts. Enrollment declined to 30,000 in the late 1980s though the number of instructors increased (Table 3.1). No new centers have been built in the last decade though significant allocations through the development budget have been largely maintained. During the current 5-year plan the government sponsored trainees are expected to be 50,000 per annum.³

3.8 In addition, there has been a gradual switch towards less expensive, non-industrial short-term training. At the peak of the centers' operations in 1984, more than 60,000 Government-funded trainees received training in industrial skills. By

1992, their number was 45,000. During this period employment in manufacturing had increased by more than three million workers. Today 45 percent of training is in agriculture, tourism and commerce areas and, in some cases, driving lessons.

3.9 The decline in budget allocations while maintaining the number of centers and increasing the number of instructors has been accompanied by a reduction in the duration of courses. The majority of the training has been confined to basic level, though a few of the bigger BLKs offered some intermediate level skills. No center provides in effect training at advanced level. Utilization of the centers varies between 35-70 percent from year to year depending on the availability of Government funds.

3.10 Cost-recovery measures were introduced in the late 1980s. Recognition of the fact that the operations of the vocational centers could not be sustained from Government funds led to legislation that allows the centers to provide "third party" training on a cost-recovery basis (Ministerial Decrees PER-02/MEN/1987 and 935/MEN/1988). In 1993/94, approximately 20 percent of trainees were "third party" funded, but the ratios increased to 36 percent by 1995/96.

3.11 The BLKs/KLKs operate under rigid planning and management conditions. Their budget and services are planned and decided in Jakarta between MOM, BAPPENAS and the Ministry of Finance. Year to year budget allocations vary significantly and seem to be generally unpredictable as is indicated by changes in the number of Government-sponsored trainees. Between 1989/90 and 1990/91, for example, the number of such trainees in selected BLKs/KLKs increased by 300 percent, only to decline by 11 percent the following year and again increased by 18 percent between 1991/92 and 1992/93. Reliance on foreign funds and lack of continuity in the DIP (development budget) allocations deprive the centers of long term planning.

B. STAFFING AND STAFF DEVELOPMENT IN THE BLKs/KLKs

3.12 In 1993, there were 3,223 BLK/KLK instructors. Their number has been increasing over time despite declining enrollments. During Repelita V, 500 new instructors were recruited, and since 1988 their number increased by nearly 50 percent. Today there are nearly twice as many instructors as in the early 1980s when the system was operating at full capacity and had nearly twice as many trainees (120,000 annually).

3.13 Most instructors are recruited without employment experience. They are subsequently given two years pre-employment instructor training at MOM's own facilities. Overall, approximately 1,000 instructors go through training every

year, half of them for upgrading. In the years 1989 to 1993, about 70 percent of instructors received in-service training with more than half having participated in long-run programs of one year or more. Training of instructors may also take place overseas. Almost one-in-ten (225) of instructors have received training abroad for over one year. MOM has its own trainers-of-trainers and fairly extensive facilities developed with the assistance of foreign loans. Training to central and provincial staff includes residential accommodation, food and honoraria. At the end of their training, the new instructors still have little, if any, industrial exposure. At times, attendance to such training is a formal requirement and a salary supplement.

3.14 For secondary school graduates the benefits of joining a vocational training center as an instructor are substantial. If successful, they will have lifetime employment security. Non-monetary benefits associated with in-service staff upgrading (locally and overseas) are

The number of instructors has doubled in the last ten years, but most have been recruited without industrial experience.

significant (Table 7.4). Through in-service training and often education, instructors enhance their future earnings capacity without incurring private costs. While on such upgrading training they will continue receiving their salary. Other supplements can include the standard perks of civil servants (subsidized accommodation and utilities, rice supplement and so on) as well as additional salaries from DIP allocations. In addition, like other civil servants, instructors can receive the standard civil service pension after only 15 years of service. There are no visible signs of instructors willing to leave the vocational centers for work in the private sector even after they have benefited from overseas training.

3.15 In addition to staff development in the form of training provided in MOM facilities, instructors-to-be can also undertake more general education programs. For example, about 500 Mobile Open Training instructors benefit from special arrangements with IKIP Jakarta where they follow D2 programs. Though most instructors are generally recruited among secondary school graduates, there are no specific regulations covering the selection of Mobile Training Unit instructors as long as they can properly manage activities comparable to those undertaken by an assistant level instructor. Staff improvement is perhaps the most consistent activity of the vocational centers. Despite the fact that most instructors are recruited with secondary education qualifications only, today more than 500 have post-secondary qualification (D2 and above) of whom 120 have degrees (S1). In the BLK survey of 1990 (WB, 1991) the BLK/KLKs had significantly lower ratings than private training centers in the critical areas of links between training and employment and formal links with industry. However, the BLKs had the highest ratings for staff development. It was in this area where private centers did worse, in the sense that they offered little in-service upgrad-

The centers do not engage in student selection and placement, and this weakens their links with employers and the labor market.

ing of skills and were relying more on readily available instructors in the open labor market.

C. STUDENT SELECTION, PLACEMENT AND LABOR MARKET OUTCOMES OF TRAINEES

3.16 Originally recruitment was planned to be among weaker applicants, that is, those who graduated from primary schools or dropped out of secondary school. The intention was for the centers to provide opportunities to the less fortunate who for lack of ability or economic/social reasons could not proceed to the conventional educational system. It is on this premise that trainees are still exempted by legislation from paying fees.

3.17 Student selection now takes place among the more educated applicants. Students who had below

senior secondary education often lacked basic literacy and numeracy and were unable to handle technical equipment or to simply understand the property of materials. Eventually a consistent pattern

emerged: those who failed to qualify for entrance were predominantly the school drop outs and those who passed were mainly senior secondary schools graduates. Today, 90 percent of the trainees are senior secondary school graduates. An equal percentage of trainees are between 19 and 23 years of age though the upper limit for admittance is 45 years of age. This reflects in part the fact that no advanced training is on offer.

3.18 Student selection is officially the responsibility of the Kandep (the district office of MOM). Admittance to a program requires minimum age of 18 years, physical fitness, good citizenship, and registration as a job seeker with the Kandep. The Kandep screens the applications, administers the required test and chooses potential students. As selection is not decided directly by the BLKs, some have introduced additional recruitment tests. The BLK Tangerang, for example, administers math tests to applicants prior to selection.

3.19 After the typical three-month training, the BLKs/KLKs send a list of successful trainees back to the Kandep. The Kandep is then responsible for student placement. As in the case of student selection, placement is increasingly facilitated by BLK teachers through their contacts with local firms.

3.20 Student placement often depends on additional tests designed and administered by employers. These are not tests specifically designed for graduates of the BLKs/KLKs and apply to all applicants. Unless applicants pass these tests, they will not be offered a job irrespective of their education or training credentials. This indicates that employers do not often pay particular attention to BLK/KLK qualifications as such.

3.21 A study in the early 1980s on outcomes of BLK/KLK graduates⁴ traced graduates from schools in four locations: Jakarta, Semarang, Surabaya and Medan, along with a control group of newly registered job seekers.

The study was conducted one year after graduation (or registration, for the control group). Its main findings were that BLK graduates found employment earlier than non-graduates

(but it was not clear whether this related to the intensity of efforts by the Kandep). Still, one year after graduation the overall unemployment rate for the sample was 66 percent with no substantial difference between graduates and non-graduates. BLK graduates were earning more than the non-graduates but both earnings and employment outcomes varied significantly by programs, location and personal characteristics of trainees.

3.22 The above study refers to a period when BLK/KLK were newly built and still funded by project funds. It is likely that due to budgetary constraints, the quality of teaching has subsequently declined. More recent studies have shown that BLK graduates do not appear to have an earnings advantage over non-graduates, nor do they have a significant advantage over others in terms of having permanent or contracted employ-

ment. A 1988 tracer study of BLK/KLK graduates who had registered for work at a Kandep found that one year after registration only 28 percent were employed and of those who were employed, 38 percent were working for government or in a government enterprise.⁵

3.23 In another study, BLK graduates again did not appear to have an earnings advantage over non-graduates.⁶ Sixteen percent of the graduates earned Rp 40,000 or less per month compared with less than one percent of non-graduates (MOM, 1993). There were no significant differences among BLK/KLK graduates and non-graduates with respect to their employment distribution in permanent, casual, occasional and contracted work. In a follow up survey only 50 percent of BLK/KLK graduates were employed three months after graduation following the same unemployment patterns as the rest of the population. In a tracer study of

1368 graduates, 399 of BLK Singosari the 649 that responded were still looking for work nearly a year after graduation.⁷

3.24 The views of ninety-seven companies known to have hired BLK graduates were echoed in

another study (MOM, March 1992). The companies had recruited 172 BLK/KLK graduates. For reasons of comparison, another 172 "similar" workers in the same firms who had not graduated from a BLK were identified. Though the methodology and sample may not be completely reliable, interviewed supervisors stated that three-quarters of BLK/KLK graduates required basic training on entering the firm and some required more than three months training. The supervisors argued that the usefulness of BLK/KLK training is limited due to the lack of modern machinery and tools. They also pointed out that parts of the curriculum at the BLKs is dedicated to non-technical aspects, such as to physical fitness and mental discipline, limiting the time allocated to instruction of skills.

The usefulness of BLK/KLK training is often limited due to lack of modern machinery and tools, and outdated curricula.

D. FINANCING

3.25 The BLKs/KLKs are funded from various sources which include mainly Government funding, foreign funding and third-party funding. Other, smaller, sources include selling manufactured products to private purchasers. For example, BLK Surabaya has a Productivity Training Center which produces wood and rattan furniture which is sold abroad (about one container is shipped every month). However, this is as of yet a nascent activity and brings limited revenues.

GOVERNMENT FUNDING

3.26 Given that Government provided services are funded from two different budgets, the DIK (recurrent) and the DIP (development), the issue arises as to what is the total cost of a publicly funded activity and, in the present context, BLK provided training. In theory, calculations should exclude DIP funds as they support more capital investment than recurrent type activities. However, in the case of training, DIP allocations constitute almost half of the total funds allocated to BLK training and some of them support honoraria, materials, equipment maintenance and building rehabilitation. DIP allocations have historically helped to just keep the system going as is evidenced from the stagnant/declining enrollment rates presented in Table 3.1. Construction of *new* buildings has been practically non-existent once donor funds run out. In economic terms, expenditure on maintenance and servicing equipment cannot be considered *net* investment as it simply takes care for the depreciation of existing capital stock. Thus, for the period covered in this report the total allocations to BLKs, from both DIP and DIK, should be included in the calculation of unit costs.⁸

3.27 In the early 1990s, the development budget allocation (DIP) alone was between Rp 20-40 billion (\$10 million) and the centers

Table 3.2: BLK Yogyakarta: Cost Estimates
1993/94

Annual Capacity (Total number of students that can be trained)	1,500
Students trained from Government Funds (DIP)	336
Full-time equivalent (336x12/4.5)*	126
Full-time instructors (excluding 50 support staff)	42
Trainee/staff ratio	3
Recurrent Budget (DIK)	\$158,500
Development Budget (DIP)	\$92,000
Total (DIP and DIK)	\$260,000
Cost per student	\$774
Annualized Cost per Student (full time equivalent)	\$2,063
Memo Item: Annual recurrent unit cost	
Primary education	\$80
Secondary education	\$150
Tertiary (large public university)	\$800
*The average duration of a training program is assumed to be 4.5 months.	
Source: BLK Yogyakarta; World Bank staff estimates; and para 3.27.	

enrolled 60,000 to 80,000 trainees (Table 3.1). Adding an estimated recurrent budget allocation (DIK) of Rp 14 billion⁹, the "unit cost" would be equal to between Rp 425,000 and Rp 900,000. This figure, if annualized (the average course duration is 4.5 months) brings the yearly unit cost to about Rp 1.1 to Rp 2.4 million (\$566-1200). Other estimates of the annual unit cost per full-time BLK/KLK trainee supported by public funds have been more than US\$ 1,200.¹⁰ These high costs derive in part from over-staffing and underutilization of facilities. Public vocational centers have a ratio of trainee per instructor of 3.3 compared to a ratio between ten to fifteen in private centers.¹¹

3.28 More detailed cost and enrollment data for one of the larger centers, BLK Yogyakarta, are presented below (Table 3.2). The BLK has a capacity to train 1,500 job-seekers annually but does so for only 336. The annualized cost per trainee comes to nearly Rp 5 million (\$2,326). These high unit costs result in a disproportionate budgetary allocation

**Box 3.1: How Much Would It Cost to Train Workers in Manufacturing?
A Comparison with the BLK/KLK Budget**

Though at a more advanced development stage than Indonesia, the training record of Asian NICs provide a basis for comparison of how much training "should" take place and at what cost in Indonesia.

In Taiwan the Vocational Training Fund Statute 1972 (subsequently abandoned) called for 1.5 percent training levy on firms employing more than 40 workers and at its short-lived peak trained annually 8 percent of the labor force in such firms.

In Korea the Basic Law for Vocational Training 1976 (subsequently amended) required firms employing 150 or more workers to train annually 10 percent of the labor force or face fines calculated at three-quarters of the average training costs (this corresponds to a maximum fine for failing to provide training of 0.7 percent of the payroll—or an expected training expenditure of 1 percent).

In Singapore the percentage of workers trained through the "overfunding" training grants of the Skills Development Fund (1979) at best trained 7 percent of the labor force.

The experiences of NICs suggests that training expenditures might come to around 1 percent of the payroll and reach 10 percent of the work force, both new recruits and existing staff. One percent of the payroll of registered manufacturing firms in Indonesia is approximately Rp 88 billion (\$44 million) and, if spent on training, could benefit 350,000 workers (10 percent of the 3.5 million workers in large and medium size establishment; 1992 figures). Whether this will be adequate to solve the skills needs is not known, but this should be enough to match the training expenditures of the NICs.

The development budget alone (DIP) for the 153 BLK/KLK in 1992/93 was Rp 20 billion (US\$10 million). Assuming that the compensation of 3,200 BLK/KLK instructors was no more than the average compensation in manufacturing (Rp 222,000/month), their salary bill comes to nearly Rp 8.6 billion (US\$4.3 million). Assuming an equal number of support staff but at half the previous wage, total salary costs come to nearly Rp 13 billion (US\$6.5 million). On these estimates the total costs for offering pre-employment training to only 50,000 and at basic level only come to Rp 33 billion (US\$16.5 million). However, using alternative salary estimates (Table 3.3) brings the total cost to Rp 40 billion (US\$20 million). Finally, using the development and recurrent estimates reported in Table 3.2 suggests an expenditure of nearly Rp 77 billion. Clearly, pre-employment training is cost-inefficient.

Source: Manufacturing Data from BLI Survei Industri; BLK data from: Center for Vocational Training, MOM; country comparisons from Pang and Salome (1986); Dougherty and Tan (1991); alternative BLK cost estimates from World Bank (1991) and Frey et al. (1992).

for providing training to only a few. A comparison between the funds allocated to the BLKs/KLKs and what might be adequate funding for training the workers in the manufacturing sector is provided in Box 3.1. The annual training expenditure on 50,000 job-seekers in the BLKs/KLKs could be sufficient to satisfy the training needs of 3.5 million workers employed in large and medium sized manufacturing firms.

FOREIGN FUNDING

3.29 Foreign assistance has been and continues to be instrumental in developing and assisting the BLKs/KLKs. In addition to supporting building construction and procurement of equipment, foreign grants and loans have funded staff development and upgrading. The three instructor training facilities in the country have been financed by grants from donors.

Donor support has also been instrumental for extensive overseas training of instructors. Four projects supported from Germany, Korea, Denmark and Italy have trained 575 instructors since the late 1980s, and the World Bank has also funded similar activities. The Ministry of Manpower is currently replacing training equipment through assistance from Austria, Australia, Denmark, Germany, Italy, Japan, and Korea.

3.30 The dependence on project funds has been as much of an asset as a long term liability. Foreign funds helped develop a system of public vocational training which is now too large to be sustained from local funds and hence requires continuous interjections of foreign monies. In addition, the stop-go nature of foreign funding implies that long-term planning is difficult to implement, and the operations of the public vocational centers become determined by narrow short-run considerations.

THIRD PARTY FUNDING

3.31 Initially, the BLKs/KLKs were fully subsidized from government funds. After the financial crunch of the mid-1980s and the depletion of project funds, legislation was introduced that allows cost-recovery for non-government sponsored training. This resulted in third party arrangements such as individualized training programs to firms (private and public), or leasing of facilities for training, teaching and related activities. The proceeds are retained locally except for 5 percent that is forwarded to the MOM in Jakarta. The locally retained revenue is intended to finance operating costs but is also used to boost staff salaries ("insentif"). Capital costs remain the responsibility of the central budget (DIP).

3.32 In 1992/93 there was one third party funded trainee for every three government sponsored trainees. Only the larger BLKs, however, have the resources to provide third party training. Their location in urban areas also provides easier access to industry and a market of students who are in a better position to finance their training. Most of the bigger BLKs

Table 3.3: Funding at BLK Yogyakarta, 1993/94

Government Funding	
Salaries (in DIK)	\$129,000
Salaries (in DIP)	\$15,000
Total Salaries (DIP and DIK)	\$144,000
Average Annual Salary (42 instructors and 50 support staff)	\$1,565
Third Party Funding	
No. of trainees	827
Fee per minimum training packet (160 hours)	\$25
Revenue (one packet/trainee; excluding company funding)	\$20,675
Additional annual income per instructor (\$20,675/42)	\$492
<i>Source.</i> BLK Yogyakarta, World Bank staff estimates.	

have taken advantage of this opportunity and in some BLKs privately funded trainees now outnumber the government sponsored trainees. At BLK Unjung Pandang, 1060 trainees were self paid last year compared to 820 trainees funded by the Government.¹² At BLK Yogya the ratio is higher: 827 were self paid trainees compared to 336 government sponsored.

3.33 The Ministry of Manpower has already considered that in the future trainees would be charged fees but this is to be implemented gradually. However, some trainees already pay fees that are much higher than the subsidy paid to the centers for government paid trainees. For example, in BLK Palenmbang the government subsidy is Rp 400/hour while PUSARI, a company, pays 600/hour. Self-paying trainees are required to pay Rp 150,000 for 120 hours of instruction or Rp 1,250/hour.¹³

3.34 Despite the fact that relatively few BLKs benefit from third party contracts, revenue from this kind of activity was officially reported to be about ten percent of the total development allocation to them in 1992/93. This revenue was Rp 2-billion (\$1 million) and, if spread equally among the 3,200 instructors, would amount to an average increase in annual earnings of Rp 650,000 (\$323) equivalent to more than two months' pay. Given that not all instructors participate in the third party

training arrangements, the average increase must have been higher for those who did. If only the 1,300 instructors in Type A BLK benefited from third-party funding, then the annual increase in their salaries should be approximately Rp 1.5 million (\$770). In fact, in Yogyakarta, third party funding averaged closer to that figure (nearly \$500 per instructor; Table 3.3).

EVALUATION OF THIRD PARTY FUNDING AND COST RECOVERY

3.35 The ability of the BLKs to contract directly with employers and students reflects prima facie desirable market linkages. However, this does not constitute a conventional way of cost-recovery whereby the Government recovers costs and uses them to finance activities determined by public (rather than private) interest. The distorted effects of civil servants pursuing private objectives through their function as state employees is shown below, ironically in the case of an elite institution in the area of skills development: the Swiss Polytechnic in Bandung.

3.36 The Politeknik Manufacture in Bandung (Swiss Polytechnic) is a high quality institution offering programs in mechanical subjects. It attracts candidates from all over Indonesia with only 31 percent of students coming from Bandung and as many as 22 percent from the Outer Islands. Its annual intake is 100 students chosen from 4,000 applicants. It employs 102 professional staff (of whom 18 are currently on overseas study). The Polytechnic provides additional high quality training to industry (at Rp 300,000 or \$150 for a 40-hour course) and produces and sells custom-made equipment to firms.

3.37 These additional activities boost staff remuneration by nearly six times. In 1993, the Government paid wages totaled Rp 178 million which, if divided by the 84 instructors, in campus amount to a monthly payment of more than Rp 200,000. However, the actual salaries paid were approximately Rp 1.1 billion which averages to more than Rp 1 million per month per instructor. In addition,

the annual budget for staff development comes to approximately Rp 50 million or nearly Rp 600,000 per instructor.

3.38 By all accounts, the Polytechnic is a success story. It produces highly quality graduates and has more than 300 requests for the fewer than 100 graduates in a year. It generates its own income from the private sector. From an educational perspective it receives top ratings. However, from an economic perspective, though market driven, the Polytechnic may not be supplying as many skills as a privately owned firm would have supplied and does not necessarily charge prices that reflect capital costs and competitive wages. The key issue here is that the Polytechnic is as free from the responsibility to undertake capital investments as it is free to pursue its staff's (rather than the public) interest.

3.39 More precisely, the ownership and incentive structure of the Polytechnic fits neither that of the private firm nor of a public firm. A private firm will adjust its capital and labor to maximize profits. In doing so in a price-taking environment, it will produce as much as it is economically efficient and will sell it at competitive prices. A public firm will set prices and quantity of services according to social costs and social benefits and will not use its dominant position for paying higher than competitive salaries. Both private and public companies will offer by incentive or mandate the right amount of services at the right price.

3.40 However, the Polytechnic, as a Government institution, is to a large extent released from making allocations for investment. Its foundation and to a large extent its expansion has been enabled by funds from Switzerland, the World Bank and the Asian Development Bank.¹⁴ This and the ability to contract directly with the private sector enables its staff to appropriate in the form of additional salaries, staff development and various allowances nearly half of the total revenue. In short, the

The Swiss Polytechnic passes all tests of success, and its instructors enjoy high salaries and have significant opportunities for staff development.

Polytechnic does not necessarily maximize private profits or social welfare. The practical implication of an institution operating under vague public/private incentives is that, while an increase in productivity or an increase in product demand would normally lead to an expansion of production, such an institution has the incentives to reduce production and charge higher prices (Box 3.2)

3.41 Thus, though the Polytechnic passes prima facie all tests of success (quality, cost-

recovery, responsiveness to the private sector, buoyant profits) and its contribution to the quantity of skills creation should not be underrated, its blurred public-private nature may lead to lower supply of skills and at higher prices than in an otherwise comparable market environment. Under third party funding the behavior of public training institutions may be market-driven, but is not necessarily competitive. High economic rents are possible because these institutions benefit internally from a 100 percent capital subsidy and

Box 3.2: Comparison Between a Competitive Firm and a Firm Owned by the Government but Run by Its Employees

A competitive firm produces at the that point where its profits ($PQ - wL - rK$) are maximized. P is the **exogenous** price of the firm's product sold in competitive markets, Q is the amount of product sold, w is the **exogenous** wage rate, L is the number of workers, r is the cost (rental price) of capital, and K is capital.

If worker productivity increases or if the demand for the firm's product increases, then the firm would hire more workers and will produce more. This behavior ensures efficient outcomes in the sense that production (and, by extension, GDP) is maximized, costs are minimized, prices are lowest. When the society demands more of the firm's product, the firm supplies more.

In a government owned firm where workers are paid a fixed wage but can engage in additional income generating activities things can work quite differently. Workers in this case attempt to maximize their own income through third party contracts and the firm no longer maximizes profits but **additional** income for its original workers (PQ/L). Neither capital nor the fixed wage affect the outcome being exogenously fixed (by the Government).

Under these conditions the government firm will produce less than the competitive firm. Furthermore, when productivity increases or if the demand for the firm's product increases, the firm will further restrict its output thus ensuring higher earnings per employee.

This "perverse supply response" can accentuate if the employees of the government owned firm have also some control on the operations of competitive firms. In the case of the skills market, this is relevant as licensing and certification is also in the hands of the providers of public training.

This simple exposition shows that allowing public vocational center instructors to engage in third party contracts can result in too little training being offered. As public vocational centers operate in the same market as private providers of skills, they may limit the operations of private training centers by crowding them out. At the end, it is not clear whether third party contracts for the public sector increase the supply of skills, at least at a given cost.

Public training institutions should become either truly public to offer training as a public good or truly private to offer more skills at a lower price. In either case a transparent system of accrediting private training institutions and certifying skills should be established.

Source: Estrin and Wadhwanu (1990), Tzannatos (1992). See Annex 3.1 for a diagrammatic exposition of this comparison.

externally from rules that apply to private training centers (see Chapter 5).

3.42 The Ministry of Manpower has the conflicting functions of being a provider of training, as well as, a regulator for the private training sector. This implies that, when employers or individuals require training, the criteria for who should provide it may not be transparent. BLK instructors offering driving lessons, an area well-catered by the private sector, is a case in point. It is possible that the licensing of private driving instructors is restricted to allow public instructors to have a share in the market. It is also possible that public instructors can undercut private instructors simply because the former are not concerned with overheads that come from the Government development budget (DIP). In both cases, the resultant supply of skill training would be sub-optimal. In both cases the social costs of providing driving skills would be higher than in a competitive market environment.

3.43 However, MOM recognizes that private training institutions are partners in the area of human resources development and should be developed and assisted. In reforming BLKs/KLKs, the Ministry has classified their advantages on the basis of what the private sector offers or has no interest to offer. Some overlapping between public and private centers is unavoidable in the short-run, if only for the reason of utilizing existing instructors until BLKs/KLKs are reformed. In the longer-run, to the extent that BLKs offer similar skills to those available from the private sector on the basis that some trainees cannot afford to pay the fees charged by the private sector, the reform can take into account whether direct provision of skills by the BLKs is the most efficient option compared, for example, with selective subsidies to needy students.

E. RECENT REFORMS

3.44 The Ministry of Manpower recently announced reforms in the area of training. The first set of reforms aim to diversify the role of the vocational

training centers to accommodate local conditions, change organizational structures, upgrade training from low- to middle-level skills, enable the centers to place graduates, establish industry links, and trace the fate of trainees after graduation.¹⁵ The second set of reforms include the establishment of an apprenticeship scheme.

The success of the apprenticeship scheme would depend on finding companies with training needs that are also prepared to fund training.

3.45 The practical implications of the first set of reforms have not been fully worked out by the Ministry and therefore formal analysis is premature at this stage.

Several points can be made, however, regarding student placement, that is, the planned switch of this function from the Kandep office to the vocational training centers. This is clearly a change in the right direction since there is no apparent benefit to students from Kandep placement compared to placement services offered directly by the centers. In fact, the current arrangements isolate the training instructors from the labor market. Furthermore, if the placement reforms are properly implemented, there should be no budgetary implications since existing resources devoted to placement activities will be simply transferred from one organization to the other. Some BLKs (BLK Surabaya and BLK Medan) are already undertaking this role creating positive effects on student placement. In the future, the BLKs can also extend their operations to student selection, as well as, monitoring of their trainee's labor market outcomes after graduation.

THE APPRENTICESHIP (MAGANG) SCHEME

3.46 By far the most important planned reform for the public vocational training centers is the recently introduced apprenticeship scheme. The scheme is envisioned to be "company based training using the BLKs/KLKs to support the companies in their training efforts". The scheme has been initiated between the Ministries of Manpower, Education and Culture, Industry,

BAPPENAS and Chambers of Commerce (KADIN).¹⁶ It forms the "other leg" of the Dual System scheme to be implemented by the Ministry of Education and Culture which envisions linking vocational schools with companies (see Chapter 4).¹⁷

3.47 The scheme is expected to work as follows: The trainees would be selected by the employers with assistance from MOM. Employers and trainee would enter into an apprentice contract but trainees will not be regular employees whom the employer would be obliged to keep on after training is complete. The apprenticeship period will last three years in general but trainees can exit with either a certificate of basic skills from the company after the first year; or a National Skills Test and Certificate Grade II after the second year; or a National Skills Test and Certificate Grade III after the third year. With another two years on the job, the worker can take an additional six to twelve months of training and exams to become a Grade I Master. Each year of training would be split between theoretical training in the BLK, training in the company training center, and rotation among different production line jobs at the company. In the first year, five months would be spent at the BLK, four months in the second year and three months in the third year. Eleven BLKs have initially been chosen and the scheme is expected to expand to include 75 BLKs within five years (Table 3.4). Initial occupations selected for the scheme are: metal trades, automotive, electrical, welding and food processing.

3.48 The scheme calls for companies to devote one production supervisor for training. The Ministry of Manpower would be responsible for training this person in instructional techniques, and for assisting in setting up an in-plant training center. The scheme provides for the creation of a special department (Training Advisory Services) at the BLKs to assist and

Table 3.4: Planned Implementation of the Apprentice System in the Public Vocational Training Centers (1994/99)

Year	BLKs	Occupations	Apprentices
I	11	6	500
II	30	9	2,000
III	50	12	4,000
IV	65	13	5,500
V	75	14	8,000

Sources: Depnaker; GTZ

guide companies as required. Understanding that small and medium size companies may not be able to devote a full time supervisor for training and establish a center, the scheme suggests different models where associations of small employers would establish a common training center, or would utilize the BLKs for their training needs.

3.49 The costs of the scheme are expected to be shared between the Government and employers. The breakdown is

as follows even though the extent of sharing costs is not known at this stage: the company would finance honoraria and transport costs for instructors, training materials and facilities; the Government would finance BLK facilities, office costs, training software, and instructor and administrative staff salaries. The costs of instructor housing, training planning and skill certification and program monitoring would be shared between the two parties. Funding is expected to come from the central and regional Government development budgets, the Training Development Contribution of Foreign Workers, training fees from trainees, levy-grant schemes, participating companies and donors.

3.50 The implementation of the scheme is supported by technical assistance from the German GTZ (Deutsche Gesellschaft Fur Technische Zusammenarbeit).¹⁸ A three year project has begun (1994-1997) which would lay the foundation for the development of the scheme over a period of fifteen years. GTZ has established a "Training Advisory Service Unit" within the Ministry of Manpower and is placing three full-time staff in the Ministry. It is contributing DM 9.5 million for experts, equipment, counterpart training programs, seminars, conferences and study tours. The project will also establish an instructor training center in Bandung.

3.51 The scheme stipulates the creation of a coordinating "National Council On VET" located in Bappenas. This new agency will have independent staff and be responsible for setting skill standards

and developing certification tests. The scheme provides for graduates from various types of institutions to take the same "National Standard Skill Test". To effect this there are plans for the creation of a National Board for Skills Standards and Certification.

ISSUES OF THE APPRENTICESHIP SCHEME

3.52 The apprenticeship scheme represents a move of the BLKs towards on-the-job training while preserving their pre-employment training. The scheme is an add-on to the existing structure of the BLKs that may help them financially. The 8,000 apprentices under the scheme with an average annual duration of training at the BLKs of 4 months come to 20 percent of planned (50,000) government sponsored trainees. Given that the quality of training will be higher than that currently offered for pre-employment training, the increase in revenue can be higher than 20 percent.

3.53 There are no precise costs of the introduction of the apprenticeship scheme. However, Repelita VI states that "in support of the training implementation in companies, there should be a collection of some fee for the training activities from, by and for the company . . . To match the training outcome with the requirements of employers, it is necessary to develop training for 19,500 instructors, planners, curriculum designers and training managers." Overhead costs seem, therefore, to be significant (compared to 8,000 apprentices). Though such costs can be justified, if they lay the foundation for future benefits, information about their magnitude and the willingness of employers to finance and workers to participate (through apprentice wages) in such training is lacking at this stage. It is not known whether the apprenticeship scheme will take place with the cooperation of the private sector as such or with government enterprises. In Indonesia the definition of the private sector includes all companies selling something, services or goods—in effect, it excludes only central administration.

Box 3.3: The Government Can Play a Significant Role in Training Though Not Necessarily in the Form of Direct Provision

Chile introduced reforms in the early 1980s to increase the responsiveness of publicly provided training to employer and student demand. The reforms established a system that relies on tax credits, voluntary participation of private employers in training, competition in the market for training, and training scholarships for targeted groups.

A special agency (the National Service for Training and Employment, a division of the Ministry of Labor) auctions training courses on a competitive basis among training institutions, both public and private. Training institutions are induced to offer training in areas where demand is high because reimbursement from public funds is conditional on the rate of successful placements after training is completed.

Training expenditure of firms on in-house (employer-provided) training or externally supplied training (by a public or a private institution) is fully eligible for tax credits up to 1 percent of the firm's payroll.

Training vouchers are distributed to targeted groups — the young, unemployed workers, rural women — so they can have access to training services.

The Government can play a significant role in training systems but this does not necessarily have to be in the form of direct provision. The finance of training, and the conditions under which it takes place, is in itself an important policy intervention: in the case of Chile the burden of designing successful training programs was shifted to where it belongs — the training institutions themselves.

Source: World Bank 1995.

3.54 The success of the apprenticeship model will therefore depend on finding companies with a real training need that are also prepared to fund training. BLKs should also become able to offer better quality training and create successful programs on which they can build. However, the current reforms have not taken fully into account whether employers are interested in government subsidized training. Most of the companies that are interested in training are often interested only in management training which is well provided by the private sector. Often it is middle-level management skills that are of concern to larger and more organized private firms, and about 96 percent of the training provided by American companies in Indonesia is designed to enhance technical and managerial skills.¹⁹

3.55 BLK Medan has already begun to give six rather than three month training courses with the view to including one month of training in a company. The in-company training has not yet been fully implemented. It is not clear how many company places can be found since this is constrained by the willingness of employers to participate. According to some estimates, the best the BLK can do at present is to place no more than half of its trainees in a company. PT MULTI MINERAL, a public company in Medan, is training BLK students with no or minimal compensation from the Government. Private companies may not be prepared to incur such costs.

3.56 Against the well-intended but supply-driven effort for apprenticeships, there are clear signals that that short courses are very popular among job seekers who may be unwilling to be paid trainee wages. Private polytechnics (such as LPB) are already offering D1 courses to secondary school graduates, admittedly in non-industrial crafts, and have begun to be involved in the market for training job seekers. The

Politeknik USU Medan has, for the past year, been offering courses at the D1 (one-year post-secondary certificate) level for job seekers, privately financed. At present there are 150 students taking courses in electronics and a further 500 in commerce. The electrician course is designed in association with the electricity company (PLN) that collaborated with the polytechnic rather than with the local BLK. Upon completion the student is expected to work as a contractor. Finally, in Surabaya, the local polytechnic (associated with the Institut Teknologi Surabaya (ITS)) is now offering training for job seekers to the D1 level, in addition to its regular three-year post-secondary degree program (D3). This is an off-budget program supported completely by student fees. So far 140 job seekers have been trained and this is the first year of the program.

3.57 Furthermore, the implementation of the apprenticeship model will need to reorganize the public, and to a degree, the private training system to support it. The design of training should enhance competition in the supply of skills rather than attempt to secure private funding to for publicly provided training. Box 3.3 outlines how a combination of scholarships, vouchers and tax incentives can help finance training and reduce the need for public provision. Such schemes can be examined in cooperation with employers and associations of private training institutions and be introduced gradually as labor market conditions and new technologies require them.

F. CONCLUSIONS AND RECOMMENDATIONS

3.58 The public provision of training has expanded beyond the level that is financially sustainable from domestic public resources. Instructional methods, equipment and programs do not reflect industry needs or standards, and the training centers are unable to alter course offerings or adjust programs to changing local labor market conditions. Attempts to improve the quality of training are mostly confined to staff upgrading that may

Public vocational centers can gradually withdraw from the direct provision of training in areas served by the private sector, but their role in student selection and placement should increase.

reflect civil service considerations than training needs. The quality of training suffers because machines are outdated or inappropriate and can no longer be properly maintained. The analysis on costs suggests that efficiency is low. Labor market outcomes of graduates of public training centers are not better than non-graduates.

3.59 The most compelling justification for Government intervention in the provision of skills is the absence of, or a weak private training sector. In this case, Government has an important role to play in ensuring an adequate amount and quality of training. This is not, however, the case in Indonesia where the private training sector is large. Increasingly, the BLKs are moving into areas well catered by the private sector. These areas range from business, commercial and computers training to driving lessons. These attempts to reduce underutilization through third party contracts and funding may solve one problem but create another: in order to raise their own incomes through third party contracts, public instructors may restrict the supply of private training through crowding out and inadvertently imposing higher costs on industry. The areas in which the BLKs operate for profit are, naturally, the ones where demand exists but not necessarily a market failure.

3.60 One recommendation of this chapter is for public training centers to gradually withdraw from

the direct provision of training in areas that are already served by the private sector (such as training for the services sector). This will ensure fiscal savings and will increase the supply of private training. The budgetary savings can then be used for selective subsidies to needy students or contracting out training to private training centers.

3.61 Another recommendation is to gradually phase out the cost "recovery" measures as currently practiced because it results in distorted incentives. Staff salaries, a prime reason of concern, could be increased by passing on the financial and managerial responsibilities of BLKs to the private sector and, in some cases, by upgrading larger training centers located in prime industrial areas to offer middle-level and especially advanced skills. Alternatively, a system of vouchers/subsidies can be examined to establish whether they can be used to increase competition in the supply of training and provide alternative revenue to public vocational centers.

3.62 Finally, the responsibility for trainee selection and student placement should be given to the BLKs. This will improve student selection and will increase the links between the centers and industry.

ENDNOTES

¹ Other Government departments such as the Ministry of Industry and the Ministry of Agriculture operate vocational training centers, but those of the MOM constitute the largest public effort and the Ministry has the main responsibility for training in vocational skills for employees in the private sector.

² "National Apprenticeship Pattern and its Development Plan," MOM, (1994).

³ Keeping the number of Government-sponsored trainees to 50,000 reflects the current policy to increase training of long duration (one to three years) and reduce the number of short programs that typically last between two and four months.

⁴ Clark (1985).

⁵ Patrinos and Clark (1995).

⁶ Ministry of Manpower (1993).

⁷ JIKA (1994).

⁸ Official Government estimates of BLK costs come to around \$150-\$200 per trainee. But these costs include only instructors' incentives and materials and, even under this low figure, the annual unit cost comes to \$400-\$530 as the duration of training of a typical course during the period covered in the report is only around four-five months.

⁹ Assuming the 3,200 instructors receive a monthly salary of Rp 300,000 per month, and the 1,600 non-instructor, support staff receive Rp 150,000 per month. There were 80,000 trainees in 1992/93.

¹⁰ Estimates in this range are reported in Frey et al. (1992).

¹¹ World Bank (1991).

¹² JIKA (1994).

¹³ Ibid., p. 3-44.

¹⁴ The Polytechnic in 1992 allocated about Rp 400 million for investment in machinery and equipment. However, it also received an additional Rp 230 million for operations excluding salaries.

¹⁵ Minutes of Understanding (MOU) between BAPPENAS, the Ministry of Education

and Culture, Ministry of Manpower, Ministry of Industry, and GTZ (dated March 18, 1994). Though broadly defined, this document commits the aforementioned members to cooperate for establishing the apprentice program also in partnership with "other Ministries, the Chamber of Commerce, NGOs, unions, state and private industries and professional associations".

¹⁶ Several changes have been initiated since REPELITA VI. Last year the following steps were taken (a) increased training for BLK instructors; (b) increase in training in certain areas from 3-6 months to 6-9 months; (c) relocation of equipment and facilities from certain BLKs to others according to regional development priorities and local production conditions; (d) rehabilitation of some training workshops; (e) development of particular types of BLKs according to regional potential (industrial BLKs in industrial areas, and trade-type training in areas with small and medium scale companies; (f) development and improvement of training curriculum according to labor needs; and (g) improved coordination among agencies that have authority to develop training.

¹⁷ In the MOU on apprenticeship and dual schemes there is no explicit mentioning of the private training centers under MOM or private training schools under MOEC while Bappenas is expected to take care that the donor funds (from the World Bank Skills Development Project) are used for the development of the system.

¹⁸ GTZ's rationale for participation in the scheme can be summarized as follows "A sewing factory with 5,000 low skilled operators still needs 25 to 50 skilled repair persons to keep the equipment operating. It is this repair persons to keep the equipment operating, and not the operators, who will be the target of the GTZ training. GTZ is aware (from own observations and well as from the Manufacturing Survey 1992) that 92 percent of firms report no problem finding skilled employees. However, the remaining 8 percent still represents a potentially huge number in Indonesia." To complete this analysis, a calculation of costs and an assessment of the labor market situation and the willingness of firms and workers to participate would be required.

¹⁹ AMCHAM (1992).

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4.1 One indication of a market failure in the education system is when demand does not create its own supply. In this case, the labor market requires types of workers that the education system does not provide. Concern with this type of market failure in Indonesia has led to “link and match” policies that aim to integrate the education system with the labor market, increase the employability of school graduates and meet the needs of employers.

4.2 This market failure is ironically obvious only in the market for less educated and unskilled labor. The retirement and withdrawal of illiterate workers from the labor force has not been met by equivalent replacements: the supply response has been younger and better educated and skilled workers. Demand for unskilled labor has not created its own supply and the effects of this mismatch is shown in the

movement of wage differentials over time. In 1977 senior vocational school graduates were paid three times more than workers with less than primary education and those with university education ten times as much. By 1990 vocational graduates were paid only twice the wage rates of workers with less than primary education and university graduates only three-and-a-half times.

4.3 These findings do not suggest that the broad based education policies of the past should be relaxed. Education should continue to expand in Indonesia. However, every year three million students leave school before they complete the basic education cycle (nine years). This large outflow will keep the average educational attainment of the labor force low and constrain productivity increases for decades ahead. The issue is therefore to expand education but in a way that meets the requirements of changing production conditions.

OVERVIEW

The schools' division into general and vocational tracks is largely unnoticed in the labor market. Since vocational education is more expensive to offer, its social returns must be lower than that of general education.

4.4 The next sections examine quantitative and qualitative characteristics of vocational and technical (VTE) education, such as enrollments, and growth (Section A) and curricula (Section B). The major findings, are that, first, the targets for fast growth in VTE in REPELITA V did not materialize despite Government support. This can be attributed to low supply due to higher costs compared to general education. Second, there is de facto little diversification in VTE curricula. This is an indication that specialized skills are not much sought after by students, are more expensive to offer and in little demand by employers.

4.5 Section B shows that labor market outcomes of students from different education streams are practically indistinguishable: the schools' division into general and vocational tracks is largely unnoticed in the labor market. Since

VTE is more expensive to offer, its social returns must be lower than those of general education. It is also argued that an expansion of VTE may result in over-supply of its graduates and have inequitable effects. The economic rationale for an expansion of VTE is not obvious.

4.6 The proposed dual system (System Ganda) is reviewed in Section C. A positive aspect of the system is its call for the establishment of national skills standards and occupational certification — this is an important aspect of the education system and the labor market. However, the expected expansion of VTE may fall short of its targets on both ends: students may not be willing to specialize early and employers may not be keen to participate in apprenticeship schemes. All this may be immaterial, though, as there are no cost estimates for the proposed scheme. The study recommends

that costs are evaluated, and the Government and donors explore alternative scenarios in the context of international experience (Section D).

A. CHARACTERISTICS OF VOCATIONAL AND TECHNICAL EDUCATION

ENROLLMENT AND OUTPUT

4.7 Human resources policies in Indonesia have been broad based.

The Government focused on the expansion of primary education which has now become nearly universal (Table 4.1). The expansion of junior secondary education has not increased as much and serves significantly as an avenue to senior secondary education rather than to immediate employment. Senior secondary education and university education have mushroomed due to increasing social demand for education, and the labor market continues to absorb more educated graduates. Government policies, which allow an unrestricted expansion in private education, have contributed to a vigorous supply response to the rising social demand for education.

4.8 In 1992/93, there were approximately 14,000 senior secondary schools enrolling 3.8 million students. More than 88 percent of these students are enrolled in schools under the jurisdiction of the Ministry of Education and Culture (MOEC). Other Ministries which operate senior secondary schools include Religious Affairs (2,700 schools with 400,000 students); Health (207 schools with 30,000 students); Agriculture (122 schools with 27,000 students); Industry (nine schools with 3,000 students); and others (24 schools with 4,400 students). This chapter is mainly concerned with MOEC schools which represent the largest group.

4.9 Senior secondary education takes place in a highly diverse mix of schools. There are broadly fifteen types of schools. General educa-

Table 4.1: Net Enrollment Rates (%) by Level of Education (1968-1994) and Output (1992/93)

	1968/69	1993/94	Graduates ('000)
Primary (7-12)	41	94	3,700
Junior Secondary (13-15)	17	40	1,900
Senior Secondary (16-18)	9	25	1,250
University	2	10 ^{a/}	220
^{a/} gross			
Source: BAPPENAS Rep VI			

tion schools (SMA) enroll nearly two-thirds of senior secondary students. The rest are in fourteen different types of vocational, technical and specialized schools (such as agricultural, technical, commercial). Close to 90 percent of the non-general schools are commercial schools (SMEA) or technical schools (STM). In 1993/94, there were 1,269 STM schools of which 83% were private. Of the 2,362 SMEA schools, 80% were private. SMEAs account for 52 percent of total VTE enrollments and STMs account for nearly 40 percent. The remaining schools in the vocational/technical (VTE) group consist mainly of home economics (4 percent of total enrollment) and agricultural studies (2 percent). Other fields (with minuscule enrollment) include engineering, music, fine arts, crafts and traditional dance (with 4 years duration) and graphics, aviation, ship building and home technology.

4.10 The annual supply from vocational and technical senior secondary schools is approximately 370,000 "skilled" graduates. To complete the picture of the supply of skills, the annual output of technicians from polytechnics is 4,300, of engineers from universities 12,600 (S0 and S1) and 25,000 other graduates (S0 and S1) of science and technology fields. Overall, the output of tertiary institutions was estimated to be approximately 250,000 in 1994/95. Of them, 60,000 were qualified at diploma level and the rest at degree level.

4.11 Repelita VI (1993/4-1998/9) foresees a greater increase in enrollments and output of VTE schools than general schools (Table 4.2). The annual

rate of increase in the VTE stream is expected to be nearly 50 percent higher than that of the general stream (7.4 percent and 5.1 percent respectively). By the end of the Plan the annual output of general and VTE senior secondary schools will be respectively 848,000 and 530,000 graduates. This represents a ratio of general to VTE graduates of 1.6 compared to 2.0 at the end of Repelita V.

CURRICULA OF VTE

4.12 Senior vocational and technical education covers six subjects: agriculture and forestry, business and office administration, culture, health, home economics and engineering. The curriculum consists of 30 percent general subjects (Pancasila, History, National Heroes, Bahasa Indonesia, Health and Sports), 30 percent basic vocational/technical subjects (such as Mathematics and English), and 40 percent optional vocational/technical subjects. Optional subjects are, in theory, chosen in the second and third years of the senior secondary education cycle. In practice, the number of courses available is often equal to the minimum required for completing a cycle and there is no student choice. Schools can, in theory, adjust the curriculum to local conditions but the prevalence of this practice is unknown.

4.13 Vocational education covers mainly commercial fields (administration, accounting, marketing, management, investment and loan management and so on). Technical education includes drawing, surveying and mapping, building construction, water works, electrical installation, electricity usage, machining, communication electronics, automotive mechanics, general mechanics and ship maintenance. There are in theory more than 160 study programs, but in practice a recognized curriculum is available for fewer than 100 programs of which only 75 are actually offered in

Table 4.2: Annual Enrollment, Output and Targets for Senior Secondary Education ('000)

	End Repelita V (1993/94) (Actual) (1)	End Repelita VI (1998/99 Target) (2)	Planned Growth (2) - (1) (3)
Enrollment			
General - public	1,313	1,681	368
- private	1,027	1,321	294
Voc'l/Technical - public	476	680	204
- private	890	1,273	383
Religious (public and private)	403	498	95
Total	4,109	5,453	1,344
Annual Output (public and private)			
General	698	848	140
Vocational	365	531	166
Religious	121	154	33
Total	1,184	1,533	349

Source: JIKA (1994), p. 3-11.

schools. On average, schools offer only three to four programs though, on an exceptional basis, some may offer as many as ten. The difference between what can be offered at schools and what is actually provided reflects limited implementation capacity of (public) schools and unwillingness of (private) schools to diversify more than what is actually needed in the local labor markets in which they operate.

B. LABOR MARKET OUTCOMES

4.14 Wage differentials between general and VTE graduates have narrowed over time. Urban labor markets no longer differentiate between these two groups. In fact, male VTE graduates do worse than general graduates. Women VTE graduates continue to enjoy a small but declining premium (Table 4.3). Overall, econometric

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results indicate that the rates of return for vocational education declined between 1982 and 1989 and are about two-thirds that of general education.¹

4.15 Perhaps the single most important difference in labor market outcomes between VTE and general school graduates is that 50 percent of men and nearly 70 percent of women from VTE are employed in the public sector (an overall rate of 56 percent). In contrast, only one-third of general school graduates are employed in the public sector with no significant differences between women and men. Graduates from general schools have a more even distribution across sectors than VTE graduates, an indication that they are more employable across the economy. A 1991 study noted that twenty-two percent of civil servants had VTE education in 1989 compared to only five percent in manufacturing. The distribution of both sexes across sectors is shown in Table 4.4. These results are counter intuitive given that one objective of VTE is to prepare graduates for either self-employment or work in the manufacturing sector.

4.16 The above results do not differentiate between technical education graduates (STMs) and vocational education graduates (SMEAs) since the data in the national labor force survey (SAKERNAS) do not distinguish between the two. Studies which have looked at the two types of VTE streams, however, reinforce the above findings. The most recent is the "Quality and Efficiency of Secondary Education" study conducted by MOEC/USAID (QESE Study, MOEC/USAID, 1992). The study traced the post-secondary activities of 8,200 graduates from ninety public and private (34 and 56, respectively) general, technical and commercial senior secondary schools in East Java,

Sector	General	VTE
Agriculture	16	11
Manufacturing	15	11
Trades	23	11
Public Services	35	56
Others	11	12
All	100	100

Source: SAKERNAS; MOEC/USAID (1992)

Table 4.3: Wage Advantage of VTE Graduates: (Index Senior Secondary General = 100)

	Men		Women	
	1977	1990	1977	1990
Senior Secondary General	100	100	100	100
Senior Secondary Vocational	134	98	127	111

Source: SAKERNAS 1977, 1990

Sumatra Barat and Nusa Tenggara Timur. Information was collected three months prior to graduation (March 1990) and eight and twelve months after graduation (March and July 1991).

4.17 One year after graduation, twenty-six percent of graduates were pursuing further/higher education. Among the rest, 40 percent were employed in the formal sector. Manufacturing, however, made more use of general school graduates than of VTE graduates. Overall, more than ten percent of all graduates had joined the Government sector. The probability of doing so was twice as high for STM graduates than for graduates from other schools. Another 25 percent of all graduates were self-employed or had joined the informal sector, and thirty-one percent were unemployed.

4.18 Mean earnings for the two types of graduates were comparable but *social rates* of return for VTE graduates were lower than for general education graduates (assuming that external effects are the same for general education and VTE). This was due to the higher unit costs of VTE schools compared to general schools. Costs in technical schools (STMs) were 55 percent higher than those in general schools. The difference was smaller for commercial schools (SMEA/SMA difference of 5 percent).

4.19 The cost disadvantage of STMs becomes even greater if repetition and attrition are taken into account. The percentage of repeaters among STM students in the sample was 25 percent higher than that for SMAs, and the per-

centage of drop-outs nearly three times as large. Combining these findings, SMA students had a 94 percent probability of finishing the cycle in three years compared to 86 percent for STM students. This increases STM's costs by another 10 percent. On average, 13 percent of students from public SMAs graduated at age twenty or above. The percentage was 20 percent for public SMEAs and 34 percent for public STMs (QESE: Table 26).

4.20 The length of *job search* of the unemployed in the sample was very similar among graduates of different schools. Approximately 25 percent reported that they found a job within twelve weeks after graduation and 75 percent reported finding a job between twelve weeks and a year. The waiting period was on average ten weeks longer in Sumatra Barat and NTT compared to East Java.

4.21 Controlling for the percentage of graduates who decided not to join the labor force, there was little variation in the unemployment rates between graduates from different types of schools. Neither had the type of school much relation to the incidence of long-term unemployment: invariably around 50 percent of graduates from all schools had yet to find a job after six months. The conclusion is that the type of school and program "are of limited importance in determining whether graduates are idle or not."²

4.22 In terms of exposure to work, practically all students (99 percent) in STMs and SMEAs participated in some on-the-job training scheme before graduation. However, the average length of on-the-job-training training was only two weeks for SMEAs and three weeks for STMs. Seventy percent of such training for SMEAs was in a government offices. Twenty-two percent of STM students also underwent training in a government office and 49 percent in a large-sized industry/business (though it is not known whether this was in a private or a parastatal establishment) (QESE, Table 32). In neither case was on-the-job-training much related to the curriculum or needs of students or industry. Rather it depended on what was locally available (*ibid.*, p. 42).

Box 4.1: Lessons from Recent Expansion of Vocational Education in Indonesia

The World Bank funded the establishment of many of the MOEC vocational schools in the 1960s and 1970s but subsequently withdrew from this area. Other donors moved in and further developed the system. The Asian Development Bank in the early 1980s began supporting the expansion and renovation of public vocational secondary schools. Significant amounts of the project were dedicated to staff upgrading. In the project evaluation report (1993) it was noted that some schools were over-designed, quality of applicants had declined, and employment outcomes of graduates were, if not worse, no better than those of other graduates (ADB, 1993). The evaluation arrived at three main conclusions:

First, the project contributed to an over-supply of vocational schools as the unplanned (sic) activities of the private sector, which dramatically increased their presence in this area of education, had not been taken into account at the inception of the project;

Second, when project funds ran out, Government recurrent expenditures were unable to maintain activities and operations of the schools at the level initially expected; and

Third, the study called for an evaluation of the education situation and labor market conditions before any further expansion of the vocational sector is undertaken.

Source: "Project Performance Audit Report: Vocational Education Project in Indonesia", Asian Development Bank, April 1993

4.23 The findings of the QESE study are in agreement with recent donor experience in the expansion of VTE (Box 4.1):

"The basis for the subsector's [VTE] expansion was that economic development would create critical shortages of middle-level technically qualified manpower. However, there is little evidence to suggest that any

shortages are being alleviated by the employment of VTE graduates nor is it clear that VTE graduates are, on the whole, being adequately prepared for that type of role in the labor force" (MOEC/USAID 1992, p. 17).

4.24 The QESE study also pointed to the difference between intended and actual outcomes:

"GOI...has promoted policies targeted towards labor intensive development and industrialization. The role of senior secondary vocational/technical education in these manpower strategies is unclear... without substantial growth in the demand for labor that is educated to this level, the excess supply situation will be further exacerbated by each successive graduating cohort" (ibid., p. 18).

4.25 In terms of recommendation, while the QESE study goes in great effort to identify problems in equipment, teachers, curricula, management, motivation, under funding and the general quality of vocational/technical schools, it does not call for direct corrective policies as such but argues that there is little merit in expanding the STM group of institutions that already exists.

4.26 In conclusion, the present VTE system is not closer to the world of work than the general education system. Disproportionate emphasis on staff development through expensive in-service (often overseas) training, dependence on project money, limited sustainability and lack of continuity, and omission of the private sector from the planning process are more or less endemic characteristics of training and skills formation policies. Graduates of VTE fare equally in the labor market as graduates from general schools but with a difference: given that education expenses are much lower for general education than for VTE, the social rates of

return to general secondary education must be higher than those for VTE.

EQUITY AND VTE

4.27 One premise for intervention in VTE (as well as other areas of skills formation) is that the private sector is predominantly present in regions of high market demand, that is, where parents who can afford to pay and labor markets are thriving. Indeed, private schools are concentrated in urban and industrialized areas. There are four to five times as many private VTE schools as public ones in East Java (urban areas) but one or even less private schools for every public school in Sumatra Barat and NTT (rural areas).

4.28 The presence of public schools is not necessarily solving this "market failure", however. The QESE study cited above indicated that the greatest dominance of private over public enrollments were general secondary schools outside Java and among students of lower socio-economic strata. These are exactly the two areas (general education and for the poorer) where the public sector is expected to be more prevalent:

Students from the highest socio-economic strata are over-represented in public secondary schools. Public, rather than private, schools are the schools of choice. Graduates from public schools have greater probability of continuing their education and lower probability of being unemployed.

"Students from the highest socio-economic strata were over-represented in public relative to private STMs in all three provinces. The most expensive type of education was therefore disproportionately taken up by the more affluent." (QESE, 1992)

The study further pointed out that:

"Public rather than private schools are, almost in all cases, the schools of choice and public school enrollments reflect a disproportionate representation of higher SES students... [Parents] are usually more able to influence acceptance to the better schools, regardless of students' previous academic performance." (ibid., p. 39,40).

4.29 Some of the inequity effects of government provided education continue after graduation. Overall, those who graduated from a public senior secondary school (of all types) have a 30-50 percent greater probability of continuing to further/higher education. This implies that nearly 55 percent of low socio-economic status graduates were unemployed compared to 35 percent from high socio-economic status (ibid., Table 35). Furthermore, graduates with low socio-economic had longer job search time by about ten weeks than their counterparts with higher socio-economic status.

C. CURRENT REFORMS: THE DUAL SYSTEM (SYSTEM GANDA)

DESCRIPTION OF THE DUAL SYSTEM

4.30 A reorientation of the VTE system along the lines of a dual system (System Ganda) started in July 1994. Approximately 250 vocational and technical schools have been targeted and some 6,000 small and medium companies are expected to participate. Under the scheme, students will spend part of their time working in companies as apprentices. Schools will choose the participant students and seek apprentice slots for them with employers. The apprenticeships will run for three years, the typical duration of studies in a senior secondary school. The first group of target occupations are: secretarial, travel and tourism, bookkeeping, and retailing. A second group currently under consideration includes: dressmaking, hair dressing and beauty, and food preparation. Of the technical schools targeted for the dual system, the best have been chosen, especially those that offer four-year programs. For example, the STM PEMBANGUNAN in Medan will offer an extra year for apprenticeship, six months of which will be spent at a company (PT BHARATA, a large state-owned company) in collaboration with the local BLK. The unit cost is currently approximately Rp 15

Most employers would not train apprentices even at zero wages as their equipment corresponds tightly to their operations. Most students are reluctant to specialize early since technology is continuously restructuring what people do in the work place.

million per graduate for the full four years. This cost is more than ten times the cost of completing the senior education cycle in a general secondary school.

4.31 The dual system reforms are based on the view that, on the supply side, there is a need to reform VTE schools and the Government "must guide and support private schools in implementing System Ganda and in improving the quality of education and training". On the demand side, the private sector is seen as unable to appreciate the value of training or its national role in providing training.

4.32 The dual system has multiple objectives. First, it aims to prepare more students for work in the informal sector than the current VTE does. Still, the dual system does not intend to compromise the students' opportunities to proceed to tertiary education, if they so wish. So, the dual system will attempt to provide suitable

qualifications for further studies and formal sector employment. These are diverse objectives and difficult to meet: If education in the new VTE schools is good enough to allow students to undertake further studies, most of them are likely to do so rather than enter the labor market. (see section on Evaluation below).

4.33 Second, the dual system aims to alleviate future shortages in critical skills. Based on the view that "the external efficiency of education and training fail to take into account future needs in a changing setting of a developing country", the system will try to supply technical skills for anticipated skill needs. However, it is unclear how these future needs will be determined other than through the use of manpower forecasting which is often an unreliable approach to human resources planning.

ISSUES OF THE DUAL SYSTEM

4.34 The dual system is complex. It aims to cater to a variety of needs of students and employers. It calls for the integration of the work place into the nation's basic education system. The ability of a basic education system to diversify sufficiently in order to cater simultaneously for the needs of the formal sector, the informal sector, emerging technologies, immediate technical production requirements of employers and the aspirations of students themselves is usually limited. The specific requirements arising from the adoption of the dual system may prove to be hard to implement. Complete cost (and benefit) analysis of the dual system has not been conducted yet.

4.35 Will employers, especially master craftsmen, be willing to train apprentices? The vast majority of Indonesian firms adhere to traditional production processes driven by wages that match their workers' skills. Even if employers could be convinced to take on young apprentices, the quality of training they will provide to students may be questionable. In a labor market where workers are contracted primarily on a daily and casual basis, and long-term employment relations are lacking, training may be offered by near novices to actual novices.

4.36 It is possible under this scheme that companies may try to mitigate the costs of providing training to apprentices by asking the best senior vocational secondary schools to send a few of their very best students. Given that the dual system would target the best STMs it could

Box 4.2: The Changing Nature of Jobs in Developing Economies

As in more advanced economies, mass production jobs disappear in developing economies as they grow and services start increasing their share in economic activities. In this process, jobs become less secure and the life-cycle of vocational education diminishes. Rewards become more evenly spread among those who can "technically produce" (the *productive* effect of education) and those who have the ability to deal with people and process new information (the *allocative* effect of education). Over time, the number of jobs that require both social skills and familiarity with information technology increases. At the same time, jobs are restructured and defy the requirements of manpower forecasts: a job may go by the same name but qualifications needed for that job change. The new economy requires the integration of traditionally separate functions (design, engineering, marketing), flatter organizational structures, and decentralization of responsibilities.

At times, the change in production structures can be swift. Singapore initially adopted an import-substitution strategy but, by 1966 it switched to labor-intensive exports of manufactured goods. In 1973, the oil crisis led to a reorientation of the economy towards industries and activities that was highly intensive in new skills (financial services and computer software).

Something similar, albeit at a smaller scale, took place in Indonesia with the deregulation of the financial sector. The response of students and the private training system was quick: the number of students in training courses who took exams in accounting was 90,000 in 1990 and 1991 but has since declined to 50,000.

Source: Welch (1970); Salome and Charnes (1988); Berryman et al (1993).

evolve into an elitist scheme. This could prove to be an expensive way to develop skills at the potential risk of neglecting the needs of the student population at large. But even in this scenario there is a problem: the best students from the best STMs are almost certain to proceed to higher education. This will leave employers with weaker students and will reinforce their reluctance to participate in the scheme.

4.37 It is not only the lack of enthusiasm of industry for training that public policy should take into account (on the labor demand side). The views of perspective labor suppliers (and their parents) need also to be considered. Vocational and technical education has low status in Indonesia. Student demand for education and training is driven by

Box 4.3: Training in Britain**The Collapse of Engineering Apprenticeships . . .**

Till the mid-1970s British engineering firms used to recruit more than 20,000 first-year craft trainees every year. By 1984 their number had dropped to 5,000. Though the decline had much to do with the fate of British manufacturing since the oil crisis, the number of apprentices continue to declined throughout the late 1980s dwindling to 3,000 in 1989.

One reason for the decline is that apprenticeships were reduced to 4 years (from 5 years) in the early 1970s. As the employment period was shortened, firms could no longer recoup the cost of their investment in training. The resulting net loss to the company over the whole training period was calculated to be around \$15,000.

When the motive for recruiting an apprentice is concern for future production, the demand for apprentices depends on expected output (product demand), current and future investment (interest rates), and the general availability of skills in the labor market. Netting out the effect of shrinking output, the failure of the British apprenticeships system to recover in the late 1980s has been attributed to a combination of high interests rates and a greater ease for manufacturing firms to recruit adequately skilled workers in the open labor market. Trainee wages have not been an important factor to the collapse of the apprentice system.

Apprenticeships are therefore dependent on labor market conditions as well as current costs, strategic decisions by the firm, future benefits and a stable employment relationship between the worker and the employer.

. . . and The Growth in Demand for Academic Skills

The British Government recently introduced new qualifications in schools that were expected to enhance the status of vocational education and to provide a bridge between school and work. This measure was also expected to lead to specific vocational qualifications that are presumed to be needed by the British industry. The students themselves did not prove to be keen to pursue this track. When they did, their intention was still to go to college rather than apply the specific vocation they were taught. The reason behind students' behavior was that they knew that employers say one thing (they need skills) and practice another one (they recruit among the best applicants). Young people therefore want to differentiate themselves from their competitors and know that a central function of education is to signal abilities to employers. When few people had tertiary education, employers knew that many senior secondary graduates had the ability to perform as they were expected. From a worker's perspective, being qualified at just that level used to be sufficient to provide them with a good chance for recruitment. But with increasing education, employers now know the probability (and costs) of recruiting the wrong person increases when they restrict selection among those with lower, albeit specialized, qualifications.

What companies look for is candidates who can be trained quickly for jobs that change constantly: the relevant vocational skills are academic.

Sources: Jones (1986); Marsden and Ryan (1991); Stevens (1994).

available or expected employment opportunities in the labor market. Since technology is continuously restructuring what people do in the work place, students do not generally perceive it to be useful to concentrate early on a specific set of skills.

4.38 Will the dual system solve the problem (to any noticeable extent) of providing the specific technical skills of the future? Such skills are industry, firm and task specific and typically require a large supply of graduates to make

Box 4.4: The German Dual System

The Labor Market Aspect

German apprenticeships are embedded in a system where unions play a central role in the system and the labor market at large. Employees and employers have long employment perspectives. The Government plays supportive function only. Training is a voluntary activity of the firm. Stable shareholdings and long-term bank financing shields companies from short-term variation in profits. Established employment practices and national collective bargaining makes poaching a rarity. A social partnership enables employers to provide training, government to support vocational schools, and unions to moderate wages for new entrants.

The Education Aspect

Youth apprenticeship in Germany is not an expansion of an education or an apprenticeship system that serves the labor supply needs of specific students or industries. Its aim is not the commonly envisaged aim elsewhere of direct alleviation of skills shortages. The system has four essential components:

- 1) it is designed to be an integral part of the basic education of a cross section of students. Though specific trades are taught, the system is not intending to provide employment for specific target groups or in specific occupations;
- 2) its educational content integrates and coordinates academic and vocational instruction. The system is designed to teach broad employability;
- 3) a significant part of education takes place on the job and is complemented and coordinated with classroom instruction; and
- 4) students emerge from their apprenticeships with recognized and accepted credentials. These credentials certify achievement for specified levels of skills as well as trades.

Recent Developments

In the past ten years, Germany's least developed services sector in Europe has started expanding. In 1993 fewer than half of 130,000 apprenticeships in the metal industry found work in their firms. Modern manufacturing requires not machine engineers but flexible generalists. Increasing employer demand for academic skills is inducing more than half of school leavers today to follow a path that leads to higher education than take an apprenticeship.

Sources: Bailey and Moffitt (1992); Berryman et al.(1993)

close matches in their fields. It is often too uneconomical for Governments to focus on the provision of specific skills that, in any case, industry is not willing to wait for long before it gets them (Box 4.2).

4.39 The dual system as currently envisaged is based on employer funding more training as they are perceived to be "myopic" about the benefits that will accrue to them. International studies have shown that less than one-fifth of private employers may be willing to take on

demonstration youth even at zero wages.³ The reason is that young people would not contribute enough to justify the effort to supervise them (see Box 4.3). This pattern and rationale is also confirmed in the case of Indonesia. A recent survey (MOEC 1994: see Annex 5.1) found that participation in the dual system program was negligible despite encouragement from the Government. The companies were not in favor of on-the-job apprenticeships as they considered them to be an economic loss. They argued that the equipment tightly

corresponded to their operations, and they had no excess capacity.

4.40 The current wave of reform is taking place amidst the existence of a sizable private training effort which has not been taken into account and can result in a (wasteful) over-supply of skills or a crowding out of the private sector. In fact, it is in the areas that are particularly well catered by privately training that many apprenticeships are planned (such as secretarial, retail, tourist, dress making, hairdressing and so on). Instruction for these subjects is already plentiful and often occurs through employers. The large costs of the system, lack of strategic planning and of conducive industrial relations make the apprenticeship system in Indonesia viable only among a few large firms. But as Chapter 5 (Employer Provided Training) shows, it is these firms that are already actively involved in training, and the market failure argument is least relevant. Public funds that would be used to support large firms may also result in inequitable outcomes because they will favor workers in formal employment.

D. INTERNATIONAL COMPARISONS OF APPRENTICESHIP SCHEMES

4.41 Labor markets and education and training systems can be broadly categorized as those that rely relatively more on education (like US and Britain) and those that rely relatively more on post-education training (like Germany and Japan). Germany and Japan are more interesting cases as, like the intentions of the current reforms in Indonesia, they have already developed additional systems to that of education.

4.42 Despite the vast differences between Germany and Japan, their training systems have some common institutional characteristics that are absent from Indonesia. Both systems evolved "from

below" in a long historical process that started from traditional skills formation among craftsmen in Germany and private company policies in Japan. Both systems built upon long before established universal and high quality education. Both systems thrive on relatively homogeneous populations. Both systems involve workers though in different ways: Germany through industrial unions and Japan through lifetime employment. Both systems use labor as a valuable company resource rather than a freely available commodity. Companies in neither system have any legal obligation to train.

4.43 Differences at the work place are important: labor in Indonesia is hired on spot contracts (from daily rates to subcontracting) and often by small- and medium-size firms that are prone to decline, grow or diversify in the very short-run. This makes training schemes extremely difficult to implement beyond what employers

and workers see to their immediate benefit. And industrial relations in Indonesia have neither a seniority-based (long-term) incentive system as Japan nor the significant role that trade and industry associations play in Germany. The Japanese system is based on a mixture of broad general education at schools and a prolonged on-the-job-training training thereafter with significant job rotation from product to product and place to place. It is based on lifetime employment that results in initially low wages and seniority based increases thereafter. The German system is described in Box 4.4.

4.44 In addition, the evolution of the training systems in Germany and Japan benefited from a transition period from agrarian to industrial economies that lasted for decades. The transition from an agrarian to an industrial state took almost 75 years in Japan as growth rates were not as high as those in countries that trans-

The vocationalization of education should be gradual and employer-driven. Costs and students' choices should also be taken into account. Vocational guidance and national skills standards can play a useful role as production becomes more complex and jobs more diversified.

formed more quickly, such as Korea. Korea was transformed in only two decades thanks to growth rates that were three times higher than those in Japan. This successful transformation took place much before planners had time to set up their "skills supply" offensive in the mid-1960s: Korea, as well as Germany and Japan, had already achieved universal and adequate education status before they started producing more sophisticated goods.

E. CONCLUSIONS AND RECOMMENDATIONS

4.45 VTE education should be seen in the broader context of education policies (internal efficiency) and in relationship to their effects on the labor market (external efficiency). Vocational and technical education is considerably more expensive than general education, its labor market outcomes are often no better than those of general education, and its effects on equity can be adverse. On these three counts, namely, costs, benefits and equity, VTE often contributes little to the developmental objectives of growth, employment generation and poverty reduction.

4.46 Training and apprenticeships cannot be examined in isolation of how production is organized and where profit opportunities exist. The need for skills is shaped principally by product demand, what the companies choose to produce, and how they organize production taking into account the availability, quality, and costs of labor in relation to other inputs. This dynamic view, based on efficiency considerations, accounts for what appears to be limited interest of firms in industrial skills. However, there appears to be a vigorous market response to the demand for skill training in service occupations. It is not, therefore, immediately obvious that additional public expenditures on VTE are justified. Given the low and stagnant enrollments in rural areas and among students of lower socio-economic

status, policies should be designed to prevent public funds on education from being captured by the economically more advantaged. The current policy to build the "middle" through an expansion of junior secondary education is the right one and should be strengthened to benefit the non-college bound primary school graduates.

4.47 The development of the "middle" could continue with three specific interventions at senior secondary education. First, vocational and technical should endeavor to cover most of the general aspects of the curriculum and leave the more occupation-specific aspects to employers. This will reduce costs and ensure that specialized skills are acquired when they are in demand. This calls for a gradual approach to "vocalization" of education that will coincide with the move of the economy into the production of more sophisticated

products. In the short-run, general and VTE may have to be almost indistinguishable: they will both offer general education but VTE schools can have just a few occupation relevant (though not specialized) courses.

Specialization

should be delayed for as long as possible until the end of the program. As the demand for occupation specific skills increases, and employers become to see the advantage of offering apprenticeships, the Government would have an important role to play in developing more specialized curricula and the institutional framework within which apprenticeships will be offered. The Government, educationists and employers should cooperate on an equal footing in making VTE education beneficial to the population at large and the specific needs of production.

4.48 Second, the proposals for the dual system that call for the development of unambiguous definitions of vocations and trades and the setting up of national standards should be implemented again in a gradual way and in collaboration with

Early specialization has high costs and competes with the acquisition of more general skills. Occupation-specific training should be left to the very end of programs, and very specialized skills should be determined by employers' needs and acquired in-service.

the private sector. Setting up national standards can be expensive (Box 5.3) and their usefulness will arise only after production reaches a sufficient level of complexity. There are already too many certified VTE programs and courses and only a few of them are offered (para. 4.13) because of lack of implementation capacity and high costs or simply because neither students consider them relevant (compared to a general education qualification) nor are employers keen to recognize them. The development of standards should therefore be under the guidance and active cooperation of the private sector who know in which areas such information is useful. In any case, there should be no attempt to enforce national standards, especially in the form of linking qualifications to wages.

4.49 Third, labor market information to students from all education streams should increase. Vocational **guidance** (rather than vocational education) can provide information to students about job contents of different occupations, the personal qualities which are particularly suitable to them, and the types of education, training and qualification that provide access to these occupations. The need for vocational guidance is often acute in developing countries as ordinary teachers (who have rarely worked in the open labor market, even if they are training instructors) have little knowledge of what is happening in the real world. If such staff exists, they should be used for vocational guidance and provide students assistance in selecting programs of study and career counseling.

ENDNOTES

- ¹ MacMahon and Boediono, (1992a).
- ² Boediono et al., (1994: 31).
- ³ Ball and Wolfhagen, (1981).

Private Training Centers

5.1 Indonesian private training centers are extremely diverse and cater to a wide variety of skills needs. They constitute a vigorous market response to local student demand for greater job opportunities. The centers range from small storefront shops offering a single short term course such as hairdressing or flower arranging, to large urban institutions with over a thousand students, offering a range of multi-year programs in areas such as accounting, computers or secretarial which lead directly to well paid employment. They are most commonly owner operated and located in urban areas.

OVERVIEW

5.2 There are no precise figures on the actual number of centers but more than 20,000 centers are registered with the Ministry of Education and Culture (MOEC) and the Ministry of Manpower (MOM). The centers serve about 4.5 million students annually. This contrasts with 50,000 trainees in MOM's vocational training centers (Chapter 3).

5.3 The growth of the private training centers has been dramatic over time, much greater than any government planned and financed program could have supported. In the past five years, private training centers increased by 6 percent per annum — more than twice the rate of labor force growth.

5.4 Changes in student demand for training reflects shifting labor demand in the economy. The centers attempt to “match” the sectoral growth of firms and occupations in Indonesia by offering cost effective training mainly in service occupations rather than in the capital intensive industrial skills area. Data from SUSENAS show that it is precisely individual demand for training in service occupations that dominates the excess demand for training: among those who would like to be trained but are not currently enrolled in training, more than two-thirds stated that they would like to pursue computers, languages, business and home econom-

ics courses. Craft and industrial skills training accounted for less than 15 percent of the excess demand for training.

5.5 Low quality has often been cited as an additional characteristic of training offered by the private sector. There is little doubt that in an absolute sense this is correct. Quality could be higher at an additional expense (higher student fees), longer duration of studies (attendance of complete programs rather than add-on courses), and a rigorous school accreditation and skills certification system. However, low quality of training that derives from low costs and short duration of training is not necessarily a reason for concern. Skills improvement through upgrading the quality of training unavoidably requires additional investment and material expenditures. Private training centers will not incur such expenses to the extent that

student demand in size and ability to pay is not forthcoming. A key factor for what is on offer is therefore the demand for training by students, job seekers, existing workers and employers.

In the past five years, private training centers increased by more than 7 percent per annum. Still, there is strong demand for training especially in service occupations.

5.6 There is a plethora of often overlapping Government regulations aimed at the private training centers. In practice, curricula, instructional practices, marketing and employment practices of individual centers are relatively unaffected by Government regulation. However, local public training institutions and Government officials can adversely affect the operations of private training centers. Simply by their operation, public training institutions can crowd out private initiatives (Chapter 3). Licensing regulation can restrict or delay the formation of private centers.

5.7 Despite its size and scope, the private training sector is seldom considered in Government human resource planning. Information on the centers is limited and often unreliable. The current wave of reforms in MOM's apprentice-

ship programs and MOEC's dual system have not taken into account the presence and role of the large private sector. The effects of this are known: previous expansion of public vocational/technical education that ignored the presence of the private sector led to skills over-supply and a deterioration of labor market outcomes of graduates (Chapter 4).

5.8 These findings lead to the recommendations that, first, the licensing and accreditation of private training centers should be transparent. Second, the resulting information from registration should be regularly updated and utilized for the gradual withdrawal of publicly provided training from areas well served by the private sector and for increasing parents' and students' awareness about private training opportunities. Third, national skills standards and certification systems should be developed but only gradually and with the active involvement of employers and private training associations.

5.9 The rest of this chapter examines first the characteristics of the private training centers (size, enrollment, course offerings, and instructors Section A). It then turns to a discussion of the regulatory practices of the two Ministries overlooking the sector, namely the Ministry of Manpower and the Ministry of Education and Culture (Section B). Government testing and skill certification programs and their impact on the private training centers is analyzed subsequently. The results of two surveys, a 1992 survey of 150 centers and a 1994 tracer study of graduates of the centers, are discussed in Section C.¹ The chapter concludes with policy recommendations (Section D).

Table 5.1: Private Training: Centers and Enrollment

	1989	1994	Annual Growth (%)
Number of Centers	21,184	28,027	5.8
Registered with MOEC ^{a/}	18,359	19,719	1.4
Registered with MOM	2,825	8,308	24.1
Number of Students Enrolled		4,530,000	
Registered with MOEC ^{b/}		3,360,000	
Registered with MOM		1,170,000	

a/ Based on number of center Directors.
b/ 1993

Sources: For 1994: Ministry of Manpower and Ministry of Education and Culture; for 1989: World Bank 1991.

A. CHARACTERISTICS OF THE CENTERS

SIZE AND GROWTH

5.10 In 1994, there were approximately 28,000 private training centers registered with the Ministries of Manpower and Education and Culture (Table 5.1) training more than 4.5 million students.² This contrasts with the planned training of 50,000 job seekers in the public vocational centers under the Ministry of Manpower during Repelita VI (see Chapter 3).

5.11 The growth in private training has also been impressive. Between 1989-94, the number of (registered) centers increased by 6 percent annually.³ For comparative purposes, labor force growth has been less than 3 percent per annum in recent years.

5.12 The growth in the number of private training centers has been largely market driven, reflecting student demand for training in areas which can lead to employment in the expanding services sector (Box 5.1). Table 5.2 shows the rise and decline in the demand for accounting qualifications (as represented by the number of examination takers), which corresponds to the changes in the labor market following deregulation of financial services. The number of students seeking recogniz-

Box 5.1: Historical Comparison of the Development of Private Training Centers in Indonesia and U.S.

The development of private training centers in a rapidly industrializing Indonesia in the 1990s is similar to the explosive growth of proprietary vocational schools in the United States during the first industrial revolution in the 19th century.

While small proprietary vocational schools had existed in America, teaching from penmanship to masonry skills and the casting of accounts, they experienced a period of explosive growth in the second half of the 19th century as the economy industrialized. Commercial schools grew from fewer than a dozen teaching about 1,000 students to over 340 teaching 115,000. In part this rapid growth was driven by new technologies such as the typewriter, adding machines and the invention of shorthand. During this period there were virtually no public business or vocational schools. Skills were provided either through on-the-job training or through the private training market.

Similarly in Indonesia today there is a rapid expansion of private training centers teaching office skills, as the economy expands and new technology is introduced in the form of the desk top computer that reshapes office work. As in the U.S., the private sector is the first to offer these new skills and is much larger than the public institutions.

Source: Honnick (in press)

able skills in computers rose steadily as these skills are in increasing demand across a variety of employers. Interviews with private centers offering business programs confirmed that the market for office workers has tightened in the last couple of years and reduced the demand for office occupation related courses, such as typing.

5.13 Surveys conducted in 1992 and 1994 of the private training centers also confirm the market orientation of the centers. A significant percentage

Table 5.2: Number of Students Taking Examinations Selected Fields, 1989 - 1993

	1989	1990	1991	1992	1993
Typing	26,072	37,106	33,805	27,256	24,835
Computer	2,430	4,479	3,913	15,864	10,090
Accounting	85,494	93,025	89,950	75,879	53,687

Source: Ministry of Education and Culture

Table 5.3: Private Training Courses Registered with MOEC, Indonesia, 1993

Field	Number of Courses	Percentage of all Courses
Home Economics	5,622	28.5
Health	4,053	20.6
Sport	101	0.5
Agriculture	16	<0.1
Art	1,091	5.5
Craft Industry	30	0.1
Technical	451	2.3
Commerce (Business)	5,516	28.0
Language	2,577	13.1
Special Courses	250	1.3
TOTAL	19,707	100.0

Source: Ministry of Education and Culture

of centers, about one fifth, reported that they had added or dropped a program in the last two years. The programs most frequently added were in computer fields (from basic skills to computer programming and more sophisticated computer programs). The programs most frequently dropped were electronics, welding and air conditioning.

TYPES OF TRAINING OFFERED

5.14 The courses offered by the private training centers range from agriculture courses to home economics, accounting and electronics. Table 5.3 presents a breakdown of courses registered in the Ministry of Education. The

PRIVATE TRAINING CENTERS

Ministry of Manpower does not maintain national data on the type of courses offered, but some data are available through the provincial Kanwils (regional offices of a Ministry). These are shown for West Java in Table 5.4.

5.15 Of the courses registered under the Ministry of Education and Culture (Table 5.3), the most popular are home economics (90 percent of which are sewing courses), health (40 percent of which are hair dressing) and commerce (the majority of which constitutes computer courses, typing and accounting). The MOEC is, in theory, responsible for private centers which offer training in vocational programs. The above pattern indicates, however, that more than 70 percent of the courses they register are vocational in nature.

5.16 A similar pattern appears from the MOM registered courses in West Java (Table 5.4): the highest demand is for typing (13 percent), computer (15 percent), languages (17 percent), and accountancy (16 percent). A comparison with 1993 data reveals that growth in the number of courses was highest in computer, language, accountancy, sewing and automotive courses.

5.17 The most common business strategy of the centers is to offer inexpensively priced short courses, as opposed to complete programs (see Box 5.2). Students may, nevertheless, eventually complete a comprehensive program by taking a full set of courses over a number of years. The median course length in the 1992 survey is just 72 hours, and the median course fee is Rp 70,000 (\$35). A few longer, higher fee courses pull the average course length to 109 hours with an average fee of Rp 145,000 (\$73). Comprehensive programs are longer (and relatively rare). These programs have an average length 256 hours and an average fee of Rp 324,000 (\$162).

**Table 5.4: Private Training Courses Registered with MOM
West Java, 1993-1994**

Field	1993	1994	Percent of all Courses (1994)	Percent Change '93-94
Hotel and tourism	132	141	3	+6.8%
Typing	535	572	13	+6.9%
Secretarial	289	313	7	+8.3%
Computer	565	657	15	+16.3%
Languages	668	744	17	+11.3%
Book Keeping	78	81	2	+3.8%
Accountancy	630	695	16	+10.3%
Driving	229	247	6	+7.8%
Automotive	188	209	5	+11.1%
Electronics	238	251	6	+5.5%
Welding	25	28	<1	+12.0%
Sewing	291	320	7	+10.0%
Baby Sitter	112	133	3	+9.0%
Other	58	67	2	+15.5%
Total	4,038	4,458	100	+10.4%

Source: Ministry of Manpower

CENTER DIRECTORS AND INSTRUCTORS

5.18 Most of the private training centers in the 1992 survey are owner operated (eight out of ten). The directors operate with virtually complete autonomy. They choose the programs, hire the faculty, purchase equipment, and maintain relations with employers.

5.19 Most owners have both extensive formal education and industry experience in the subjects taught. Most were qualified at post secondary education level, with 40 percent at S1 and above. Interestingly, one-quarter were graduates of general secondary education (SMA) and only seven percent came from a secondary vocational or technical school (SMEA/STM). Roughly 50 percent of directors have substantial experience directly related to the center's mission, and most reported that they had taught the subjects offered in the center themselves, as well as other subjects. Just

Box 5.2: The Diverse Business Strategy of Private Training Centers in Indonesia

Private training centers in Indonesia seek relatively small specialized markets and exploit some competitive advantage over other private or public institutions by either offering a unique program or capturing a unique market segment (for example, through location). In Bandung, the *Center for Computer Science and Information System* offers a variety of programs from basic computer literacy (basic DOS, Word Perfect, and Lotus) to specialized courses in sophisticated software (including QuatroPro, Harvard Graphics, Correll Draw). It operates in a classroom above the computer sales and repair business which the owner also runs. Almost all students are university students looking to pick up additional computer skills.

A couple miles away the *Indonesia Amerika Institut* is thriving with 1,500 students. It offers one year programs in secretarial, accounting, and computer, as well as three year programs in the same fields, and short courses. The one year courses are most popular. Students are young, mostly middle class and are making a substantial one time investment (the one year secretarial program costs Rp 600,000) to get into a white collar occupation with a future. The school claims its one year secretarial graduates will earn Rp 150,000 to Rp 200,000 a month. The school has a campus like facility with several buildings and a library. It offers sports, English discussion, and a choir as extracurricular activities.

over half had a specialized certificate or license related to the subjects taught, and one-fifth reported related industry training.

5.20 Overall, the centers employ more part-time (an average of 4.1) than full-time (an average of 3.4) instructors. The predominance of part-timers is due to a combination of factors such as the small size of the centers, the need for flexibility from year-to-year and the lower costs for contract instructors. Full-time instructors report an average of seven years of

related work experience and seven years of teaching experience.

5.21 Instructor training is offered sporadically when the need arises. The centers take care of instructor training in various ways. At times they hire instructors from the local teacher training institution to coach their instructors. At other times, the directors train the instructors.

5.22 MOEC provides some training to center instructors through the Kanwil. Instructor training includes both the content of the field and how to teach. At the end of the course an examination is given and a certificate awarded. The training is organized by field, so there will be a class for sewing instructors, a class for typing instructors and so forth. The training lasts for about 100 hours. However, when instructor training depends on project (donor) funding, it follows at times the fate of the project; the MOEC Kanwil in Bandung trained 566 instructors and directors combined, all in accounting, as part of a World Bank funded non-formal education program. No such instructor training is currently planned due to lack of donor funds.

5.23 The MOM does not currently require that instructors in private training centers be certified, nor does it offer any special training to instructors in private training centers. There are plans for private training centers to have their teachers certified. Instructors in a MOM registered center can take the teacher training offered by MOEC. There are also selective DIP allocations for training private instructors at the BLKs.

CENTER FINANCES AND EXPENDITURES

5.24 While there is probably wide variation in how centers are financed and how profitable they are, the 1992 survey results indicated that the centers depend heavily on tuition for revenue. Student fees generate about 90 percent of revenues. Other sources include sales of instructional material to students or producing and selling goods and services at the school. Some centers generate funds through contract-

Table 5.5: MOEC Classification Scheme and Number of Private Training Courses by Category in Jakarta (1992)

Category	Characteristics	Number (%)
Noted (Teracatat)	Has applied for registration and is being reviewed by the local office; not yet registered by municipality	91 (1.8)
Registered (Terdaftar)	Registered with municipality.	243 (4.8)
"C": Self-supporting (swadaya)	Approved by Kanwil; can operate for a year between reviews; basic courses following MOEC curriculum.	4,093 (81.7)
"B": Self-effort (swakarya)	Only after center applies for upgrading after 1-2 years in "C"; offers training beyond the basic level and some aid or scholarships to students; students take MOEC national examinations.	580 (11.6)
"A": Self-reliance (swasembada)	Has operated for 4-5 years; <u>must be</u> part of a well known and respected national chain; offers advanced level courses; has developed its own curriculum; must own its own building; students take MOEC national examinations.	0 (0)

Source: Ministry of Education and Culture

ing with employers for training. One-in-ten of the centers had a training contract with an employer in the last year. Most centers are financed out of their own cash flow, and only 20 percent of the centers reported that they borrowed money in the year prior to the survey. Of those that borrowed, 85 percent borrowed from a bank. Most of the loans were very small, half were Rp 1 million (\$500) or less.

5.25 The average annual expenditure of the centers was only Rp 50 million (\$25,000). The median was substantially lower at Rp 13 million (\$6,500) indicating that the sector is dominated by small centers with low levels of expenditures. The largest part of their expenditures was salaries (40 percent), rent or mortgage (15 percent), instructional equipment (15 percent) and improvements to plant (10 percent). Advertising, a major expense for private centers in many countries, accounted for less than 5 percent of expenditures indicating the local nature of the training centers. Taxes constitute a minuscule 1 percent of expenditures.

B. INSTITUTIONAL ASPECTS OF THE PRIVATE TRAINING CENTERS

LICENSING AND ACCREDITATION OF CENTERS

5.26 Private training centers must register with the provincial office of either the Ministry of Education and Culture or Ministry of Manpower. Some centers register with both ministries to ensure that they do not break any requirement.

5.27 No official fees are charged though, in practice, there may exist substantial hidden costs. Standards for registration of centers are minimal in theory, but survey results for the MOEC indicate that regulation affects the start-up or accreditation status of the centers (though not the ordinary operation of the centers in matters such as instructional or employment practices). Delays are caused because only the provincial Dikmas has the authority to issue permits and lacks the necessary manpower. Some centers considered quality prerequisites to be very strict. Dikmas, in turn argued that many institutions are undisciplined. Delays were more pronounced in the initial clearance. Below is a description of the licensing and accreditation procedure.

5.28 After submitting the initial application, the center is visited by local officials to verify the existence of physical facilities, instructional equipment and supplies. If the criteria are met, the center is allowed to operate for six months (MOEC) or one year (MOM) before the second review is conducted. For a MOM registered center (at this point called registered or teradaftar), the second review is carried out a year later and, if successful, accreditation (called diakui) is awarded which is good for two years, after which the center must apply again for reaccreditation. These are the only two categories of classification for MOM registered centers. For a MOEC registered center, there are five categories of classification. After the second review, if successful, the center can operate for another six months (the center is now called teradaftar). If the center passes the next review, it is awarded category "C" for one year. There are two further levels of classifications which can be achieved (categories "B" and "A"). Most centers prefer to remain at category "C", settling for an annual review instead of further qualifications and upgrading which they must possess in order to move into higher classifications. Table 5.5 presents a summary of the classification scheme for MOEC of courses on offer in Jakarta in 1992 and Annex 5.2 details the registration process for private training centers.⁴

5.29 Movement to category "C" is virtually automatic. Downgrading is possible and can happen if the level of instruction declines and student performance on tests deteriorates. However, there are no records of such movement and, indeed, very few centers at any category go out of business. In Jakarta, with over 5,000 courses, fewer than ten close in a typical year and that is mainly due to the loss of location to construction development.

Box 5.3: The Costs of Skills Tests Can Be High: Planned Expenditures for Repelita VI

The planned allocation of the Ministry of Education and Culture for the development of examinations for private training courses in Repelita VI is Rp 133 billion. This amount is to be spent on development of courses and learning materials, manpower development/scholarships and technical assistance, monitoring, evaluation and project management. The annual number of students who sit for examination tests can be assumed to be about 150,000/year, (though in 1993/94 only 75,000 sat exams). Still, assuming the high figure of examinees, the planned allocation averages Rp 180,000 (\$90) per examinee for each year of Repelita VI. This compares with an average cost per course of Rp 150,000 (\$75).

The largest single item (Rp 35 billion) in the planned allocation is scholarships for students/job-seekers to attend private training courses. This would benefit about 45,375 people in 11 provinces. The scholarship amount averages to Rp 200,000 (\$100) per person.

The second largest is for monitoring and evaluation (Rp 30 billion) that would cover the activities at national, provincial and district level. These activities are estimated to be 825 man-years at an expenditure of Rp 3 million/man-month (\$1,500).

Training of trainers and other manpower development will absorb another Rp 8 billion though the number of participants has not been specified.

Project management will involve 110 national staff, 2,200 provincial and 1,650 district people at a cost of Rp 5 billion that averages to about Rp 1.3 million/per staff person (\$650).

These four items amount to nearly 60 percent of the total budgeted expenditure for the development of examinations.

It is important that skills tests are developed in close collaboration with representatives of employers and private training institutions. This will ensure relevance and low administrative costs.

Source: "Position Paper on the Development of Continuing Education Programs in Repelita VI", Directorate of Out-of-School Education, Ministry of Education and Culture, 1994.

5.30 It is widely believed (including by MOEC staff) that centers do not benefit from being in one of the higher categories. Centers are not keen to call attention to their classification. The official category is often omitted and the centers simply advertise under their names that they are registered with MOEC; this is enough for students to assume protection by the Government. In fact, often students do not know what category their center is in. This is consistent with why the vast majority of the centers are in category "C". Students simply choose centers based on what courses they offer, the equipment they have and their location. The center's reputation derives principally from the owner and the success of past graduates in finding employment.⁵

5.31 There are two associations of private centers. One is for centers regulated by MOM and the other for those regulated by MOEC. However, the groups cooperate with the two Ministries periodically to set up skill standards or to run training for instructors and directors. The associations have no systematic method for collecting dues, and thus no independent revenue. They do not have professional staff and are essentially run out of the offices of what ever center director or owner is serving as president. This tends to limit the potential of these two associations to evolve into independent accrediting bodies.

TESTING AND SKILLS CERTIFICATION

5.32 Both ministries have developed testing and skills certification systems which are, however, different from each other.

5.33 **Ministry of Manpower.** The MOM is responsible for occupational skills certification and testing. The goal of Repelita V was to develop occupational skills standards and tests for 250 occupations. Standards have been set for

132 occupations and tests for 166. Most recently, the development and administration of national tests by the MOM has been discontinued due to budgetary restrictions. The Ministry now focuses on developing skills standards because they take shorter time and are cheaper than testing (Box 5.3).⁶

5.34 Over the period that the MOM conducted skills testing nationally (till 1991/92), the annual number of test takers ranged from 25,000 to 35,000, compared to an annual enrollment of over 1 million in MOM registered centers. The majority (23,000) of the tested were in the construction field fulfilling a Ministry of Public Works regulation.

5.35 There are two types of skills certificates. One is issued by the private center certifying the student passed the centers course and test and

carries the Kanwil's stamp. Another is issued only to those who pass the national skills test described above. Most students get the first certificate and only a few seek the latter. The degree to which employers recognize and value MOM certificates is unclear but generally their views are based on the reputation of the center rather than the

certificate itself. In general, few trainees subject themselves to tests.

5.36 **Ministry of Education and Culture.** The skills certification system operated by the MOEC focuses on individual skill areas such as basic typing rather than whole occupational areas such as secretarial. The MOEC has developed curricula in 106 subjects (including the different levels within each subject such as basic, intermediate and advanced). For each curriculum there is a test. The tests cover both theory and practice if in a vocational subject. A basic typing examination, for example, takes two hours for theory and practice combined, while sewing can take seven hours. However, it is unclear the degree to which the practical aspects are tested. Often, when there are more test takers than equipment, the test takers end up working in teams.

The two associations of private training centers under MOM and MOEC have no systematic method for collecting dues and often lack professional staff and permanent offices. This limits their potential to evolve into independent accrediting bodies.

5.37 Overall, 160,000 students took examinations in 1994, representing an estimated 44 percent of total students enrolled in MOEC registered courses (Figure 5.1). The proportion of examination takers to those enrolled varies dramatically from field to field. The MOEC staff estimate that in technical subjects such as electrical and automotive training close to 80 percent of students take the examination. In sewing and language, where many students may have avocational purpose, the proportion of exam-takers falls to less than half.

5.38 There has been no proper evaluation of the tests but according to national statistics approximately half to one-third of the test takers fail. This suggests that passing a test is more than simply a routine activity at the end of a course/program, as test takers are already a self-selected group among the trainees, and fees are relatively high.

5.39 **Examination Fees.** Students must pay a fee to take the examinations. The national MOEC office collects around Rp 3,000 for each national examination given. In 1992/93, when trainees underwent almost 200,000 tests, the revenue generated from testing amounted to nearly Rp 600 million (\$300,000). The revenue collected by MOEC is not the only cost to the test taker. Additional charges are made based on the costs of the local officials administering the examination. According to MOEC staff, actual cost to the student per test is usually around Rp 15,000. In this case the revenue generated from testing rises to Rp 3 billion (\$1.5

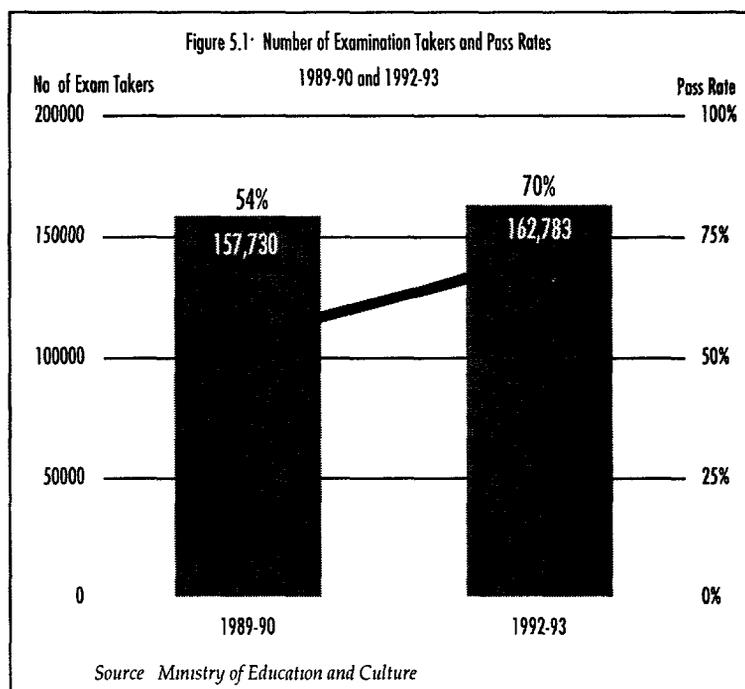


Table 5.6: Selected MOEC Skill Examination Fees and Distribution of Revenue

Field	Level	Fee	Distribution of Revenue		
			Kandep	Kanwil	National
Sewing	Basic	14,250	9,000	3,500	1,750
	Intermediate	16,000	10,000	4,000	2,000
	Advanced	17,250	11,000	4,000	2,250
Typing (Indonesian)	Basic	9,000	4,240	2,500	1,250
	Intermediate	10,250	4,750	4,000	1,750
	Advanced	11,250	5,000	4,250	2,000
Accountancy	Basic I	11,250	5,500	3,750	2,000
	Intermediate	13,750	6,750	4,500	2,500
	Advanced	16,250	7,500	6,000	2,750
Computer	Basic I	18,500	9,000	4,500	5,000
	Intermediate	18,500	9,000	4,500	5,000
	Advanced		no test available		

Source: World Bank estimates

million) (see Table 5.6 for official list of fees in Bandung).

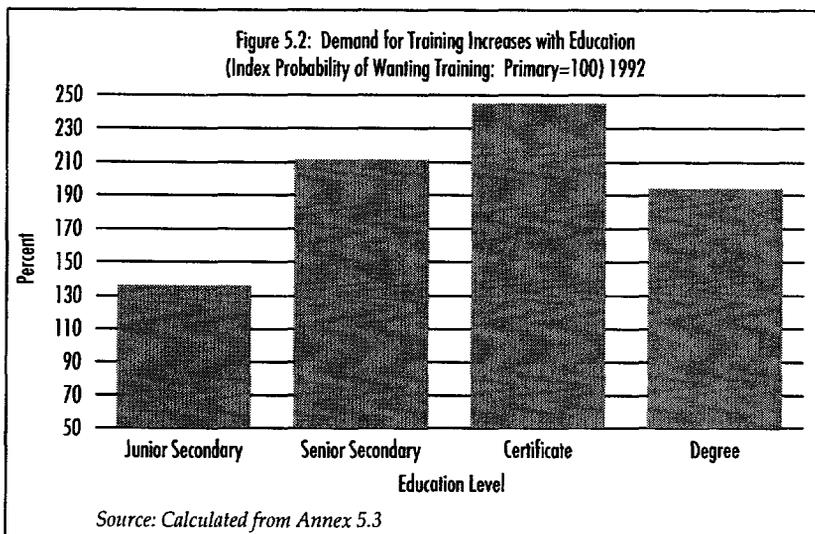
5.40 MOEC staff report that there are 7,436 examination writers, 2,170 certified examiners, and 3,682 graders. They may come from MOEC staff or from the private sector. Assuming that each of these persons has only one such qualification, the revenue generated by fees averages Rp 225,000/examiner. This is equivalent to one month's average salary in the public sector.

VALUE OF CREDENTIALS

5.41 It is difficult to get any hard data on the value of skills certificates produced by the testing (see also paragraph 6.21). The large number of students taking the tests in certain fields seem to indicate that they have value in those fields (for example, in the finance sector, bookkeeping and accounting certificates are used for entry level jobs).

5.42 Alternatively, employers are often familiar with a particular center and have had a good experience hiring someone from that center, thus they value certificates from that center. It is for this reason that some centers rely on own tests and certificates. In the "Indonesia American Institute" in Bandung, a successful center with over 1,500 students, the certificate students get after successful completion of their studies is awarded only by the center itself.

5.43 In other cases, centers offer courses without examination at the end. In some computer centers which teach a wide variety of software (from Word for Windows and FoxPro to Harvard Graphics and Coreldraw) students can take the basic examination in computer but there is no examination for the more sophisticated courses they were taught.

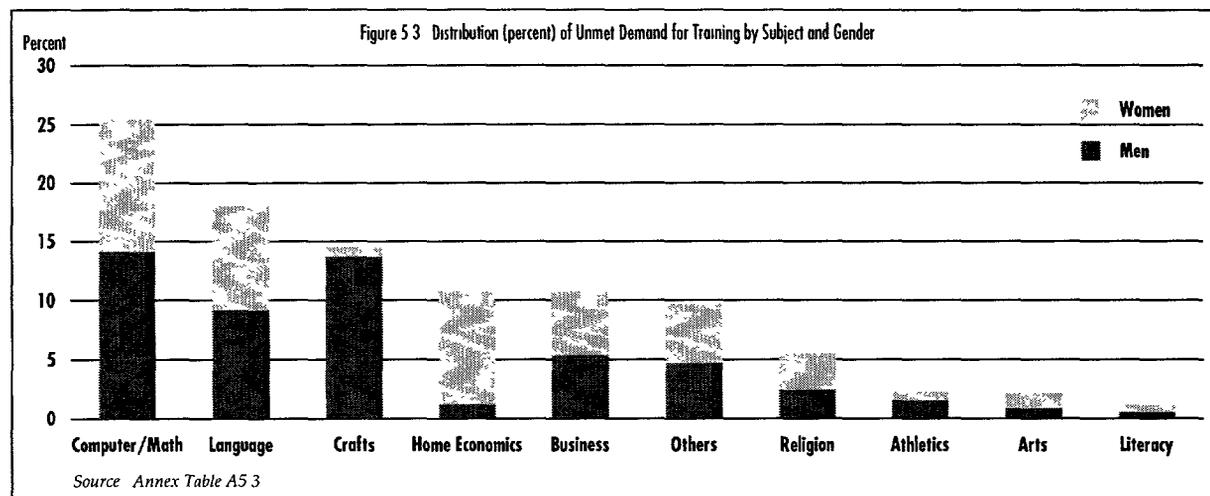


C. LINKS WITH EDUCATION AND THE LABOR MARKET

COMPLEMENTARITIES BETWEEN TRAINING AND EDUCATION

5.44 The 1994 MOEC survey found that computer courses were more appealing to educated job seekers. More than half of students were job seekers qualified at tertiary or senior secondary education. The others were still students (one-third) and the rest workers. The main reason for joining the course was concern for employment. Even among university graduates there was widespread belief that computer skills are a "must" for finding work. The students often joined the course when time was available, such as between graduation from school and until university results were announced or during holidays. In this respect, training plays a complementary role to education filling skills not offered in the standard curricula of more formal institutions.

5.45 SUSENAS 1992 data confirm these patterns. Econometric estimation of the probability of wanting training increases with education after controlling for other characteristics (such as age,



location and income). Those with junior secondary education are 40 percent more likely to demand training than primary school graduates (Figure 5.2). Graduates of senior secondary have a greater probability of more than 100 percent. Demand for training is still high for graduates holding certificates (nearly double that of primary graduates) though demand by degree holders is less than for senior secondary graduates. This is also the pattern observed for employer-provided training: more educated workers receive more training (Table 6.2).

5.46 Half of the trainees from sewing centers in the 1994 survey had upgraded themselves since graduation. Most often upgrading was through on-the-job-training that enabled them to work on pattern making, cutting and power stitching. Most graduates (60 percent) also had plans to upgrade their sewing skills at some time in the future. Of those participants who did not complete the course, more dropped out for lack of time than for lack of funds. Among the sewing graduates who applied for a job, almost two out of three had to fill more than five applications before they found a job, but eighty percent of respondents found work within six months. Only 7 percent of graduates were unemployed for more than twelve months. The most commonly cited reason for not getting a job was that there is too much competition and few vacancies. Initial monthly salaries span from as low of Rp 75,000/month to Rp 150-200,000/month. Though in the garment industry sewing skills are

crucial (accuracy, speed) many graduates were recruited with insufficient skills but at low salaries. Incomes had little to do with education but with length of employment.

STUDENT PLACEMENT AND LABOR MARKET OUTCOMES

5.47 Despite the significant presence of private training centers in the area of service occupations, it is precisely in these areas where most of the excess demand for training lies: most of the respondents in SUSENAS 1992 who said that they would like to get training stated computers, language, home economics and business as their preferred areas. Craft and industrial skills training was in demand by less than 15 percent of respondents. There were no significant differences between women and men with the exception of unmet demand for industrial skills, which was dominated by men, and that for home economics, which was dominated by women (Figure 5.3).

5.48 The 1992 survey indicated that, on average, less than one-third of their graduates found wage employment and most ended up in self-employment. Indeed, the curriculum of most centers offering technical training revolves around servicing equipment, work that is usually carried out by self employed people. For example, most electronic centers focus on training people to repair consumer electronics.

5.49 Larger centers often run a for-profit placement service while others offer this service to their graduates as part of traditional placement responsibilities and marketing. More specifically, 71 percent of the centers surveyed in 1991 offered some placement services though of those that did offer such services only one quarter reported that they regularly received job listings from employers. In the 1994 survey, nearly half of students found employment through the centers (mainly information on vacancies or cooperation with companies) and most of the rest (38 percent) found jobs by own attempts. A few found jobs through advertisements and only six percent through MOM employment exchanges. Many computer centers (40 percent) had cooperation with companies which in most cases meant vacancy information. However, more companies would have approached centers directly if they did not have to report vacancies to MOM's employment exchanges and follow that channel of recruitment. As many trainees after graduation entered the informal sector such job listings are largely irrelevant. Nearly one-third of centers offered job search training and ten percent offered interview training. The most common service offered by the centers was reference and personal referrals to employers which were provided by about half the centers that offered placement assistance.

D. CONCLUSIONS AND RECOMMENDATIONS

5.50 Private training centers in Indonesia are dynamic market driven institutions, serving a diverse groups of students. The quality of programs offered varies, from those offering short term course, teaching low level skills, with antiquated equipment and instructional methods, to programs offering long term training, in sophisticated skills, with modern technology and advanced instructional techniques. These diverse characteristics are compatible with a demand-driven system catering for the needs of a large and diverse country.

5.51 The sector responds to shifting demand in the labor market by adding or expanding programs. Effective industrial skills programs require heavy investment in capital equipment and this implies that few industrial skills programs are offered beyond the most basic level. But many trainees are heading for self-employment in the informal sector where skills are required for repairs of equipment rather the production of fine tools and production of equipment. The system is expanding rapidly and evolving around areas of immediate entry level job opportunities.

5.52 Regulation of the private training centers is spread between two Ministries, and within the Ministries spread across national, provincial and local level offices. While many centers bear the burden of complying with both ministries regulations, the official regulations themselves do not seem to shape the internal operations of the centers.

5.53 The implementation of various regulations and data collection efforts is erratic even in the most developed provinces. While both ministries offer, to some degree, standardized curriculums and skills certification testing, few centers shape their programs around these elements. Both ministries have sporadically offered training and certification programs for instructors and administrators in the centers. These activities are at times supported by foreign funds but private contributions are often common. The private sector seems to be particularly supportive in the areas of computers, sewing, acupuncture, flower arrangements, gymnastics, beauty courses and languages.

5.54 At the national level, the Directorate of Public Education has the responsibility in the development of curricula and examinations. However, the necessary infrastructure for active government planning in this area is largely absent. The most basic data, such as an up-to-date list of active centers and their programs, are available neither at the provincial nor the national level.

POLICY RECOMMENDATIONS

5.55 *First*, continue the policy of "benign neglect." The private training centers have evolved and successfully responded to a shifting student market without any centralized planning or large

scale government subsidy. Their registration and accreditation should be transparent. Centers should have to register only with one Ministry. There is a need to have a single mechanism to develop private training to provide national guidance and encourage a decentralized implementation.

5.56 *Second*, establish a national skills standards⁷ and certification system. This should be done with the active involvement of employers and private training institutions. These interventions should be implemented only gradually and should not be over-designed.

5.57 A system of testing that sets skills certification for occupations can be of value to both trainees and employers. Independent boards should be established to define occupations and create skill standards and tests for these standards. Testing and certification will provide a lever for shaping both the public and private curricula. If a standard requires that a trainee be proficient on a particular piece of equipment, training agencies will have to incorporate it into their curriculum. Skills standards and certification should begin with the largest occupations which require sophisticated skills in the formal sector of the economy. Standards and testing would be established nationally and certificates could be awarded at the provincial level based on test scores. Each province could establish a level of mastery appropriate for their province. Thus a secretary in Jakarta may be required to show proficiency in basic English, while a secretary in an outlying province would not. Greater collaboration between agencies at national and provincial levels is already developing. MPKN (National Vocational Education Board) at central Government level and MPKP (Provincial Vocational Education Board) at provincial level have members from MOM, MOEC, Kadin, and Apindo and are expected to formulate skills and certification standards.

5.58 *Third*, improve consumer information. The testing and certification system can be used to generate consumer information for trainees and employees. The pass rate of graduates of different public and private institutions can be made widely available. This will encourage potential trainees to choose institutions with effective programs, re-

warding these institutions with additional trainees and revenues. Also, skills certification provides important information to employers reducing the costs of hiring and training. Employees gain increased mobility if credentials are widely recognized by employers, and the data generated by testing can be used to evaluate training institutions.

5.59 *Fourth*, improve and expand the information systems for private training centers. At present, information on private training centers is limited, often out of date, and occasionally contradictory. A relatively low cost system for collecting, analyzing and publishing data on the sector can be established. The data collection system could be based on an annual survey of the centers. Variables that could be included are: center location, annual enrollments by course and program, tuition and fees, courses and programs added and dropped, facilities and equipment, instructors' and directors' qualifications, organizational structure (sole proprietorship, chain, and corporation), revenues and expenditures. All data could be stored at the national level electronically. Data could be aggregated up to the city and provincial level and distributed to relevant ministries for planning purposes. In addition, data on the availability of training may help private companies with location and planning decisions. Current directories of institutions could be generated at the provincial and city level to help potential trainees have more complete information on the training options available to them.⁸

5.60 *Fifth*, use the data to plan public provision of training and expenditures. The significant role of private training centers in Indonesia requires that they are included in government planning and their evolution is tracked carefully. Accurate current data on private training centers would mean that public planners would know the fields in which private training is readily available. Thus public funds can be targeted where there are specific unmet training needs due to a market failure.

ENDNOTES

¹ See Annex 5.1 for an explanation of the 1992 and 1994 surveys.

² While there are some data discrepancies and double-reporting (some centers may be registered with both Ministries), most likely there is extensive under-reporting and these figures represent a lower bound estimate. A discussion of the existing labor market information system and human resource data in Indonesia is presented in Chapter 2.

³ In 1976 there were only 4,644 private training centers registered with MOEC.

⁴ Licensing procedures for training institutions to get self-reliance (swasmbada) status are currently reassessed to provide for simpler procedures by 1997. These include (a) the licenses will be no longer issued by KANWIL but by district offices (KANDEP) and (b) there will be periodic accreditation/upgrading. In order to deregulate licensing and improve quality of training, MOEC is also reviewing regulations with regard to standardization in the areas of (a) trainees qualifications; (b) materials; (c) trainers; (d) learning-teaching processes; (e) infrastructure; (f) examinations and certification. The standardization of programs is currently undertaken in five training areas (hotels, secretaries, computers, electronics and automotive), in eight provinces (North Sumatra, Jakarta, West Java, East Java, Central Java, Yogyakarta, Bali and South Sulawesi).

⁵ *The Development of OSS, Testing and Certification in Indonesia*, unpublished, MOM, in English.

⁶ One advantage of a training center being upgraded to a higher category (for example, from B to A) is that it can be included in provincial and national contests. These contests may result in selecting a center as a "model" with beneficial effects upon the reputation of the center.

⁷ The Ministry of Education and Culture, in collaboration with the directors of centers, and representatives from the Chamber of Commerce (KADIN) and professional organizations, has already started (since 1993) the standardization of courses that would improve the quality of the courses under Diklusemas (Directorate of Private Non-formal Education). The standardization covers qualifications requirements for trainees and instructors, curricula, facilities and infrastructure requirements, adequacy of teaching processes as well as examination and certification. In some provinces, private training centers already cooperate with industrial and business representatives to develop new curricula and job practices. For example, pilot standardizations are under way in eight provinces (DKI Jakarta, West Java, Central Java, East Java, Yogyakarta, North Sumatra, Bali, and South Sulawesi) in the areas of computers, electronics, automotive mechanics, secretarial, and hotel education with the cooperation of KADIN, ISI (Indonesia Secretary Association) and PHRI (Association of Hotels and Restaurants).

⁸ MOEC has now developed a directory of courses provided by private training centers.

Employer-Provided Training

6.1 Firms may spend too little, from a social perspective, on training. Employers will not offer training if they are afraid of poaching. When training is transferable, the benefits from training can be shared by the worker, her/his firm and potentially other firms that can poach the worker and free ride on training expenses. Employers who train will either lose their investment in workers' skills or have to pay higher wages to those they already trained in order to retain them. Thus, the market left to its own forces may fail to invest enough in skills. The evidence surveyed in this chapter does not confirm that training is adversely affected by the fear of poaching.

6.2 Another reason for under-investment in training is when training is "lumpy", that is, it has considerable start-up costs that a single firm cannot meet and the scale of production does not justify. However, the nature of production in Indonesia is such that the required training is only in a few cases more demanding than a short introduction of the worker to the firm's specific production requirements.

6.3 The expenditure of firms on training may appear to be small, if employers can recruit sufficiently qualified workers. This is particularly relevant in Indonesia as there is a large pool of educated job-seekers for the current level of technology. Unlike pre-employment training, in-service training offered by employers is difficult to measure. In-service training can take place on- or off-plant and varies in terms of coverage, form, costs and duration. Often even employers themselves do not know how much training they provide: their accounting system is defective for assessing how many resources they devote on it as they have difficulty to separate training from other labor costs or simply confine themselves to monitoring direct training outlays such as trainers' salaries and cost of

OVERVIEW

On-the-job training is substantial in terms of workers' numbers and expenditure. There are no obvious market failures in this kind of training.

materials. The difficulty in measuring employer provided training can be made with reference to estimates for the US: despite having the highest ratio of accountants to population, estimates of how much employers spend on training vary by 50 times (from \$2 billion to \$100 billion).¹

6.4 For these reasons, it is difficult to provide an accurate picture of how much training is offered by employers and whether this is socially optimal. A recent manufacturing survey shows that half of the companies in the sample provided some form of training, 20 percent were in a position to report training expenditures and only 4 percent took advantage of existing regulation and claimed tax deduction of training expenditures. This survey and

another seven surveys reviewed in this section provide significant information on employer recruitment and training practices, product demand, technology and the labor market conditions

that employers face. The findings of the surveys suggest that firms are benefiting from an expanding education system that supplies them with initially able and subsequently "trainable" workers. Still, employer training has not been insignificant.

6.5 This chapter examines the extent of employer-provided training (section A). It finds that it is substantial in terms of both numbers of trainees and expenditure. By some accounts (such as stage of development, under-reporting and extensive pre-employment training undertaken by job-seekers) in-service training is, in fact, much more than would have been expected. Section B examines the experience of East Java with a levy-grant scheme. The results are not encouraging, and the international experience with similar schemes is mixed (Section C). The chapter concludes that em-

EMPLOYER-PROVIDED TRAINING

ployer-provided training is an important mechanism for the creation of skills and needs to be preserved and enhanced with selective policies. An open foreign investment policy can provide an impetus to growth and eventually help the transfer of technology and skills. The chapter also offers suggestions for a more appropriate design of a levy-grant scheme, should this be expanded to other provinces.

A. IN-SERVICE TRAINING

6.6 According to the records of the Ministry of Education and Culture (MOEC), approximately 2,500 companies operate their own training centers. The Ministry of Manpower (MOM) data suggest that as many as 230,000 trainees may be participating in company training (Table 6.1). These figures relate more to formal training and grossly underestimate in-service training. In a survey conducted in 1989 (Manufacturing Survey 1989), 50 percent of the companies surveyed reported providing in-service, formal and informal, training (Table 6.2). In a second survey (Manufacturing Survey 1992), 10-15 percent of companies had formal training programs with specialized training staff, training classrooms and workshops.²

6.7 The figures presented in Table 6.2 are by no means insignificant. They can be considered high given that at least one-third of the manufacturing work force is classified as unskilled, half are on casual/daily contracts, much training may take place informally, and accounting systems are not well developed. Assuming that half of the manufacturing work force is on some form of permanent contract (employers usually are not interested in training casual or temporary workers), and that 10 percent of permanent workers would require training in a single year, then (medium and large) manufacturing firms would need to

Company Training Centers	
Registered with MOEC	2,500
Registered with MOM	133
Trainees (MOM)	
Registered with MOM	89,435
At company training centers	115,000
In conventional apprenticeships (OTJ)	26,000
In dual apprenticeships	26,000
TOTAL	230,435
<i>Sources: Ministry of Education and Culture; Ministry of Manpower</i>	

train approximately 175,000 workers (of the 3.5 million they currently employ). Similarly, with respect to the entire formal sector (that is, workers in all incorporated establishments, see Chapter 1), 400,000 would require training among the eight million workers. 6.8 Comparing these training "needs" (175,000-400,000) to the 230,000 reported as company-based trainees by the

Ministry of Manpower in Table 6.1 (which are grossly under-reported) points to the relatively high levels of in-service training taking place. It is also high considering the large amount of private pre-employment training taking place in Indonesia (see Chapter 5). When external pre-employment training opportunities are significant, firms can avoid fixed investment costs (staff and plant) in specialized training, a fact that is especially important to smaller firms. Job competition due to changing demographic structures has increased the incentives for acquiring more education in hope for

Education	% Trained	Of Whom (=100)	
		Watching Only and Taught On-The-Job	Formal In-Plant and Off-Plant
Primary	46	94	6
Lower Secondary	42	89	11
Upper Secondary	47	87	13
Post-Secondary	48	72	28
All	49	88	12
<i>Source: World Bank, 1991</i>			

a job in the still small formal sector. Hence, job seekers attempt to enhance their employment opportunities by acquiring additional skills after leaving or even while in school (such training is usually focused, of short duration and relatively inexpensive). The large numbers of individuals in private training courses provides relief to many employers from having to offer training to their workers.

6.9 Individuals, once recruited, are more likely to receive training the higher their educational level as company-provided training usually complements education.³ In the US, approximately 30 percent of craft workers receive company training compared to 40 percent of skilled workers and 50-60 percent of managers, professionals and technicians.⁴ Though this is not fully happening in Indonesia (Table 6.2, column 1), the more educated receive more formal training than the less educated (Column 3). Data from SUSENAS 1992 indicate that individual demand for training among those aged 10-29 increases with the level of education (see Chapter 5).

HOW MUCH DO FIRMS SPEND ON TRAINING?

6.10 In the Manufacturing Survey 1989, 25 firms (out of 142) reported average training expenditure of Rp 68 million. Given that employment in all 142 firms in the sample was 56,000, average expenditure for each (trained or untrained) employee comes to nearly Rp 30,000 per annum. Assuming an average monthly wage at that time of Rp 150,000 this corresponds to a training/payroll expenditure of 1.7 percent. The survey was, however, biased towards larger firms (>200 employees) which, indeed, spent on training on average Rp 104 million compared to Rp 4 million for smaller firms that had cost estimates of training. Differences between large and small firms are generally expected. For example, small firms in the sample employed more workers on casual and piece-rates contracts than larger firms (61 percent and 47 percent, respectively) and more unskilled workers (36 percent and 31 percent). They also relied more on female than male workers (66 percent and 51 percent) and women tended to have lower attachment to the labor force.

6.11 In the Manufacturing Survey 1992, West Java firms reported an average expenditure of Rp 166 million on in-service training, and Rp 25 million in East Java. Calculating training expenditures as in the previous paragraph produces diverse training expenditures: West Java firms spend on average Rp 50,000 per employee but East Java only Rp 7,000. The results of the 1989 survey fall almost in the middle of these two estimates.

6.12 Despite the variation in the estimates, the findings suggest that in-company recorded expenditure on training may not be much below 1 percent of the total payroll, that is, of wages paid to those who receive and those who do not receive training. Training expenditure of 1 percent of the payroll is the conventional benchmark for in-service training. This is the amount spent on training in industrialized countries and in the NICs (Box 3.1).

6.13 The ratio of wages (total worker compensation) to value added in the manufacturing sector in Indonesia was 21.3 percent in 1992 having been relatively constant at that level since 1986. A one percent additional expenditure on training would increase labor costs only to 21.5 percent of value added—a marginal difference of one-fifth of one percent. In most cases, firms would be willing to incur such an increase in costs, if a skills need arises.

EMPLOYER PRACTICES

6.14 This section discusses the results of eight surveys in Indonesia. They were undertaken in 1980 (addressing company recruitment policies); 1985 (on labor market outcomes of BLK/KLK graduates); 1989 (an employer and BLK/KLK survey); 1992 (Manufacturing Survey in three provinces). Four additional surveys were completed in 1994: a tracer study of public university graduates; a tracer study of science and technology graduates; a survey of private training centers; and a pilot survey on engineering manpower. The main findings of these surveys are summarized below. The first survey is discussed separately as it shows the complementarities between education and

training and the similarities of employer recruitment policies in 1980 with those of today.

6.15 *Survey 1980.*⁵ This early survey identified factors influencing company recruitment that are still of relevance as they

relate more to the informal sector. The informal sector changes more slowly over time than the modern sector, and most workers in Indonesia are still employed in the informal sector. The study sampled 80 companies equally divided among hotels, textiles, trade and construction sectors. The public sector, multinationals and larger firms were under-represented.

6.16 Age and education were predictably the most important factors influencing recruitment (Table 6.3). The worker's sex was nearly as important confirming the general view that many jobs are sex-stereotyped. Sex was particularly important among skilled and unskilled manual workers as these two categories are generally more segregated than non-manual work (for example, compare an unskilled worker engaged in lifting/loading and another in cleaning; or a skilled worker in the car industry and another in textiles). Marital status was most important for secretaries (mostly females) and managers (mostly males). That training ranked last among the listed factors, is not unexpected: employers usually recruit workers who are "trainable" to the specific company requirements rather than those who specialized early in their studies often at the expense of formal general education. But what makes this finding particularly relevant to the present analysis is that it was as unimportant for skilled workers as for the unskilled. The more recent surveys indeed confirm that firms still recruit unskilled workers and through in-

Table 6.3: Factors Affecting Recruitment in Different Occupations in Indonesia ^{a/}

	Managers	Technicians	Book-keepers	Secretarial	Supervisor	Skilled	Unskilled
Age	90	83	83	100	100	91	82
Education	90	83	87	89	94	64	4
Sex	80	91	60	79	78	93	93
Marital Status	70	35	50	58	56	38	51
Training	50	48	43	53	17	5	3
^{a/} Percentage of firms agreeing that a factor is important							
Source: Constructed from Dougherty (1990).							

service training upgrade them to skilled workers.

6.17 *Other Survey Results.* The Manufacturing Surveys of 1989 and 1992 revealed that skills upgrading is primarily internal. Firms rely mainly on in-service training and internal labor markets. Recruitment of skilled workers is more important from job-seekers than through poaching. Firms have no effective demand for trained persons, at least in the type of jobs that many public vocational centers supply.

6.18 Workers education was generally found to be adequate. Employers are overall satisfied with the graduates of secondary school graduates and generally indifferent between alternative types of education such as general or vocational. Even at tertiary level, many employers do not expect graduates to really possess practical and technical skills.

6.19 In the case of graduates from public and private universities, training was considered to be complementary to education. Training courses were mostly given by employers in areas where higher education does not specifically cater to. Still many courses were imparting general, transferable skills rather than technical skills (such as problem analysis and solving, foreign languages, report writing, communication skills, team work). In general, firms preferred to recruit trainable graduates (those who have personal qualities such as creativity, logic, leadership, confidence) than those who simply possessed higher technical skills. And employers did not seem to consider graduates from top national universities as the only capable ones to

fulfill their needs. One study concluded that "there is little evidence to support the existence of serious problem in the quality of the graduates....[it] is proper to conclude that the employers in Indonesia are relatively satisfied with the quality of the graduate labor force".⁶

6.20 Poaching was not a main reason for non-training. Only 1 percent of skilled workers and 2 percent of supervisors and technicians had been poached over an 18 month period. The firms that did give poaching as a reason were all Indonesian private firms in low tech sectors, precisely where skill are more readily available in the open labor market. The highest incidence of poaching was in firms that experienced slow growth in either employment or output. This suggests that worker poaching does not depend on other firms' actions only but also on workers' willingness to leave when their firm is under stress. This can be taken as an indication of efficiency in the sense that workers find employment where their wages (and, by implication, productivity) are highest. The science and technology graduates tracer study also concluded that the fear of poaching is not widespread and, perhaps, employers are also able to pass some of the cost of training to employees.

6.21 Employers cooperated with private training centers. The Manufacturing Survey 1992 revealed that 15 percent of private training centers in West Java and North Sumatra had training contracts with employers and about 25 percent had job listings. The 1992 Survey of Private Training Centers (see Chapter 5) showed that 40 percent of training centers had some cooperation with companies and nearly half of the trainees found employment through information on vacancies or direct cooperation with employers. In general, firms use private training centers as much as Government training centers. In practice, linkages with other firms (material, equipment, suppliers, buyer, license partner, etc.) were the most important sources of training (Table 6.4).

6.22 The surveys also revealed that skill certificates are not generally recognized by enterprises. Overspecialization was found to hurt the eagerness of

Table 6.4: Distribution of Trained Workers in the Past Year by Provider in North Sumatra, West Java and East Java, 1992^{a/}

	Percentage
Backward/Forward Linkages ^{b/}	43
Management Institute	20
Government Training Center	11
University/Polytechnic	11
Private Training Center	9
Industry Association	6
Total (N = 1226)	100

^{a/} Percentage of those who received off-plant training in the past
^{b/} Backward/forward linkages includes training provided by buyer or material and equipment supplier, joint venture and license partner.

Source: Manufacturing Survey 1992.

individuals to attempt to improve their own level after beginning their careers.⁷ Personnel rules (e.g. S1 qualify for pension, insurance, housing) removes the emphasis from certification to ability. Many enterprises are of the opinion that recruitment of graduates from the higher quality universities should be kept to a minimum because of their high initial salary. Most skills are certified by the companies themselves (Table 6.5).

Table 6.5: Percentage of Workers Who Received a Training Certificate by Awarding Body

Firm	83%
Association	3%
Government	14%
All (N=3567)	100%

Source: Manufacturing Survey 1992.

6.23 Companies are generally reluctant to join a formal apprenticeship scheme. They argue that the capital stock they have is determined by the number of their own personnel and current needs, and any additional equipment for satisfying supply-driven training initiatives will add to their costs at no benefit to them. This poses poten-

tial problems in the implementation of the proposed apprenticeship and dual systems (Chapters 3 and 4).

6.24 Similarly, policies that attempt to stimulate training among firms have low take up rate. The tax deduction of training expenditures (Decree of Ministry of Finance No. 770/1990) was found to be claimed only by 4 percent of firms in the Manufacturing Survey 1992 although 20 percent of firms were in a position to report training expenditures.

6.25 Government-owned companies had some special characteristics. Compared to other classifications (large and small, export and domestic oriented, fast and slow employment growing, fast and slow output growing, and foreign or Indonesian-privately owned) Government enterprises are the only ones that report no (0 percent) skills shortages (compared to 30 percent for foreign and privately owned Indonesian firms) but the majority of them reported greater needs for workers supervision, missed deadlines and absenteeism. Off-plant training is more common among Government establishments as they usually lack classrooms. However, the number of training instructors averaged 11 per Government establishment compared to 5 per foreign firm and an average of only 3 in the whole sample. A much higher

percentage (50 percent) of Government-owned firms report that they incurred training expenditures compared to only one-quarter of export oriented firms.

6.26 Skills shortages ranked low among company problems. In the 1989 survey 31 per cent of establishments found lack of skills to be problematic, but this problem ranked only seventh in a list of twelve production problems (and ninth among export-oriented establishments. In the 1992 survey, the quality of skilled workers and operators was ranked fifth among the problems manufacturing firms face (after quality of raw materials, delays in delivery of components, availability of electricity and water and quality of final products). The quality of supervisors was ranked seventh (the sixth being missed output deadlines) (Table 6.6).

IS MANUFACTURING FACING SHORTAGES OF SKILLS?

6.27 The main findings of the Manufacturing Survey 1992 are summarized in Box 6.1. They confirm that firms do not face skills shortages and would be unwilling to provide in-service training at a cost.

6.28 Is it likely that skills shortages will emerge soon? This can be answered by examining the stock of various categories of skilled workers in manufacturing relative to the annual output of the education system of such workers. The survey revealed that less than 1 percent of employment consisted of scientists and engineers. Since the sample consisted predominantly of medium and large companies, which employ around 3.5 million workers across the country, this sector can be estimated to employ around 24,000 scientists and engineers. A ten percent growth in manufacturing employment in the next few years may, therefore, imply around 2,500 employment opportunities for scientists and engineers.⁸ The annual supply of these two groups of graduates is currently about 14,000. A shortage of engineers for manufacturing needs is thus unlikely in the foreseeable future. In fact, many graduates may start their careers as technicians for which demand appears to be greater as is evidenced by the easier absorption of diploma graduates compared to degree graduates (median job search

Table 6.6: Ranking of Production Problems: Manufacturing Firms

1	Quality of raw materials
2	Quality of final products
3	Delays in delivery of materials
4	Availability of electricity and water
5	Quality of skills of operators and assemblers
6	Missed production deadlines
7	Quality of skills of supervisors
8	Quality of skills of managers; waste of materials
9	Quality of skills technicians; quality of machinery; careless use of equipment; employee absenteeism.
Source: Manufacturing Survey 1992.	

2 and 4 months respectively after graduation (see also Chapter 1, Section C).⁹

6.29 In a similar fashion, the demand for skilled trades workers (industrial and vehicle mechanics, lathe operators, machine setters, electricians) can be estimated to be around 40,000 for the whole country per year. This compares with an annual output of senior secondary technical schools of 115,000.

6.30 Finally, semi-skilled and unskilled workers, who form more than three-quarters of manufacturing employment, can be recruited easily among senior secondary school graduates irrespective of the type of school they have attended.

6.31 If there were skills bottlenecks in Indonesia, one would expect sizable wage differentials between skilled and unskilled workers. However, wage differentials are quite small. Compared to unskilled workers, tradesmen are paid only about 10 to 20 percent more, and supervisors with 10 years experience or technicians (often degree

holders) are paid about 100 percent more than unskilled workers. Furthermore, skilled/unskilled wage differentials have narrowed over time (see Chapter 1, Table 1.12).

6.32 The overall vacancy rates in the Manufacturing 1992 survey were 3 percent for skilled operators, 8 for tradespersons and 5 percent for supervisors and technicians. Assuming a ratio of qualified to total employment of 10 percent, then a company employing 100 workers has a shortage of 0.3 skilled operators, 0.8 tradespersons and 0.5 supervisors/technicians. However, no foreign firm reported vacancies for either skilled operators or tradespersons or supervisors and technicians. This shows that skills shortages, to the extent that they are worth mentioning, are not a deterrent for foreign firms to settle in Indonesia.

THE VIEWS OF FOREIGN INVESTORS

6.33 The views of international investors on the quality, availability and costs of production and managerial labor in Indonesia and another ten Asian countries are summarized in Table 6.7. In most countries quality of production labor is not seen as a big problem (although Indonesia, together with China, is the worst placed in this respect). Availability and cost are, however, worrying employers in the obvious range of countries where labor shortages have emerged - Hong Kong, Japan, Singapore, Korea and Taiwan. Some availability problems are beginning to arise in Malaysia and Thailand but not in Indonesia.

6.34 The fact that Philippines scores higher in business opinions than Indonesia is not because of its training system, that is equally lacking, but because of its education attainment. In the Philippines, like in Indonesia, organized training is not commonly available and most training takes place through learning-by-doing. Workers familiarize themselves with a set of production tasks. Training involves copying more experienced workers or simply following instructions. Workers start usually at the unskilled level and gradually learn more complex and finer operations. In most organizations there is a hierarchy of expertise and

Box 6.1: Indonesia Manufacturing Survey 1992: Summary of Findings

The most important conclusion from the Manufacturing Survey 1992 is that firms are generally satisfied with the present level of quality and skills of their work force. Additional costs in higher wages and training facilities are not seen as presently necessary or profitable. The relatively narrow wage differentials between semi-skilled operators and assemblers do not point to a particularly great shortage of the latter. The outstanding growth in recent years of the manufacturing firms in general, and of textile, garment and shoe industries in particular, indicates that required quality standards are met. Continued expectation of high expansion expressed by most firms also indicates that product quality is not perceived to be a hindrance to growth in the future.

The value of the study is that it documents the status quo of a manufacturing sector focused on producing low cost and relatively unsophisticated products for domestic and export markets.

workers climb up the hierarchy of skills through learning-by doing. Generally, the skill acquisition by a worker determines his rate of promotion but actual promotion eventually depends on available positions at higher level. Workers can be stuck in tasks for which they are over-qualified, when output growth is small and the firm is not expanding.¹⁰ However, when skills shortages arise, upgrading takes place relatively quickly (Box 6.2).

6.35 In Indonesia foreign investors are more concerned about the complicated processing of licensing that takes time. Indonesian policies limit the productive capacities of foreign joint ventures and restrict their marketing advantage. China, Vietnam and India can take advantage in the meantime. To employ an expatriate in Indonesia three applications must be submitted, to the Ministry of Manpower, to the Municipal Manpower Office and to the Population Affairs Office.¹¹ The Manufacturing Survey in 1989 showed foreign firms are little concerned with workers' skills in Indonesia but experience significant difficulties with red tape and cannot easily get access to other local inputs and supplies.¹²

6.36 As far as managerial labor is concerned, top quality ratings go only to Hong Kong, Japan, Singapore and Taiwan. Indonesia, along with China, Thailand and Vietnam, receives the poorest rating. The most interesting case is the Philippines that has better managerial quality rating than Korea. In fact, Philippines is an example for noting that skills and education over-supply is not necessarily the solution to a country's economic and labor problems. Economic activity is guided more by how much it costs to produce the way employers find it profitable to produce rather than by providing them with over-qualified workers at high unit labor costs.

6.37 In addition to conventional foreign direct investment and production in export-processing zones, a new avenue for job creation,

Table 6.7: Labor Ratings in Selected Asian Countries, 1991

	Production Labor			Managerial Labor		
	Quality	Availability	Cost	Quality	Availability	Cost
China	5	1	1	10	10	1
Hong Kong	1	10	8	1	10	10
Indonesia	5	1	1	10	10	2
Japan	1	10	10	1	1	10
Malaysia	3	3	3	5	5	5
Philippines	3	1	2	3	1	1
Singapore	1	10	8	1	10	8
Korea	1	8	7	5	10	9
Taiwan	1	9	8	1	8	9
Thailand	4	2	1	10	10	4
Vietnam	3	1	1	10	5	1

Note: 1 = the best grade possible; 10 = the worst grade.

Source: Political & Economic Risk Consultancy Ltd., reported in International Herald Tribune, July 29, 1991.

Box 6.2: Even Skilled Workers Can Be Replaced Relatively Quickly: The Case of the Philippines

Along with several Asian countries, the Philippines suffered from migration of skilled workers in the 1970s and early 1980s especially to the Gulf region. Nevertheless, within a short period the labor market returned to equilibrium by "inexperienced" workers replacing the skilled ones who had left through internal firm training. A Philippine employer study deliberately focused on seven skilled occupations that hemorrhaged, and replacement could be considered to be particularly difficult. The skilled occupations were aviation maintenance technicians, electricians, engineers, heavy equipment operators, nurses, ship-repair technicians, and telecommunications technicians. The surveyed showed, despite the large scale migration in earlier years, skills shortages had been alleviated in a much shorter period than any deliberate government scheme could have achieved (through time required for planning, budgeting, design and implementing).

Source: Fernandez, Alfonso and Mendoza, 1987.

skills development and technology transfer for Indonesia can come from the so-called "growth triangles" (Box 6.3). Again, production in the triangles may not require in the first instance, specialized skills and attempts to provide such skills ahead of time can be wasteful.

6.38 According to a conventional production function, a firm with given capital hires workers of any skill and pays them according to the workers' expected contribution to output. However, in a more realistic setting, firms hire workers that can match the sophistication of capital as well as the skills of management. For

Box 6.3: Growth Triangles, Foreign Investment and Skills

Foreign investment helps growth...

The emergence and expansion of growth triangles in East Asia (such as the Singapore-Batam-Johore, the already agreed Penang-Sumatra-South Thailand and the planned Sabah/Sarawak-Sulawesi-Sulu) offer benefits to participating countries without loss of economic sovereignty. The triangles are more dynamic than national EPZs because they can exploit greater economies of scale and the comparative advantages of more than one country. Capital, technology and managerial skills usually come from investing countries. Land, infrastructure and labor comes from the host countries. The driving force for triangles comes from newly industrialized countries that want to relocate labor-intensive production to lower wage economies. The benefits to host countries are job creation, skills development, technology transfer and industrial discipline with spill over effects on the national economies.

For Indonesia (as much as for the Philippines, Thailand and Vietnam in the future) growth triangles can prove instrumental for job expansion in the short run and technology transfer in the longer run. Positive effects of FDI upon TFP and overall growth are well documented in Indonesia.

...but it does not always require specialized skills

Young female senior secondary school graduates who intend to work for two years in the island of Batam enter into a 6-month apprenticeship contract with the recruiting company before they are offered a regular contract by their employer. Prior to this apprenticeship, the perspective workers must receive training by the Ministry of Manpower. An initial condition for getting employment in Batam is that the worker should be unmarried.

The recruiting company places worker in an "apprenticeship training location", in most cases the site of the eventual employer. During the apprenticeship period the worker is paid reduced wages (Rp 99-105,000 per month instead of Rp 120-135,000 per month for regular employees). No formal test is administered at the expiration of the initial 6-month contract. In fact, it is unlikely that workers qualified at the senior secondary education level are unable to perform satisfactorily in routine assembly-type work. If the worker wants to terminate her employment, she has to pay compensation to the recruiting company equal to the wages already received. She will also be responsible for her return air fares.

At the end of the two-year employment, most workers are discharged or leave. No certificate is awarded for the training they received first, by the Ministry of Manpower and second, during their six-month apprenticeship with the firm. In fact, they have acquired no skills other than those than any worker would get during the ordinary course of employment.

Company provided apprenticeships do not always impart skills -- at times they can be a way of paying lower wages.

Sources: Husain and Jun (1992); Fry (1993).

example, secretaries working for investment banks or major law firms are more skilled and earn more than secretaries working in retail banks or local law offices because they work with the more skilled and highly paid bankers and lawyers.¹³ The need for higher skills among the general work force will therefore arise when the skills of management increase. In other Asian countries, such as Singapore and Korea, this process took place primarily through foreign investment. In the Manufacturing Survey 1989, training classrooms were on average available in 14 percent of firms but as many as 30 percent of foreign owned firms had classrooms. Foreign firms reported no technical advice difficulties.

WHICH FIRMS PROVIDE TRAINING?

6.39 In Indonesia, contrary to expectations, firms that target the domestic markets are high-tech firms producing, for example, vehicles and pharmaceutical and are usually foreign firms or joint ventures. These firms are generally more likely to offer training because they produce expensive products or require complicated and precise production processes which require specific skills of dexterity, concentration and judgment. However, even high tech products and complex production processes require only a small number of well trained personnel. For example, a few highly trained computer and maintenance/repair workers can keep busy hundreds of "just literate" workers whose only tasks is to put the same component in the same slot.

6.40 Export oriented firms are low tech firms specializing in labor intensive products (garments and shoes) or simple products (plywood and shrimps). Many of these firms are domestically owned. Naturally, the simplicity of production processes (such as assembly) or low cost of products (such as jeans) implies that neither sophisticated skills are required nor operators' mistakes are expensive.

6.41 Export firms pay average or less than average wages to operators and below average wages to tradesman and supervisors (Manufacturing Survey 1992). It is not clear whether

greater availability of skills will boost export performance at least under present conditions. Many Indonesian firms do not see training as an important input to production while they grow rapidly in terms of size and assets.

6.42 Firms that invest in technology have greater incentive to provide training or motivate worker learning about new processes and products as compared to firms that use older, more established technologies (Box 6.4). The vast majority of Indonesian firms adhere to simple and traditional production processes driven by low wages. The vast majority of workers are semi-skilled operators and assemblers who are easily trained on-the-job in a matter of weeks, rather than months, given the relative abundance of the educated unemployed.

B. THE EAST JAVA LEVY-GRANT SCHEME

6.43 A levy-grant scheme was introduced in East Java in November 1992. In addition to asking firms to pay the levy that would be used for their own training purposes, the regulation includes provision to charge an administration fee for the collection of the levy. Though companies that already provide training for their employees can opt out of paying the full levy, they still have to pay a portion of the levy that finances the training of job seekers and informal sector workers. The Provincial Governments of West Java and North Sumatra have passed legislation to implement similar levy-grant schemes, and the East Java scheme is seen as a model for the rest of the country. However, the scheme has serious shortcomings.

6.44 One objective of levy-grant schemes is to create awareness in training and to develop a private sector, demand-driven system. As it stands, the Levy-Grant scheme acts like a tax on employers/workers. There is no dedicated account for the levy. The funds collected by the Provincial Taxation Office (DISPENDA) are allocated through the DIPDA (Provincial Government development budget) and become part of general provincial revenues. They are then allocated at the discretion of Government representatives.

6.45 The training activities funded by the levy-grant revenues are neither determined nor managed by the private sector. Training activities are

Box 6.4: Technology, Wages and Skills: Company Recruitment and Training Practices

TEXMACO is a leading textile manufacturer with more than 31 percent of the domestic market. With an annual production of 100 million meters of fabric and 7.5 million garments, TEXMACO is on a path to become the largest textile exporter in South East Asia. It started in 1963 as a single weaving mill but now owes 10 units and employs 18,000 workers. The stiff competition from Korean and Taiwanese companies is met with continuous technology updates. The company has its own training facilities. When asked about problems, officials replied their most serious problem was lack of precision equipment testing facilities in Indonesia that necessitated the use of Singaporean facilities. The company has no problem recruiting senior secondary school graduates at the local minimum wage and was satisfied with its workers' performance.

UNILEVER is a major joint venture in Surabaya with a work force of about 600. The company is currently undergoing in-plant technological changes that call for a more flexible work force. To this end, Unilever has stopped hiring graduates with less than D3 (polytechnic level) education. The reason is that they do not believe that senior vocational secondary school graduates are able to adapt to a changing technology.

ASTRA training is designed and implemented by its Education and Training Center (ATEC). Technical training was always conducted in house but, prior to 1978, most management training was handled by outside institutions. From 1979, with the assistance of INSEAD (a institution among the world leaders in management) the company started running its own management programs that later evolved into comprehensive programs. By 1987, full curricula and programs were in place that train and upgrade employees from the time of recruitment till they assume executive positions. Today, ATEC has four training programs. First, compulsory training on national and company culture. Second, functional training in areas like human resources development, finance, production, marketing and information systems. Third, general training that ranges from basic, supervisory, middle and general management training programs to executive and business strategy programs. General training for newly recruited university graduates lasts six months, one-month class training followed by 5 months on-the-job training. And, fourth, ATEC has a training program in foreign languages that teaches from 500 basic words to full competency.

Source: TEXMACO, UNILEVER, ASTRA

proposed by the Provincial Training Council to the Provincial Manpower Office and the Governor selects the companies to participate in the training program. The Council is also responsible for selecting the training institutions and instructors, and for coordinating and monitoring the implementation of training. Its membership includes representatives of Government, employers and employees but is dominated by Government representatives. The dissatisfaction of many employers represents a serious challenge to the efficacy of the scheme. Employers are reluctant to participate the scheme. Between November 1992, when the Levy-Grant scheme became effective, and October 1994, nearly 2,000 companies had paid the levy out of an estimated 20,000 that are liable to pay. Over Rp 850

million has been collected. The revenue collected is relatively small considering it was obtained over a two year period and indicates that employers do not consider the benefits of the scheme worth their financial contribution.

6.46 So far only 925 people have been trained at an the average cost of Rp 900,000 per trainee. Part of the high costs is due to food, accommodation, transport and additional honoraria that this type of training attracts. There is no information on the duration of training but publicly provided training is typically of short duration (from a day to a couple of weeks). For comparison, costs for two-week training under the World Bank Skills

Development Project currently under implementation are only Rp 300,000.

6.47 Much of training funded by the levy-grant scheme is in areas where the private sector is also providing training. The eight training courses that have been conducted for job seekers thus far have been mostly in sectors such as the garment, beauty and handicrafts. Similarly, over half of the 35 training programs that have been offered to companies have been for supervisory management. The rest have also included a fair amount of other management courses (such as leadership, marketing management, job analysis).

6.48 The above results and analyses relate only to the experience of East Java. It would be useful to carry out evaluation studies both on East Java and also in Medan to establish the contribution of the levy-grant scheme to the creation of new skills, employment creation, and the costs of the program.

C. EXPERIENCE OF NICs WITH LEVY-GRANT SCHEMES

6.49 There are substantial differences in the training systems of the Asian NICs (Box 6.5). Many have tried a levy-grant scheme. Some have retained it but all have reformed it over time. In Korea,

Box 6.5: In-Service Training in the NICs: There is No Single Training Policy Appropriate for All Countries

The experiences of Korea, Singapore, Hong Kong and Taiwan show that the relationship between education and in-service training changes over time as a result of economic growth and diversification. Three development stages can be distinguished from the perspective of training.

In the first stage, literacy rates rise with the spread of primary education. As the economic structure is characterized by mainly low-value added activities (garments, textiles, food, electronics) the need for elaborate in-service training programs is small. Indonesia is at this stage.

In the second stage, as economic structure becomes more sophisticated and diversified with the addition of new industries (chemicals, shipbuilding, financial services), the demand for more elaborate in-service training grows. All four NICs were at this second stage in the mid-1980s but there was significant variation among them in the support given to in-service training by the government, trade unions and employers.

In the third stage, the growing importance of high-value added activities (computers, industrial electronics, precision tools, engineering and consultancy services) creates a need for a larger number of highly-educated workers as well as a highly developed and specialized system of in-service training. The NICs have entered this third stage with substantial differences in their in-service training programs. Hong Kong has a laissez-faire, privately-based system. In Singapore, with its interventionist approach, in-service training is a lifelong concern of firms and workers. South Korea and Taiwan have extended support for in-service training but less comprehensive than Singapore.

There is no single training policy-mix for all countries. The legislative framework is comprehensive in Singapore and Korea. Korea requires employers to provide specific amounts of in-service training but the usefulness of such policy may be less than optimal. By contrast, Singapore does not stipulate a minimum amount of training but provides incentives (through grants and specialized services). Until its reform in the late 1970s, the system benefited educated workers and large firms. In Taiwan, the Government is not directly or substantially involved in training. That is undertaken by small- and medium-sized firms and Government enterprises.

Sources: Salome and Charnes, 1988; Tzannatos and Johnes, 1996

complicated legislation aims to promote in-service training. The legislation affects firms employing 150 or more workers (compared to the threshold of 25 workers in East Java). Firms are required to submit to the Ministry of Labor a training plan each year. If training plans fall short of a critical number determined by the Ministry, then a tax based on the wage bill is imposed on the firm. Over time, an increasing number of firms have preferred to pay the tax rather than train their workers, and this practice does not appear to have been discouraged by the Government. The percentage of workers employed by all large firms who are required to receive training in any given year - the so-called training coefficient - has declined over time from a peak of 6.7 per cent in 1979, to 1.73 in 1985. By 1992 some 80 percent of firms (predominantly smaller companies) preferred to pay the tax rather than train their workers. The corresponding percentage in 1977 was 33 per cent. This suggests that the benefits of training, even when the direct training costs are fully subsidized, do not always offset the opportunity cost of production which is lost due to the time spent learning rather than producing. This is more so in small firms.

6.50 In Singapore technical vocational education and training is financed through a 1 per cent tax imposed on companies using as tax base the wages paid to low paid workers (this contrasts with the East Java scheme where capital intensive and management intensive firms pay higher rates of levy). The levy is deposited in a dedicated account, the Skill Development Fund, unlike in Indonesia where the funds become part of general provincial revenues. Firms may apply for grants which reimburse up to 90 per cent of the costs of their training programs. Under this scheme, firms have two incentives to train their least skilled workers: first, they receive funding from the Skill Development Fund, and secondly, they reduce the tax base upon which contributions to that fund are made. However, the main beneficiaries of the scheme have been larger firms. Almost all large firms have received funds from the scheme but only a minority among small firms has benefited from the scheme.

6.51 In Taiwan, legislation in the form of a tax and subsidy scheme similar to the Singaporean scheme was implemented briefly in the early 1970s,

but was scrapped in 1974 as a casualty of economic recession.

6.52 The experience of the NICs with legislation and tax incentives is therefore mixed. Tax-subsidy schemes to finance in-service training have clear advantages in that they internalize externalities due to general human capital acquisition if financed by employers. Some potential disadvantages are also apparent, however. The first is that the scheme raises the cost of labor, thereby generating unemployment. It is therefore subject to the same criticisms leveled against employment taxes. A second potential disadvantage of tax-subsidy schemes is that spending on training becomes essentially an arbitrary sum determined centrally. Further, by awarding grants on the basis of the quality of the proposed training programs, the authorities can exert undue influence on the nature and standards of training or favor bigger firms.

6.53 Tax incentives to provide training can only be effective when a country already has in place a well developed tax system which ensures the efficacy of mechanisms to preclude tax avoidance. A further problem is that levy-grant schemes have a high element of dead-weight. Take-up of the subsidies is concentrated amongst large firms, including multi-national enterprises. In many cases these companies receive a subsidy to provide training which would have been provided even in the absence of the incentive scheme. At worst, the augmentation of human capital may not be significantly enhanced by the scheme, while the introduction of the tax-subsidy distorts price relativities thus creating a welfare loss.

6.54 Mechanisms designed to stimulate the provision of training by the private sector are not intended to raise revenue for the exchequer. When surpluses are made by levy/subsidy schemes as in Singapore (or, equivalently, when Korean firms pay tax penalties in preference to training their workers), a failure in the operation of the scheme becomes apparent. A strong case can be made for allowing flexibility across industries in the setting of levy and subsidy

rates (Middleton et al., 1993). Against the benefits of such variation, the welfare cost associated with differential output responses across industries to a distortionary tax/subsidy regime should be weighed. A further problem is the time taken to undertake training — even when training costs are paid through a government operated tax-subsidy system, the opportunity costs in terms of lost production can discourage many firms, especially small ones, from pursuing training opportunities for their workers.

D. CONCLUSIONS AND RECOMMENDATIONS

6.55 The view that: “if the work force had more skills, then production systems would be more or less automatically upgraded and more sophisticated products would be produced” is largely based on a reversed relationship between skills and technology. Indonesia can still rely on its comparative advantage for some years ahead. Chapter 1 showed that labor-intensive production, as long as it is profitable and results in growth (and by extension investment), does not inhibit a country from moving up to higher technology/value added production. The skills upgrading can occur through new investment (some of which uses up-to-date technology). In addition, labor-intensive production does not mean that Indonesia is precluded from exporting any product it can produce profitably — only the overall labor contents of exports is greater than that of imports. A premature shift into capital intensive and skill intensive industries will slow down growth and employment generation. It can also worsen the income distribution and reduce the already low demand for education among the poor. Still, the analysis in this chapter shows that in-service training is not insignificant. If firms are forced to provide too much in-service training at their cost, they may engage in token training activities or use it as a pretext for paying low wages since benefits are relatively low. This would result in a social loss, as resources will be used for training that has little

practical significance, and will reduce workers’ welfare.

6.56 Employer-provided training is an important mechanism for the creation of skills. Being demand driven, it is highly relevant to production. It is also cost-effective. It is the kind of training that produces the occupation-specific skills that Governments have difficulty to forecast and find expensive to provide through vocational/technical education. It is therefore important not only to preserve this mechanism of skills creation but to enhance it.

6.57 Policies that can foster employer-provided training are, *first*, those that equip new recruits with sufficient pre-employment general skills upon which in-company specialized training will build. *Second*, tax relief on training expenditures is justified, as investment in skills is a company expenditure on productive resources very much like that on physical capital. *Third*, policies of internal wage flexibility are important as employer-provided training would be less if wage regulations restrict opportunities for cost-sharing between employers and workers, even though the beneficiaries of this training (workers) would have been prepared to do so.

6.58 The East Java Levy-Grant Scheme is compulsory even among smaller firms (those employing as few as 25 workers). It is run almost entirely by the public sector. The training needs are determined by the public sector and offered to the companies without their input. In short, the training is Government-driven but privately funded. The lessons from Korea, Singapore and Taiwan are not encouraging either. But if the scheme is maintained in Indonesia, its design could incorporate the following features:

- First, responsibility for management of the scheme should be given to the private sector. This will ensure that the scheme is responsive to the needs of employers and that administration costs are kept low.
- Second, funds collected should be kept in a dedicated account and should not be part of general government revenue. This will help retain employers’ confidence, and funds used for the purpose for which they are collected.

ENDNOTES

¹ In the mid-1970s estimates for employer-sponsored in-service training in the US ranged from \$2 billion to \$100 billion (Smith, 1983). More recent estimates for the mid-1980s suggest that employer provided formal training (in-house and off-plant) was around \$30 billion a year or around 1 percent of the payroll (Carnevale and Gainer, 1989). According to these estimates, another \$90 billion to \$180 billion was spent on informal training.

² The two surveys are described in World Bank (1991) and Dhanani (1992).

³ Mincer (1962).

⁴ Carnevale and Gainer (1989).

⁵ Hallak and Caillods (1980).

⁶ REDECON (1994: III-3).

⁷ JIKA (1994, 3.49).

⁸ Dhanani (1994b).

⁹ Dhanani (1995).

¹⁰ Tan (1983).

¹¹ Jakarta Post, July 20, 1993.

¹² World Bank (1991).

¹³ Kremer (1994).

Education and Training of Civil Servants

7.1 This chapter discusses in-service education and training of civil servants outside the education, health and defense sectors and parastatals. These “core” civil servants account for less than **OVERVIEW** half of all Government employees (1.6 million compared to 3.9 million). Still, identifiable education and training expenditure on the core civil servants alone averages at least 60 percent of public expenditure on tertiary education. These expenditures constitute at least 12 percent of the civil service salary bill and may well be more than 20 percent (the figures exclude training expenditures that could not be explicitly identified). If indirect costs of training are included (that is, salaries paid to civil servants while on training), the cost to the Government may well be greater than 30 percent of the salary bill. Usually, in-service staff upgrading averages no more than 1-2 percent of the salary bill (see Box 3.1; and Endnote 1, Chapter 6).

If indirect costs of civil service training are included, the cost to the Government may well be greater than 30 percent of the salary bill.

7.2 Multilateral and bilateral donors have been actively involved in upgrading the qualifications of the Indonesian civil service. This has included substantial project support for overseas fellowships, domestic fellowships, short-courses, seminars, tours, and technical assistance. In 1993/94, foreign funds for civil service education and training amounted to one-half the total expenditure on civil service education and training. The World Bank alone has spent more than US\$1 billion in the past decade on education and training of civil servants.¹ The dependence of civil servant training on foreign assistance often results in discontinuities that reduces the effectiveness of training.

7.3 With a labor force of more than 70 million and a student population of about 55 million, the above estimates suggest that spending on the core civil service education and training is disproportionate to its size (1.6 million). Furthermore, the

productivity effects of such training expenditure on the performance of civil servants have been weak. Project evaluation documents and consultant reports suggest that training has high costs, there is lack of control on quality, and it has low relevance to needs. Though training can contribute to skills development and influence the performance of the civil service, the overall recruitment, promotion and incentive system encourages that training be pursued for the sake of promotion (credentialism) or for the (private) benefits it yields from the additional specialized activities that can be offered in the open labor market (moonlighting). As a result, the civil service labor market is characterized by substantial excess demand for training — even greater than the demand of job seekers who are more likely to be in much greater need for training.

7.4 This chapter recommends that an efficient and cost-effective long-run

human resources strategy for the civil service should include the recruitment of applicants already possessing the level of education necessary to perform the required tasks, and that training should concentrate only on specific sector skills that are not readily available from the general education system. A comprehensive review should be undertaken that examines the social costs and benefits of the large numbers of in-house education and training institutions run by the various ministries/agencies for civil servants. Legislation is already in place that stipulates that educational institutions run by various ministries and agencies should provide programs that are not available in tertiary institutions under the Ministry of Education and Culture. This demarcation of duties should be enforced to avoid duplication, institutional rivalry, and undue competition in the labor

market in general and among job seekers in particular.

7.5 The chapter begins by providing an overview of the size, educational composition, structure and pay, and recruitment and promotion practices of the civil service (Section A). It subsequently turns to a description of the numerous types of civil service education and training institutions and activities (Section B), including an analysis of unit costs. An attempt is made in Section C to measure the total public expenditure on the education and training of the core civil service. This is contrasted to the large private benefits that accrue to the civil servant (Section D) and it is linked to the high incidence of training among civil servants compared to other workers in the labor force. This section also includes an analysis of the demand for training by civil servants based on SUSENAS 1992 data. Section E briefly discusses the current reforms (Government Regulations Nos. 14, 15 and 16) which intend to integrate job performance, training and career development more closely. The chapter concludes in Section F and suggests policy directions for the future.

A. CHARACTERISTICS OF THE CIVIL SERVICE²

SIZE

7.6 In 1995/96, the total number of civil servants (central and regional) reached 4 million employees. This represents about 20 percent of (non-agriculture) formal sector employment (defined as wage earners) or as much as one-third of employment in incorporated establishments (see Chapter 1, para 1.25). Teachers and other educators constitute the single largest segment of the civil service (46 percent). Health workers and the military constitute another 11 percent and the remaining "core" group of civil servants amount to approximately 1.6 million. Employment in the civil service has grown at an annual average rate of 1 percent in the last three years.

Table 7.1: Change in Civil Service Employment by Education Level 1987/88 to 1993/94

Education Level	Change in Employment
Primary	-152,224
Junior Secondary	-65,896
General	-6663
Vocational	-59,233
Senior Secondary	428,319
General	118,590
Vocational	309,729
Tertiary	225,949
Certificate/Diploma (DI-DIII)	77,624
Degree/Post-graduate (SI, S2, DIV-V, S3)	148,35
Total	436,128

Note: The analysis is based on 3.5 million civil servants in 1987/88 and 3.9 million in 1993/94.

Source: BAKN

EDUCATIONAL COMPOSITION

7.7 In 1993/94, 20 percent of the civil service had junior secondary qualifications or below, 61 percent had senior secondary degrees, and 19 percent were qualified at the post-secondary degree level (Annex 7.1). Compared to 1987/88, this represents an increase of 4 percent for those with post-secondary degrees, 2-3 percent for senior secondary, and a drop of 9 percent for those with junior secondary or below (Table 7.1).³

7.8 The above trend masks the fact that the majority of post-secondary recruits are taken up by the education and health sectors. Data on education profile of new recruits in 1994/95 shows that 85 percent of diploma holders (DI-DIII) were absorbed by the Ministries of Education and Culture, Health, Family Planning, and Religion (which were also teachers) (Table 7.2). For new recruits with SI degrees (university), 74 percent went to these Ministries. The rest of the civil service received 52 percent of the senior secondary graduates. Hence, the core civil service continues to recruit among low qualified applicants, as evidenced also from the

Table 7.2: Destination of New Civil Service Recruits by Education Level 1994/95 (% of total)

Ministry	SI	DII-DIII	Senior Secondary
Education & Culture	53	59	8
Health	4	-	39
Religious Affairs	10	4	1
Family Planning	7	22	-
Rest of Civil Service	26	15	52
Total	100	100	100

Source: BAKN

prevalence of in-service general education and training (see Section B below). This practice has less to do with the willingness of already qualified persons to join the civil service (the labor supply side) (see Table 7.6) and more with the way vacancies are created (the labor demand side) (see para 7.12).

STRUCTURE AND PAY

7.9 Positions are divided into three types: (a) structural positions (supervisory jobs with managerial responsibility over a number of staff), which consisted of 157,000 positions in 1993/94 (4 percent of total — with the highest structural positions, Echelon I, numbering 220); (b) functional positions (positions requiring any of 52 specialized skills the majority of whom are teachers, researchers, doctors, and paramedics), which constitute about 52 percent of the total; and (c) other staff (44 percent).

7.10 Civil servants in structural and functional positions receive various supplements to their base salaries. These supplements include family allowances, salary improvement allowances, structural or functional positions allowances, project allowance, rice allowance and attendance money. Supplements can increase significantly the base salary. For example, the structural position allowance comes to around Rp 100,000 per month for low echelon (IV) employees, and reaches approximately Rp 500,000 per month for higher echelon employees (I) (Annex 7.2). This is to compare to an average base salary of approximately Rp 100,000 and Rp 350,000 respectively for the two echelons (Annex 7.3). Finally,

there is a “portional” allowance given to those who hold a functional position.

RECRUITMENT AND PROMOTIONS

7.11 Upon joining the service, every civil servant is assigned a rank (golongan) based upon his/her highest level of education (there are four ranks, each with four sub-ranks).⁴ Promotions from one rank to the next occur (more or less automatically) after four years, with the possibility of jumping to a higher rank in two years if an increase in educational credentials has taken place in the meantime. New legislation was introduced in 1994 which intends to more closely tie promotions with education and training (see Section E below).⁵

7.12 Vacancies are typically filled through internal promotion that is heavily influenced by in-service training. Hence, job openings occur primarily at the low levels. Since positions are not specified in terms of required job tasks, the new recruits enter the service typically on the basis of educational background. The end result is that the government does not recruit “ready-

Box 7.1: Recruitment and Education and Training in the Ministry of Agriculture

In 1994, there was a large number of temporary (honorer) agriculture staff (about 25,000) who have been working for MOA for 10-15 years but who do not hold civil servant status. Projections for Repelita VI are based upon the target to absorb the present temporary staff by the year 2000. This affects the recruitment process: new job positions are not typically announced externally but are commonly filled by the temporary staff. As temporary staff do not often satisfy entry level requirements in terms of education, pressure is put on the training budgets to create opportunities to upgrade the staff to higher levels of education.

Source: “Civil Service Training in the Department of Agriculture - Indonesia”, J. de Bresser, November 1994.

made" educated or trained employees, rather it recruits them "raw" and develops them through in-house education and training institutions. Box 7.1 provides an example from the Ministry of Agriculture.

B. TYPES OF CIVIL SERVICE EDUCATION AND TRAINING

7.13 Training and education programs for civil servants are numerous and cut across the spectrum from (one-day) short courses to overseas degrees that can take up to 4-5 years. A typical civil servant, entering the service with a senior secondary degree (rank IIa), receives three weeks of pre-

service training. During her/his career, further training and education can be pursued in many ways such as short-term technical training in specific fields ranging from

one to twelve weeks each and which can occur several times in a tenure; functional training that would improve the ability of carrying out tasks requiring certain expertise or have autonomous characteristics; post-secondary degree education typically in one of the in-house institutions offering two to three years programs; an overseas education and training funded by a donor agency and, finally, pre-retirement training. Staff in the structural positions would in addition be selected for promotional training. These programs are classified below into two main categories: pre-service training and domestic in-service technical education and training.⁶

PRE-SERVICE TRAINING

7.14 Pre-service training (pra-jabatan) is provided to all recruits and, in theory, before they take up their duties.⁷ The implementation of pre-service training is decentralized to the Provincial Training Unit for the third rank and lasts for two months (compared to up to four

weeks previously). For the first and second ranks it is conducted separately by each government agency. Pre-service training is under the coordination of LAN (National Institute of Administration) which sets guidelines for the curriculum.

7.15 Pre-service training for the first and second ranks is divided into two components. First, a general component that takes up 45 percent of the training time and offers a broad understanding of the Government apparatus such as Pancasila, State Guidelines and the Basic Law of 1945. Second, a specific component that introduces recruits to the specificity's of the relevant department. In practice, the amount and type of training varies among ministries and depends upon availability of funds.⁸ The Ministry of Agriculture, for example, provided

its new recruits with the general component only in 1993/94, and of the 4,000 recruits, fewer than 1,400 received pre-service training, due to budgetary considerations. Sometimes, several years pass before a new recruit is offered pre-

The cost of providing pre-service training may be as high as 40 percent of the first year's salaries of new recruits.

service training.⁹

7.16 The average direct cost of pre-service training for the first and second ranks is Rp 100,000/participant. Assuming an annual intake of 50,000, direct pre-service training costs under current conditions come to approximately Rp 5.0 billion (\$2.5 million). Since training lasts for two to four weeks, three weeks' salaries at entry level (assuming at Rp 100,000 per month) adds another Rp 3.75 billion (\$1.9 million) in the form of indirect costs. Thus the ratio of pre-service training costs to the first year salaries of recruits amounts to 15 percent. But if under current plans the duration of training increases from two-four weeks to two months, the ratio training expenditure to the first year salaries of recruits can increase to 30-40 percent.

7.17 In 1994/5 LAN through the Provincial Training Unit coordinated the implementation of pre-service training for approximately 9,000 recruits at third rank. The average direct cost of pre-service training under Presidential Decree No.

5/1996 is Rp. 450,000 per participant. Assuming an entry monthly salary of third rank recruits of Rp. 180,000 (Appendix table A7.3a), the total costs of training come to Rp. 990,000 (Rp. 450,000 direct costs and Rp. 540,000 indirect costs). This gives a ratio of training costs to first year salaries of 46 percent.

7.18 These estimates suggest that pre-service training absorbs significant amounts of public funds. It is, therefore, important to ensure that such training is effective in raising the performance of civil servants. In addition, the Government can seek to fund pre-service training through savings achieved elsewhere rather than additional allocations. This report argues that such savings can be achieved by recruiting, whenever possible, already qualified applicants thereby reducing the need for subsequent extensive (and expensive) in-service training (see next section).

IN-SERVICE TECHNICAL AND FUNCTIONAL EDUCATION AND TRAINING (DOMESTIC)

7.19 The most extensive type of skills upgrading undertaken in the civil service is in-service technical education and training. This kind of skills development aims to increase the competency of employees in carrying out their duties and is offered usually by in-house institutions, whether they be the PUSDIKLATS (ministry-based education and training centers) or secondary schools and post-secondary institutions (PTKs) that come under the purview of the particular ministry/agency. Other in-service education and training for civil servants is offered by LAN at its own Center for Development of Education and Training in Management Techniques or the School of Public Administration (STIA).

7.20 *Technical training* can be taken by structural, functional or other staff. It covers a wide spectrum of skills, some of which are more specialized, but the majority of which are in general fields

(such as secretarial, management, administrative, computer operations). A listing of such programs produced over 700 different training programs undertaken by government agencies with a large degree of overlap.¹⁰ Functional staff attending such training accumulate credit points that trigger promotion when a specified number of points is reached. Design and implementation of the training programs has been left to the individual agencies.

7.21 Staff can participate in more than one technical training program per year. In the Ministry of Agriculture (MOA), among 1,923 staff in structural positions in 1993/94, 5,221 received technical training, an increase from nearly 2,000 the previous year and 1,000 in 1989/90 (see Annex 7.5). Among the nearly 37,000 employed in functional jobs in 1994, 30,607 received technical training, an increase from about 20,000 the previous year and 10,000 in 1990/91.

7.22 Capacity utilization of in-house educational and training institutions remains low. As in the case of public vocational centers offering pre-employment training for the private sector (see Chapter 3), in-house civil service training centers are similarly affected by

In-house training centers have been increasing over time as well as the number of instructors. Still, the centers remain underutilized, have high unit costs, and instructors turn to third-party funding.

budgetary restrictions and many turn to third party activities for additional funding. The trainers become managers of implementing training courses for external agencies and managers for dormitory facilities. An analysis of the utilization rate of the provincial in-service agriculture and fisheries training centers (BLPPs/BKPIs) under the MOA indicates that only 30-50 percent of the trainer capacity is being utilized for agriculture staff training.¹¹ Still, by 1993/94, the number of trainers in the 32 BLPPs/BKPIs nationwide had reached 388 by 1993/94 representing an increase of 32 percent during Repelita V. The analysis found that the use of the BLPP classroom facilities for training of other target groups was extensive.

7.23 The stated objective of technical training is to provide the necessary skills to participants so that they can carry out their tasks in the best way they can. However, training is likely to be pursued by civil servants for the sake of accumulating training "points" that trigger promotion. From the view of the Government this type of training should increase productivity and meet the needs of the service while promotions should be more the concern of promotional training. Yet, the number of training staff has been increasing over time despite the inability to fund even current training operations, as indicated by the low utilization rates of institutions offering such training. Given that much of the in-house provided technical training is in areas catered by the private sector (such as secretarial, management and computer skills), such training, when necessary for productivity increases, could be contracted out and in-house operations could be phased out.

7.24 *Technical education* (often referred to as official education) is carried out by (1) secondary schools run by individual Ministries and outside the purview of the Ministry of Education and Culture and the Ministry of Religious Affairs; (2) departmental post-secondary institutions (PTKs) and, (3) overseas institutions. In 1992/93, there were approximately 176 secondary schools under line ministries enrolling about 37,000 students and employing some 3,600 teachers (student/teacher ratio of about 10).¹² The Ministries which operate these schools include: Agriculture (with 132 schools), Industry (11), Communication (5), Social Affairs (9), Defense and Security (3) and others (18).¹³ While these schools take pupils from the general public, they primarily serve as feeders for subsequent recruitment into the civil service. The recent slowdown in growth of the civil service implies

that the expectations among students entering these schools are likely to remain unfulfilled.

7.25 The PTKs are tertiary educational institutions operated by the various ministries or non-departmental agencies, running parallel to the university system under MOEC.¹⁴ They can be academies, polytechnics or other higher education institutions. They offer from Diploma to Sarjana degrees (D1-D4, and S1-S2). Almost every ministry has such an in-house staff development institution (see Annex 7.6). As stipulated by the Ministerial Decree of MOEC in 1991 (No. 0686/U/1991), students of PTKs must be employees of the concerned ministry/agency. The decree further stipulates that PTKs must "produce graduates with ... qualifications not yet fulfilled by PTNs" (public tertiary institutions under MOEC). Over the years, there has been a tendency for PTKs to "upgrade" and provide higher level programs (e.g. from D3 to

D4), sometimes eliminating the lower level degrees, but some PTKs are not officially accredited by MOEC and their graduates do not have their qualifications validated by a state university.

7.26 The Ministry of Education and Culture

attempted a survey of the PTKs in 1995.¹⁵ The results, only half complete to date, suggest that there are at least 47 such institutions, excluding another 50 under the Ministry of Health (middle-level education for nursing, radio diagnostic, medical electrical engineering, etc.) and three under the Ministry of Security and Defense. Of the 40 PTKs that did report enrollment, the number of students was approximately 62,000. The PTKs employed about 2,200 full-time lecturers and 3,400 part-time lecturers. The number of supporting staff (administrative, technician, lab assistants, librarians and others) totaled approximately 3,800. Disaggregated analysis from the Ministry of Agriculture indicates that the annual unit cost of their PTKs (APP-Agricultural Extension Academy, and STP-Fisheries College) were about Rp 4.0 million, or two-and-a-half times the annual unit cost at a public university.¹⁶

The rapid expansion of tertiary education under MOEC has decreased the need for the civil service to produce its own graduates.

7.27 The MOEC survey also indicates that the growth of the PTKs has been rapid. In the early 1980s, there were 26 such institutions; by 1990, their number had risen to 40. Since then, four additional institutes were established; two Education and Training of Tourism Institutes under the Ministry of Tourism and Telecommunication, one in Education and Training of Road Transportation under the Ministry of Communication, and the Higher School of Home Affairs under the Ministry of Home Affairs. Future growth is also planned: LAN has obtained budgetary allocations for expanding its School of Public Administration (STIA) and BAKN (National Civil Service Administration Agency) is planning the creation of an additional institute for public administration.

7.28 The activities of different agencies involved in training are covered by Presidential Decree No. 34/1972 that stipulates that (a) the Minister of Education and Culture is in charge of and responsible for the management of general education and vocational training; (b) the Minister of Manpower for vocational training to the non-government sector; and (c) the Chairman of the National Agency for State Administration for the development and training and education of government officials. But, in practice, there is often no clear demarcation between higher education institutions run by MOEC and other Ministries. This duplication reduces the overall efficiency of the human resources development effort of the Government in addition to the fact that in-house institutions cater for civil servants only: there can be better qualified applicants among the labor force at large who have no access to tertiary education due to the mere fact that they are not civil servants. The ongoing expansion of in-house provided education is contrary to the general increase in the education attainment of the labor force. The need for the civil service to produce its own graduates is no longer obvious and, in any case, unsustainable from public budgets. As in the case of technical training (paras 7.19-7.23), technical education should be restricted to areas not covered by MOEC or private institutions.

7.29 *LAN Provided Training.* In addition to the technical education and training described above, LAN offers specialized management training at its Center for Development of Education and Training

in Management Techniques, the Functional Training Center and STIA. The curriculum includes policy analysis, public management analysis, project management, and planning for regional development. These are short courses offered to civil servants and employees of public enterprises. Until 1994/95, these courses were offered in-house by LAN. However, due to budget cuts, such courses are now conducted and financed by individual departments.¹⁷

7.30 LAN also provides degree and non-degree courses for civil servants (including employees of public enterprises) at its School of Public Administration (STIA). Total enrollment in 1994/95 was approximately 500 students up from 340 in 1992/93. Courses are offered at three campuses: Jakarta (60 percent of total number of students), Bandung (25 percent), and Ujung Pandang (15 percent). STIA offers SI and SII degrees in public administration, and short specialized non-degree programs covering executive secretarial skills, project management and personnel administration. Tuition charges to the sponsoring agency or student for the SI program were Rp 500,000 per semester and for the SII program reached Rp 4 million per semester in 1993/94. Despite the significant tuition fees, STIA estimates that this revenue covers at most 50 percent of its operational costs, thus relying upon government funding for the rest. In 1994/95, its DIP allocation was Rp 60 billion (US\$30 million).

7.31 The size of operating costs of LAN provided courses supports the conclusion arrived at earlier in the analysis of technical training and technical education. In-house provided training is expensive due to high overhead costs, difficulty to adjust course offerings to changing needs and under-utilization. This calls for a reduction in in-house training especially since the labor force at large is successively more educated, and the Government can recruit among better qualified applicants. The substantial savings from a reduction in in-house provided training can be used to increase civil service salaries and facilitate recruitment of better qualified applicants (although such measure may still be unneces-

sary as there is yet substantial excess demand for civil service jobs; see Table 7.6).

C. EXPENDITURE ON CIVIL SERVICE EDUCATION AND TRAINING

7.32 Training funds come from various sector and sub-sector allocations under the development (DIP) and routine (DIK) budgets.¹⁸ Allocations are channeled to different units within ministries/agencies and at different levels of government (national, provincial, district). The diversity of civil service education and training, incomplete records, under-reporting of training undertaken by departmental units, fluctuation of central funding and intermittent foreign assistance, makes calculation of reliable cost estimates difficult.

7.33 An attempt is made below to get an order of magnitude of this expenditure using two methods. The first is by tracking particular sector (sub-sector, program, etc.) codes in the budget explicitly designated for these activities. The second is by examining in-depth data from three Ministries (Public Works, Agriculture and Industry). Both methods revealed that substantial amounts are spent on civil service education and training, particularly when comparing them to alternative costs of human resources development (for example, a university education) or civil service wages and salaries. It is important to note that the numbers are minimum estimates.

7.34 *Budget Estimates.* In the 1993/94 budget, sector 9.2 (Official Education- Pendidikan Kedisasan) was designated for education and training of civil servants (for example, overseas

training of civil servants and in-house post-secondary institutions, PTKs, are funded under this code). In addition, sector 16.1.2 ("Program for Improving Efficiency and Control of Government Apparatus") contains expenditure for civil service training, although not exclusively (e.g. it includes "other administrative" expenditure).¹⁹ These codes refer to central government spending only (APBN). Figures for the regional budgets are available only for the Ministry of Home Affairs (MOHA) and at the provincial level (expenditures at the district level for education and training are very difficult to estimate).

7.35 Estimated expenditure on education and training for the core civil service alone approximated Rp 800 billion in 1993/94 (Table 7.3). For the subsector where data on foreign-funding was available (9.2), this reached more than 50 percent of the total.

7.36 A comparator to the expenditure on civil service education and training can be the expenditure on tertiary education since most of civil service recruits are qualified at secondary level and their skill upgrading has the characteristic of a post-secondary education. The ratio of education and

Table 7.3: Minimum Direct Expenditure on In-Service Education and Training of Civil Servants^{a/} (Selected Codes) Rp Billion

	1993/94	1994/95 (estimate)
APBN		
Sector 9.2	315	400
of which foreign-funded	163	127
Sector 16.1.2	398	352
APBD (Ministry of Home Affairs)	89	106
TOTAL	802	858
Memo Items:		
TOTAL as % of:		
Public Expenditure on Tertiary Education	59%	59%
Civil Service Wages and Salaries (net of pensions)	12%	11%
a/ Excluding Health, Education and Military Personnel		
Sources: Ministry of Finance, Bappenas, Ministry of Home Affairs, and Bank staff estimates.		

training to public expenditure on tertiary expenditures was approximately 60 percent in 1993/94. Alternatively, the expenditure on education and training of core civil servants comes to (at least) 12 percent of their wages and salaries. There are no significant differences between 1993/94 and 1994/95 except that the substantial decline in foreign funds is planned to be offset by a corresponding increase in domestic funds.

7.37 Not all spending on civil service education and training is captured by the above codes. There are at least two additional ways of financing this type of skills upgrading: First, through projects/programs in the APBN budget which are designated under the particular sector's code. An example is a project entitled "Human Resource Development in the Trade Sector", consisting of training, including overseas fellowships, of Ministry of Trade officials in the areas of planning, management and trade topics, including overseas fellowships. The project falls under sector 5.2.2 (Trade, National Business Development, Finance and Cooperation). Second, a significant amount of the funding of education and training institutions run by individual ministries is subsumed in the general allocation to the particular ministry. Additionally, the current estimates exclude the significant amounts spent for training education, health and defense personnel. Hence, the figures presented in Table 7.3 underestimate spending on civil service education and training.

7.38 The non-transparency of education and training expenditures can be demonstrated in the

case of the Ministries of Agriculture and Public Works. The agency formally responsible for agriculture staff education and training is the Agency of Agricultural Education and Training (AAET). However, the AAET does not manage the entire budget allocations for education and training. Directorates General, as well as, agencies/centers within MOA can also allocate parts of their budgets for staff training and decide how and where to implement the programs. They may not necessarily report this expenditure to AAET. In addition, provincial agencies which are not formally under MOA (such as the Dinas) can process funds for agriculture training through the APBD. In the case of the Ministry of Public Works, training allocations are made directly to directorates rather than through the PUSDIKLAT.

7.39 Another aspect of civil service training is its heavy reliance on foreign finance. This has two effects. First, it results in discontinuities that jeopardize the long-run benefits of training. Second, commitments already undertaken by the Government need to be met even if foreign assistance is no longer forthcoming. This may necessitate the reallocation of public funds from areas that have higher social priority. It is therefore necessary for the Government and donors to develop a national human resources strategy that will include both the public and private sectors. When a consistent framework is in order, foreign assistance would be better rationalized and fluctuations would be minimized.

7.40 *Ministry-based Estimates.* In depth examination of education and training activities and funding in three ministries suggests that the annual expenditure per employee (not trainee) ranges from Rp 500,000-Rp 900,000. Table 7.4 shows the estimates for these three Ministries.

7.41 These estimates suggest that civil service training is costly. Technical training undertaken in in-house institutions has high unit costs (for example, annual unit costs in the PTKs is about two-and-a-half times more expensive than at a public university). Overall APBN expenditure on training comes to around

Table 7.4: Direct Expenditure on Civil Service Training and Education: Selected Ministries 1994/95

	Annual T&E Expenditure per employee	as % of Wages & Salaries
Ministry of Public Works	900,000 a/	26
Ministry of Industry	500,000	15
Ministry of Agriculture	660,000 b/	14
a/ Excluding project workers.		
b/ Excluding honorer (temporary) staff.		
Source: Bank staff estimates.		

12 percent of wages and salaries but, as suggested by the ministry-level analysis, the ratio of training costs to remuneration can be in excess of 20 percent. These direct monetary costs of in-service training can underestimate the total costs to the Government as they exclude the opportunity (indirect) cost of training (wages paid/time spent while in training). To eliminate the non-transparency of education and training expenditures, LAN should develop systems that record the plans of individual government departments and agencies and, with BAPPENAS, it can assess how many resources are used for training across the public sector.

D. THE PRIVATE BENEFITS OF CIVIL SERVICE TRAINING

7.42 Training in the form of in-service education constitutes a substantial benefit to those who undertake it. Recent estimates bring the average civil service salary to about Rp 200,000 per month.²⁰ The present value of 30 years' salary at that level is Rp 23 million (assuming a discount rate of 10 percent per annum). This level of salary and discount rate are used in the calculations presented in Table 7.5.

7.43 As an illustration, for a high school graduate who attends two

Table 7.5: Gains of a Secondary School Graduate Who Joins Civil Service and Gets In-House Education

Level	Present Value of Benefits (Rp million)	As percentage of lifetime earnings
Diploma 1	4.2	18
Diploma 2	8.0	35
Diploma 3	11.4	50
Diploma 4/Degree	14.5	64
...and for somebody who goes on a 3-year doctoral scholarship abroad...		
Ph. D.	156.0	684
<i>Source: Bank staff estimates.</i>		

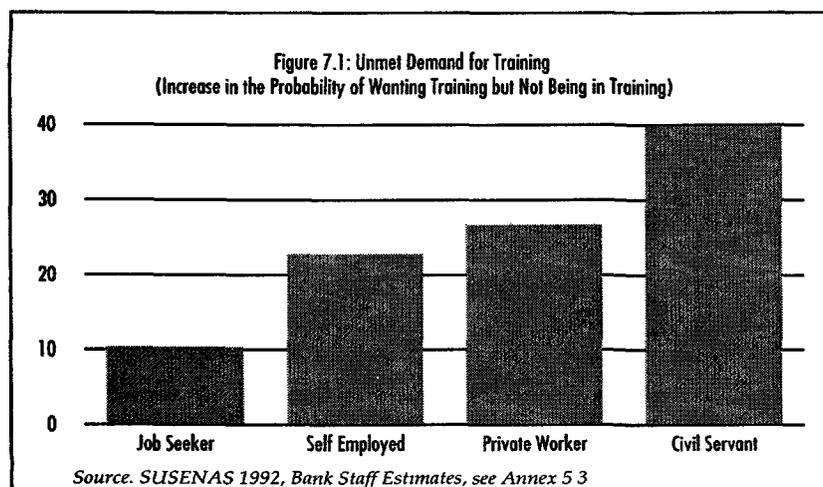
years of post-secondary education (D2), the present value of foregone earnings is Rp 4.4 million. This is the indirect cost of education. The present value of an annual tuition fee of about Rp 2 million (the average unit cost of a public university) is Rp 3.6 million. This is the direct cost of education. The indirect and direct cost of education calculated in this way

sum up to approximately Rp 8.0 million. Hence, from a high school graduate/job seeker's perspective, joining the civil service and pursuing in-service post-secondary education would save her/him Rp 8 million. Alternatively, the discounted total benefit of education acquired this way augments the lifetime earnings of a civil servant by 35 percent. And a civil servant who, upon joining the service, attends a three-year overseas doctoral program at the Government's expense of \$90,000, benefits to the (present value) amount of nearly \$78,000 (or Rp 156 million). This figure is about seven times his/her lifetime earnings as a civil servant.

7.44 In addition to the monetary gains of receiving fully paid education, civil servants enjoy lifetime job security plus other benefits (such as health and pension benefits). Also, the current low utilization rates of civil servants (which can be as low as seven weeks per year for staff in some functional positions) provides significant opportunities for moonlighting. The magnitude of these estimates suggests that the civil service has the characteristics of a "segmented labor market", in which "insiders" enjoy em-

Table 7.6: Percentage of School Leavers Who Would Like to Get a Government Job by Education Level (1992)

Education Level	% of school leavers
Primary	31
Junior Secondary	45
Senior Secondary	68
Certificate	48
Diploma	45
Degree	63
All	59
<i>Source: SUSENAS 1992, WB Staff Estimates.</i>	



those who are not in training though they want to be trained) indicates that being a civil servant increases the probability of wanting training by 40 percent (Figure 7.1; based on Annex 5.3). The high excess demand for training by civil servants (compared, for example, to only 10 percent for job seekers for whom the need for training is likely to be greater) can be attributed to the fact that civil servants are trained at virtually zero private costs.

ployment and pay conditions that can be severely out of tune with the rest of the economy.

7.45 The excess demand for civil service positions is documented in the SUSENAS 1992 survey: among students who intended to terminate their studies at the end of the academic year, 60 percent wanted to be employed in the public sector (Table 7.6). The percentage corresponds to approximately 900,000 job seekers wanting to become civil servants and contrasts with an annual intake of about 50,000 civil servants.

7.46 SUSENAS data can also be used to calculate the incidence of training among civil servants compared to other workers. This can show how resources for skills upgrading are distributed across the economy. Among male workers aged 26 to 55, one-in-five civil servants said that "he has received training" compared to one-in-twenty among the rest of workers.²¹ Also, among respondents, the percentage of civil servants who stated that they were currently in training was four times greater than the rest of the labor force.

7.47 Despite the fact that participation in training is prevalent among civil servants, it is precisely this group of workers who feel they have the greatest need for training. Econometric analysis of the unmet demand for training (the percentage of

E. CURRENT REFORMS AND PLANS

7.48 The Government introduced in October 1994 three Government Regulations (No.14, No.15, No.16) relevant to education and training of civil servants.²² The decrees intend to integrate job performance, training and career development, and to eliminate the practice of more or less automatic promotion every four years. They stipulate that: (a) staff would have to be trained before he/she can be promoted; (b) functional and other positions would be replaced by newly defined functional and technical positions; (c) a special allowance would be paid to every position; and (d) staff in structural positions can no longer hold concurrently other posts.

7.49 The impact of the proposed scheme cannot be inferred from the decrees until additional regulations (currently under preparation but which as of the date of this report have not yet been issued) operationalize the decrees. One indication, however, of how the decrees can be implemented may be inferred from the Ministry of Home Affairs (MOHA). In a letter to all Governors, Regents, and Mayors (December 15, 1994; No. 890/3519/SJ), the Ministry spelled out its training program for Repelita VI. Some of the relevant stipulations include: (a) participation in education and training is considered

“compulsory rather than as a right within MOHA and Regional Government”; (b) every unit within MOHA and Regional Government must allocate 15-30 days per annum per civil servant for education and training; (c) Regional Governments at the provincial and district levels must allocate (from APBD — regional budget) 10-15 percent of its employees wages and salaries for education and training, beginning 1995/96; and (d) all districts in 1995/96 must carry out a training needs assessment.

7.50 The effects of the proposed changes will depend on attention given to funding issues, the relevance of training to the Government’s needs and the incentive effects upon staff. The PPs were introduced without prior evaluation of their budgetary implications. The impact may be additional budgetary pressure if their implementation requires more training as promotions cannot take place unless the candidate has participated in a training program. On the other hand, it may induce less promotions in the system. The end result will depend on the relationship between the rate of new promotions to old ones, as well as on the change in the costs of training that would enable these promotions.

7.51 It is, however, possible that the reforms will increase training to civil servants. One indicator is the disproportionate (compared to the education sector as a whole, for example) amount for civil service education and training proposals in the so-called “Blue Book.”²³ Among the 1994/95 proposals, US\$1.2 billion appears for civil service education and training (and this excludes expenditures on training of education, health and defense personnel, as well as, project-related training). This can be compared to US\$1.9 billion proposed for the education sector as a whole (Table 7.7).

F. CONCLUSIONS AND RECOMMENDATIONS

7.52 The size and expenditures of civil service training amount to a parallel education system that caters to only a few civil servants

Table 7.7: 1994/95 Blue Book Proposals^{a/}
(US\$ Million)

Sector	Total	of which to be Foreign-funded
Civil Service Education and Training ^{b/}	1,244	880
of which is explicitly identifiable for CS	733	523
Education Sector	1,940	854

^{a/} For explanation of Blue Book, see footnote 15.
^{b/} For training projects in the Blue Book, see Annex 7.7.

compared to the Indonesian labor force at large. Civil service training attracts significant public funds (direct costs) and also deprives the government of the services of trainee while training lasts (indirect costs). Direct unit costs of in-service provided training are at least twice, and in some cases, five times higher than the costs in education institutions under MOEC. Overall, direct measurable costs are, at a minimum, 12 percent of the salary bill but can well be in excess of 20 percent. If indirect costs are included, then the cost of in-service civil service training to the Government may be more than 30 percent of the wage bill.

7.53 Recruitment of civil servants at relatively low qualifications (mainly secondary education level) subsequently necessitates in-house skill upgrading at high unit costs. Substantial savings can be achieved if recruitment takes place among already adequately qualified candidates and less is spent on in-house education and training.²⁴ The large expenditure on training is in many cases project driven and too dependent on foreign funding which result in discontinuities in training and short-lived effects.

7.54 Training can contribute to skills development and influence favorably the performance of the civil service. However, the system under which it is offered encourages training to be pursued for the sake of promotion (credentialism) or for the benefits it yields from additional specialized activities that can be offered in the open labor

market (moonlighting). This creates a "private" demand for training that has little relevance to social objectives. Civil service training constitutes a "perk" which acts to compensate for low nominal wage remuneration. While this may be beneficial for the individual, it is not necessarily the case from a social perspective (i.e. Government or society at large). The *raison d'être* of the in-house education and training institutions in the various ministries/agencies has been eroded with the rapid increase in tertiary enrollments, the reductions in budgets and restrictions in growth of the civil service.

7.55 The size and unit costs of civil service education and training can be reduced without adverse effect on the performance of the civil service. More specifically:

Recruitment policies. Only the best qualified applicants should be admitted. Improving recruitment standards should receive high priority.

Complementarities with the formal education system. General education should be left to the existing education system, and civil service upgrading should exploit complementarities, rather than compete with, the formal education system. There is need to review the role of the large numbers of in-house education and training institutions run by the various ministries/agencies. The review should examine to what extent in-house (ministry-based) education and training institutions would be better placed under the purview of the Ministry of Education and Culture to the extent that programs and courses are closer to general education and training than specialized civil service skills.

Incentive and performance systems. Rewards and career progressing should be based on job requirements and performance (what the recruits are expected to do) and not only credentialism (the educational level of the employee).

In-service training. Some training will always be required, but should cater only for specific skills that cannot be supplied by the general education and training system. It could last shorter periods than at present (e.g. few weeks at a time instead of consecutive months). This can minimize the adverse effects of long employment interruptions and provide opportunities for applying the learnt concepts and techniques. It can also create opportu-

nities for corrective action in subsequent training sessions. As a transitory measure and to support major new initiatives, such as decentralization, upgrading of permanent staff may be desirable. These needs may be particularly great in some regions and in certain specific skills. This is because it will be some time before the flow of new recruits with higher education qualifications impacts the existing stock. Whenever possible, such skills upgrading should be contracted out through competitive bidding. LAN should be the agency coordinating education and training of civil servants.

Information systems. Information systems should be developed that would enable BAKN to have accurate information on the number of civil servants and their activities for Government. At present there are many employees who receive double allowances or work in other places without legal assignment.

7.56 The elimination of the non-transparency and the reduction of unit costs of education and training expenditures would require the development of systems (by LAN and BAPPENAS) that would record the plans and expenditures of individual government departments and agencies. The development of such systems would be facilitated by a study on the role of training units in all ministries and non-ministerial agencies in supporting human resources development within the state apparatus. The study should also include a review of training courses that deal with career development and assess their contribution to productivity.

ENDNOTES

¹ This figure includes categories in loan documents called overseas training/fellowships/scholarships and in-country training". It does not include the probably equally large number for technical assistance.

² Wider civil service issues in Indonesia are examined in: Indonesia: Sustaining Development (World Bank, 1993c), and Indonesia: Civil Service Issues (1993d) (informal report).

³ A word of caution is warranted in interpreting data of civil service employment by education level: BAKN (National Civil Service Administration Agency), from which this data is derived, reports the educational level of the civil servant upon recruitment. It does not maintain a consistent record of subsequent upgrading of qualifications, hence these numbers probably underestimate the educational attainment of civil servants.

⁴ Civil servants with a primary or junior secondary degree join the service at rank I; senior secondary degree holders and D3 graduates enter at rank II; and S1-S3 join at rank III. For further discussion of the relationship between rank and education qualification, see Annex 7.4.

⁵ The legislation includes Government Regulations (PP) 14, 15). See section on Current Reforms at the end of the chapter.

⁶ Promotional training will not be considered explicitly as it pertains to specific skill provision of the civil service and not the general skills which are the main concern here. It should also be noted that following Government Regulation No. 14/1994, in-service training and education for government officials covers pre-service training, basic management training for junior staff and in-service training. In-service training is further divided into (1) management training for structural positions; (2) training for technical purposes; (3) training for functional purposes; and (4) training for core leadership.

⁷ The objective of pre-service training is stated in Public Law No. 14 Governing Education and Training of Position for Civil Servant:

"The pre-position education and training proposed is to conduct the creation of mental attitude, physical and disciplinary preparedness, including to fulfill the capability requirement, expertise and/or skill for the prospective civil servant."

⁸ According to the guidelines issued by LAN there are four components in pre-service training: improvement of dedicational spirit, behavior and discipline; acquaintance with administrative apparatus; recognition of the task to be carried out; and, recognition of the mission and function of the agency in which the civil servant works.

⁹ The curriculum of pre-service training for the third rank has four components as follows. First, 45 percent of training time is spent on enthusiasm for service (subjects on mental and physical discipline). Second, a component that covers administration tools. Third, introduction to insights. Fourth, specificity of the relevant department's functions.

¹⁰ Source: LAN (National Institute of Administration)

¹¹ Source: "Civil Service Training in the Department of Agriculture-Indonesia," J. de Bresser, November 1994.

¹² Data from MOEC: Indonesia: Educational Statistics in Brief, 1992/93.

¹³ These figures do not include the 214 secondary schools under Ministry of Health.

¹⁴ Under the purview of MOEC are the PTNs (public universities) numbering 53, and the PTSs (private universities), numbering more than 1,000.

¹⁵ Sub-Directorate of Tertiary Education Organization, Directorate of Academy Infrastructure, Ministry of Education and Culture, 1995.

¹⁶ Estimated annual recurrent per student cost in a large-size public university is approximately (1993) Rp 1.7 million (US\$ 800).

¹⁷ More specifically, the types of training conducted by the Center for Management Techniques in the National Agency for State Administration are (1) policy analysis; (2) public management analysis; (3) methods and techniques of project management; (4) planning for regional development programs; (5) leadership courses; (6)

completed staff work; (7) management of human resources development; (8) office management; and (9) other courses.

¹⁸ The separation between DIP and DIK is not clear in practice as the DIP is often used to make up shortfalls in recurrent expenditures (mostly salaries). The DIK is divided into five categories of recurring expenditure: 1) staff expenditure; 2) goods expenditure; 3) maintenance expenditure; 4) trip expenditure; and 5) subsidy/aid. The DIP contains funds for the planning, preparation and implementation of training.

¹⁹ In 1994/95, the coding was changed in an attempt to streamline and make such spending more transparent. The new sectors designated for expenditure on civil servants training are 11.2.02 that refers to "pre-service" training and 18.1.03 that refers to "in-service" training. The budget now consists of 20 sectors compared to 16 previously.

²⁰ "A Note on Civil Service Compensation in Indonesia," Dipak Dasgupta and Edison Hulu, 1994.

²¹ The definitions are not precise but it is the order of magnitude that matters.

²² According to Government Regulation No. 14/1994, training and education for government officials that deal with specifically technical areas will be conducted by the related technical agency; functional training and education will be implemented by the Coordinating Agency for Functional Positions.

²³ The Blue Book ("Project and Technical Assistance Proposals" Republic of Indonesia) is an annual list of project proposals compiled by Bappenas (Ministry of Planning) and presented to the donors at the CG meeting for possible funding. The projects listed in the book do not represent concrete plans of the Government. They constitute a "wish list" and should be considered in this light.

²³ In line with Government considerations, recruitment is not always carried out objectively and according to plans because there are too many interventions from outside parties, political considerations (for example, recruitment of civil servants from Irian Jaya and Timor Timur) as well as dishonesty in the implementation of recruitment and selection. In turn, these factors, which decrease the quality of new recruits, result in additional costs in the long run because it is not easy to dismiss an employee without strong reason. This problem may affect as many as 20-30 percent of employees but immediate solutions are difficult to implement given the considerable political impact that they may have which can be more damaging. To overcome this problem, the Minister of State Apparatus is using currently the "zero growth" policy" which is expected to become "negative growth" in the next decade.

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Determinants of the Manufacturing Unit Labor Costs

Define the unit cost of labor in dollars (ULC) as:

$$ULC = (W/V)(1/e)$$

where W is the manufacturing wage per worker, V is value added per worker, and e is the exchange rate (Rp/US\$).

The percentage changes ($\% \Delta$) in ULC are equal to

$$\% \Delta(ULC) = \% \Delta(W) - \% \Delta(V) - \% \Delta(e)$$

which can be rewritten as

$$\begin{aligned} \% \Delta(ULC) &= (\% \Delta(w) + \% \Delta(CPI)) - (\% \Delta(v) + \% \Delta(PPI)) - \% \Delta(e) \\ &= (\% \Delta(w) - \% \Delta(v)) + (\% \Delta(CPI) - \% \Delta(PPI)) - \% \Delta(e) \end{aligned}$$

where w is the real wage (in terms of consumer goods), v is an index of physical productivity of labor, CPI is an index of the cost of living, and PPI is an index of producer prices in manufacturing. The first term reflects the wage-productivity gap. The second term can be thought of as the domestic real exchange rate provided that CPI is the price index of nontraded goods and PPI is the price index of traded goods. The third term reflects changes in the nominal exchange rate.

The analysis in the Study is based on the following data:

Real wages: labor costs (total compensation) divided by total employment in medium and large manufacturing establishments.

Exchange rate: World Bank (1994a)

Consumer price index: national consumer price index combined for 17 cities before 1990 and 27 cities after.

Producer price index: wholesale price index in manufacturing excluding oil exports.

Changes in physical productivity: calculated by subtracting percentage changes in the manufacturing producer price index from percentage changes in value added of manufacturing output per worker.

Value added per worker: two series are used. First, the official CBS survey and, second, the revised (backcast) estimates of the Development Studies Program (USAID). Results based on the former series are presented in the main text (Chapter 1). Results based on the latter series are presented below together with the variables used in the estimation.

ANNEX 1.1

Year	Unit L cost 1	VA/W CBS 2a	VA/W DSP 2b	Aug CPI 3	PPI Manuf 4	Exchange Rate in \$ 5
1978	296	1506	1658	104	294	415
1979	370	1909	2006	132	388	623
1980	468	2539	2547	160	469	627
1981	563	3081	2964	178	523	632
1982	700	3182	3013	192	574	661
1983	816	3565	3257	218	672	909
1984	900	3639	3706	239	759	1026
1985	1015	4788	4305	251	788	1111
1986	1116	5527	5056	260	850	1283
1987	1219	6307	5763	288	980	1644
1988	1374	6720	6374	314	1069	1681
1989	1531	8474	7744	332	1138	1770
1990	1730	9454	8857	363	1207	1843
1991	2075	9995	9707	398	1330	1950
1992	2669	12508	12148*	420	1412	2030

*Estimate

Year	Wage-productivity gap		Consumer-producer price differential 2	Nominal exchange rate 3	Change in unit labor costs	
	CBS 1a	DSP 1b			CBS (1a+2-3)	DSP (1b+2-3)
1979	3.7	9.5	-5.0	50.1	-51.5	-45.7
1980	-7.8	-1.7	0.3	0.6	-8.1	-2.0
1981	-1.8	3.2	-0.2	0.8	-2.8	2.2
1982	21.8	23.4	-2.0	4.6	15.3	16.9
1983	7.8	11.7	-3.6	37.5	-33.3	-29.4
1984	11.5	-0.2	-3.3	12.9	-4.7	-16.4
1985	-20.4	-5.0	1.2	8.3	-27.5	-12.0
1986	-1.5	-3.5	-4.2	15.5	-21.2	-23.2
1987	-0.2	-0.1	-4.5	28.1	-32.9	-32.7
1988	5.9	1.9	-0.1	2.3	3.6	-0.4
1989	-14.3	-9.7	-0.7	5.3	-20.3	-15.7
1990	-2.2	-5.0	3.3	4.1	-3.0	-5.8
1991	13.9	10.1	-0.6	5.8	7.5	3.6
1992	2.9	2.9	-0.6	4.1	-1.8	-1.8

Repelita	Annual rate (%) of labor force growth	Labor force increase (millions)
VI (1994/1999)	2.62	11.1
VII (1999/2004)	2.25	10.8
VIII (2004/2009)	2.00	10.7
IX (2009/2014)	1.76	10.3
X (2014/2019)	1.46	9.3

	1985	1990	1992
Korea	4.0	2.4	2.4
Hong Kong	3.2	1.3	2.0
Singapore	4.1	1.7	2.7
Philippines	6.1	8.1	8.6
Pakistan	3.7	3.1	6.3
Sri Lanka	na	14.4	14.1
China (urban)	1.8	2.5	2.3
Indonesia (total)	2.1	2.5	2.7
Indonesia (urban)	5.3	5.9	5.8
Indonesia (rural)	1.2	1.3	1.5

Source: Indonesia: 1985 SUPAS, other years Sakernas; other countries ILO 1995.

	Minimum Wage	Male Wage	Female Wage
1972	17805		
1973	17360		
1974	18250		
1975	21366		
1976	25817		
1977	30713		
1978	33829		
1979	35610		
1980	38280		
1981	42731		
1982	44512	116615	56117
1983	44512	117893	59134
1984	42731	119171	62151
1985	41841	120449	65168
1986	40951	121727	68185
1987	40061	127027	77504
1988	40951	117021	72061
1989	38723	117566	74280
1990	48684	126690	76288
1991	64380	130505	81033
1992	na	143864	83348
1993	na	157057	109141

Source: Ministry of Manpower

Table A2: Annual Output (graduates) of Education and Training System in Indonesia
(years vary from 1992 to 1994)

	Public	Private	Total
Primary			
SD	3,214,938	256,455	3,471,393
Madrasah Ibtidaiyah (MI-religious primary)			368,500
Sub-total	3,214,938	256,455	3,839,893
Junior Secondary			
General (SMP)	1,056,177	520,209	1,576,386
Vocational (SKKP, ST)	17,852	1,639	19,491
Madrasah Thanawiyah (MT-religious junior sec.)			309,200
Sub-total	1,074,029	521,848	1,905,077
Senior Secondary			
General	376,083	365,801	741,884
Vocational	136,600	226,421	363,021
Commercial (SMEA)	70,351	126,542	196,893
Technical (STM)	46,153	93,019	139,172
Home Economics (SMKK)	10,672	2,930	13,602
STMP	9,424	3,930	13,354
Madrasah Aliyah (MA-religious senior sec.)			121,000
Sub-total	649,283	818,643	1,588,926
Diploma (SO or D3)			
Agriculture	773	619	1392
Technology	7,013	903	7916
Health	334	163	497
Mathematics and Science	1,094	1,343	2437
Education	7,361	3,202	10563
Social	3,240	33,032	36272
Sub-total	19,815	39,262	59,077
Sarjana (S1)			
Agriculture	7,036	4,355	11,391
Technology	6,895	10,119	17,014
Health	3,556	791	4,347
Mathematics and Science	2,183	1,701	3,884
Education	12,022	16,284	28,306
Social	13,231	77,284	90,515
Sub-total	44,923	110,534	155,457
Pasca Sarjana (S2/S3)	2,153	0	2,153
Sub-total	2,153	0	2,153
Sub-total Tertiary	66,891	149,796	216,687
PTK (Civil Service Universities)	54,000		
BLKs/KLKs	50,000		
Private Training Centers		1,500,000	

Source: MOEC

Comparison Between a Competitive Firm and a Firm Owned by the Government but Run by Its Employees

1. A competitive firm hires workers to the point where the wage (exogenous to the firm) is equal to the value of labor's marginal product.¹ This is point E1 in Figure A1. If the marginal product curve moves upward, either because demand for the firm's product increases or because the firm becomes more productive due to an increase in capital, then firm produces more (equilibrium point E2). These conditions ensure efficient outcomes in the sense that production (and, by extension, GDP) is maximized, prices are minimal and when the society demands more of the firm's product, the firm supplies more.

2. Assume that the status of the firm changes, the firm has some market power, and its employees are paid a fixed wage and but can engage in additional income generating activities without being concerned with investment. A reasonable assumption is that employees will try to maximize their additional income.² The equilibrium is at point E3 in Figure A2, where labor's average product is maximized. Compared to E1 such a firm produces less than the competitive firm.

3. Even worse, when the marginal product curve increases for reasons explained in (1), less is produced. This clearly inefficient/undesirable result is shown in Figure A3 as E4.

4. One issue to be answered is how an equilibrium point such as E3 or E4 can persist in the sense that employees of the "mixed ownership" firm should not be able to secure earnings above the competitive wage. This is true in the long-run but, not if the private/competitive supply of skills is controlled directly (through licensing) or indirectly (through the operations of public trading centers).

¹ The firm maximizes profits $(PQ - wL - rK)$ where P is the price of the firm's product sold in a competitive market, Q is the amount of product sold, w is the exogenous wage rate, L is the number of workers, r is the cost (rental price) of capital, K .

² In this case the firm maximizes income per worker $= PQ/L$. Neither capital nor the fixed wage affect the outcome both being exogenously determined.

Figure A1

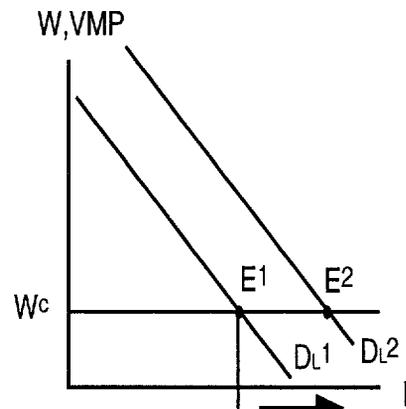


Figure A2

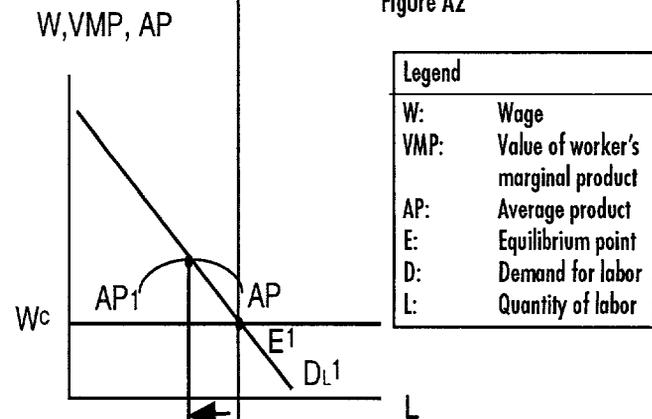


Figure A3

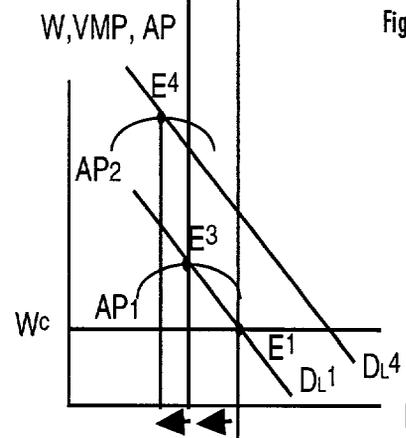


Table A3.1a: Allocations and Percentage Changes of Government-Sponsored Trainees in Selected BLKs/KLKs During Repelita V

Type Location	Allocations				% change		
	1989/90	1990/91	1991/92	1992/93	90/1	91/2	92/3
1 BLK Bandung	460	800	583	1630	74	-27	180
2 BLK Lembang	400	1140	947	900	185	-17	-5
3 BLK Garut	180	900	620	560	400	-31	-10
4 KLK Pandeglang	160	520	500	660	225	-4	32
5 KLK Serang	160	500	634	760	213	27	20
6 KLK Bekasi	120	820	740	660	583	-10	-11
7 KLK Bogor	120	580	680	800	383	17	18
8 KLK Tangerang	120	880	740	780	633	-16	5
9 KLK Sukabumi	120	580	552	620	383	-5	12
10 KLK Purwakarta	120	860	500	620	617	-42	24
11 KLK Karawang	160	800	578	660	400	-28	14
12 KLK Sumedang	140	560	640	720	300	14	13
13 KLK Kuningan	140	520	580	600	271	12	3
14 KLK Cirebon	160	540	620	620	238	0	15
15 KLK Tasikmalaya	120	840	760	760	600	-10	0
Total	2680	10840	9594	11350	304	-11	18

Source: MOM

Surveys of the Private Training Centers

Although there has been no comprehensive evaluation of the private training sector, two recent surveys provide valuable information and data on the private training centers in Indonesia. The first was a survey of 159 private training centers offering industrial skills programs and their students in 1992 (part of the Indonesia Skill Development Project, WB). This was followed up with field visits to over thirty private training centers in 1993 and 1994. The second was an Ministry of Education and Culture (Dikmas with collaboration of Balitbang) tracer survey in 1994 on private training centers offering computer and sewing courses.

THE 1992 SURVEY AND FOLLOW-UP FIELD WORK

The survey, covering 159 private training centers and their students, was conducted in three provinces, East Java, West Java and North Sumatra. Additional field work since then included interviews at another thirty individual centers. While industrial skills courses such as welding and automotive repair represent a relatively small number of centers, other areas were included in the study's definition of industrial skills such as electronics and sewing were far more common. Though the population studied was not designed to represent all the variation found among centers, it included a substantial range of center types in terms of size, sophistication, and course offerings. The survey of private training centers and students was conducted in August and September of 1992.

INSTITUTIONAL SURVEY

In the three provinces, the survey identified centers approved by either MOEC or MOM that offered training in an industrial skills area. All of these centers were included in the survey, with the exception of sewing schools and computer schools, from which a representative random sample was selected.

Data were collected by enumerators from MOM and MOEC trained by the study team and REDECON, a consulting firm responsible for data collection and tabulation.

The study achieved a high response rate as Table A5.1 indicates:

Province	Sample	Response	Percent of Sample
East Java	84	78	93%
North Sumatra	45	43	96%
West Java	52	38	73%
Total	181	159	88%

STUDENT SURVEY

Student data were collected within the same set of institutions. Enumerators sampled two classes at different times of day within each school to generate a sample of over 2,600 students.

THE 1994 MINISTRY OF EDUCATION AND CULTURE TRACER STUDY

In 1993/94, a tracer study of 253 persons was conducted in West Java, Central Java, Lampung, Yogyakarta, and Bali by DIKMAS (Directorate for Out-of-School Education in MOEC). The survey included interviews with MOEC officials, center staff and alumni. Topics covered were school operations, instructional methods, regulation, finances and employment outcomes. The study reviewed the centers' characteristics and activities from 1985 to 1993. The 1994 survey provides information about differences between the upper end of the market (computers) and the lower end (sewing). Despite the smallness of the sample, DIKMAS argues that the sample was representative of the areas it covered.

Table A5.1b: Identifiable Courses Offered by MOEC-Registered Private Training Centers

1 Sewing	4938	34.9%	29 Decoration	13	0.1%
2 Skin care	2373	16.8%	30 Beladiri	12	0.1%
3 English	2309	16.3%	31 Agriculture	11	0.1%
4 Hairdressing	1615	11.4%	32 Swimming	6	0.0%
5 Wedding ceremony	894	6.3%	33 Italian	6	0.0%
6 Catering	381	2.7%	34 Cooperatives	6	0.0%
7 Craft - electronic	275	1.9%	35 Yoga	5	0.0%
8 Embroidery	191	1.3%	36 Breeding	4	0.0%
9 Craft - Motor mech	166	1.2%	37 Maths	3	0.0%
10 Flowers	91	0.6%	38 First Aid	3	0.0%
11 PKK	84	0.6%	39 Juggling	3	0.0%
12 EXACT	81	0.6%	40 Craft - Building	3	0.0%
13 Gymnastics	80	0.6%	41 Entrepreneurship	3	0.0%
14 Music	72	0.5%	42 Chinese	3	0.0%
15 Japanese	68	0.5%	43 Craft - Gigipalsu	2	0.0%
16 General knowledge	57	0.4%	44 Craft - car mech.	2	0.0%
17 Dutch	57	0.4%	45 Dental care	2	0.0%
18 Flexibility	57	0.4%	46 Craft -electrical	2	0.0%
19 Arabic	47	0.3%	47 Human relations	2	0.0%
20 German	44	0.3%	48 Baby sitting	2	0.0%
21 Acupuncture	42	0.3%	49 Model	1	0.0%
22 Learning Consultant	27	0.2%	50 Anggar	1	0.0%
23 French	25	0.2%	51 Fitness	1	0.0%
24 Bahasa Indonesia	18	0.1%	52 Craft - laskarbit	1	0.0%
25 Art	18	0.1%	53 Tennis	1	0.0%
26 Dancing	16	0.1%	54 Gardening	1	0.0%
27 Massage	13	0.1%			
28 Mengriaskain	13	0.1%			
			All	14151	100.0%

Source: MOEC, 1994

Table A5.1c: Identifiable Programs Offered by MOEC-Registered Private Training Centers

1 Typing	2540	45.8%
2 Accounting	1861	33.6%
3 Computer	433	7.8%
4 Driving	303	5.5%
5 Secretarial	97	1.7%
6 General admin.	87	1.6%
7 Steno	57	1.0%
8 Hotel/tourism	47	0.8%
9 Export/Import	37	0.7%
10 Crafts - garments	13	0.2%
11 Photography	11	0.2%
12 Management	9	0.2%
13 Journalism	8	0.1%
14 Crafts - handicraft	8	0.1%
15 Crafts - industry	8	0.1%
16 Tax consulting	7	0.1%
17 Correspondence	4	0.1%
18 Banking	4	0.1%
19 Marketing	3	0.1%
20 Insurance	3	0.1%
21 Statistics	2	0.0%
22 Crafts - carving	1	0.0%
All	5543	100.0%

* This list underestimates training in that it refers to programs (not courses; for example, in Irian Jaya there are only 34 programs but 70 centers and 171 courses).

Sources: MOEC

Licensing and Accreditation Procedures for Private Training Centers under the Ministries of Manpower and Education and Culture

MINISTRY OF EDUCATION AND CULTURE*

MOEC does not register and classify centers, rather programs. If a center has more than one program, say it offers typing and sewing, the typing course may be in one category and the sewing in another. In practice, all private centers that apply get noted, registered and eventually enter the "C" category. Standards are minimal and any applicant making a serious effort will get his courses approved. The registration process at MOEC has four steps as follows.

- Step 1: Individual makes an application to the local office (Kecil) office. The office reviews the qualifications of the director and teachers, if there any, and makes checks to ensure the existence of a physical facility and minimum amount of instructional equipment and supplies. If these criteria are met, the center is "noted" ("Tercatat"), the office passes its recommendation to Kodya and the center can begin operation.
- Step 2: The Kodya office reviews the recommendation and visits the center. There is no official guide or check off list for the visits — the staff just know the criteria. If the school is approved, Kodya issues a "Letter of Registration" (and the center is classified as "registered"/"teridafar") and the center can operate for six months without further approval.
- Step 3: After six months the center is visited and reviewed again by the local office as well as the Kodya office. If every thing meets the criteria, which principally seems to consist of being in operation and following the MOEC provided curriculum, a recommendation is made to the Kanwil.
- Step 4: Kanwil then makes a visit to the school and evaluates it. If it meets the criteria it is put into the "C" category ("self-supporting"/"swadaya"). This allows the center to operate for a year. It may remain in the "C" category, being reviewed annually, unless it applies to move up to category "B" ("self-effort"/

"swakarya"). Eventually, the center can achieve status "A" (self-reliance"/"swasembada").

MINISTRY OF MANPOWER

Like in the case of MOEC no fees are charged at any stage of the licensing process by MOM. The procedure for registering with MOM is through the following steps.

- Step 1. The proprietor applies to Kandep and in an official form indicates the type of program(s) to be offered, names and qualifications of instructors, facilities, equipment and tools to be used in training, a tax registration number whether the owner would be an individual or a corporation.
- Step 2. Kandep staff visit the site, verify the information on the application and, everything is in order, they forward the application with the recommendation to the Kanwil.
- Step 3. The Kanwil issues a letter of registration which allows the center to operate for one year as "registered" (Teradaftar) . During the first year of operation, the registered center will be visited by Kandep and Kanwil staff. It must also report to the Kanwil the students who have completed their course and passed their examination.
- Step 5. After one year the center will be visited again by both Kanwil and Kandep staff to see if it is in operation and has maintained the program and facilities. If everything is satisfactory, the center is awarded accreditation (Diakui status) that is the only category other than registered.
- Step 6. Diakui status is good for two years. At the end of the two years, the center need to reapply to be reaccredited. The center is visited again by officials and, if it is still operating satisfactorily, it will be reaccredited.

* Licensing procedures are currently under review (see para 5.28).

The Demand for Training: SUSENAS 1992

In SUSENAS 1992 respondents were asked (in the following order) whether they had received training in the past, were currently in training or would like to get training. The answers were coded in mutually exclusive categories. If the respondent fell in more than one categories, the first category was recorded in the order stated earlier. For example, those who had received training and were also in training were classified as "have received training."

Respondents were also questioned what kind of training they had received, were receiving or would like to receive. Training subjects were classified as business, languages, computer and mathematics, crafts, home economics, athletics, arts, religious, and "other."

Finally, SUSENAS includes a series of questions relating to personal, education, labor force, location and so on. This information makes possible a fair degree of analysis of training by socio-economic and demographic character-

istics. However, there is no information on the length of training, whether training was institutional (publicly or privately provided) or employer-based. Neither was it specified whether those who would like to be trained, wanted to be trained in the near future or some other time nor was the willingness of respondents to pay for training recorded.

The information in the sample suggests that almost one million individuals were in training and three million wanted training in 1992. Demand for training is made of these two groups of individuals who, for the sake of econometric analysis, were assigned the value of one while the rest were

assigned the value of zero. This variable was subsequently regressed (in a probit equation) on the characteristics listed in Annex Table 5.3b.

Similarly, "excess" demand for training (broadly defined, as there is no reference to costs or the timing of training) was almost three-quarters of total demand. Respondents who were in training or wanted to be trained (but not currently in training) were taken to constitute the total demand for training. Those in training were assigned the value of "zero" and those not in training the value of "one."

Econometric results on the determinants of the demand for training and of the excess demand for training are reported below (Tables A5.3b and A5.3c) for men aged 12 to 29 years. There were no significant differences between men and women. This is also what Table A5.3a indicates.

Annex Table A5.3a: Excess Demand for Training
(number and as % of total excess demand)

Course	Men	Women	All
Computer/Math	453411	368411	821822
Language	295359	282430	577789
Crafts	440773	26992	467765
Home economics	39953	311004	350957
Business	173838	169469	343307
Others	151635	161856	313491
Religion	76915	99828	176743
Athletics	47070	23990	71060
Arts	26157	41122	67279
Literacy	16832	18731	35563
Total	1721943	1503833	3225776

Excess demand refers to those aged 10 to 29 years who want to be trained in a subject but are not currently in training.
Source: Calculated from SUSENAS 1992

ANNEX 5.3

Annex A5.3b: The Determinants of the Demand for Training							
Variable	Probit Coefficient	Standard Error	Marginal ^{a/} Effect(%)	Variable	Probit Coefficient	Standard Error	Marginal Effect(%)
Education				Personal Characteristics			
Primary	0.42260	0.15740	3.85%	Head of HH	0.14329	0.05464	1.31%
Junior Secondary General	0.59359	0.15887	5.41%	Child of Head of HH	0.01453	0.03370	0.13%
Junior Secondary Vocational	0.55827	0.17234	5.09%	Married	-0.07487	0.05482	-0.68%
Senior Secondary General	0.97424	0.16027	8.88%	Divorced	0.06670	0.17679	0.61%
Senior Secondary Vocational	0.82011	0.16192	7.48%	Age 13	0.07076	0.05177	0.64%
Certificate	1.03348	0.21449	9.42%	14	0.11491	0.05314	1.05%
Diploma	0.84515	0.18618	7.70%	15	0.12971	0.05415	1.18%
Degree	0.82113	0.17127	7.48%	16	0.07641	0.05685	0.70%
At School	0.22687	0.10256	2.07%	17	0.09778	0.05745	0.89%
Labor Force Status				18	0.08025	0.05936	0.73%
Employer	-0.14644	0.10435	-1.33%	19	0.08060	0.06430	0.73%
Other type of work	-0.00233	0.10299	-0.02%	20	0.02608	0.06733	0.24%
Self employed	-0.09609	0.06049	-0.88%	21	-0.06940	0.07526	-0.63%
Family worker	-0.13840	0.06610	-1.26%	22	-0.09847	0.07752	-0.90%
Own business	-0.27222	0.22238	-2.48%	23	-0.18340	0.08483	-1.67%
Government employee	-0.28727	0.10192	-2.62%	24	-0.20166	0.08693	-1.84%
Private employee	-0.14559	0.05506	-1.33%	25	-0.21002	0.08463	-1.91%
Job Seeker	0.15343	0.03544	1.40%	26	-0.19944	0.08987	-1.82%
Employment Sector				27	-0.37559	0.09878	-3.42%
Mining	0.23284	0.12682	2.12%	28	-0.35386	0.10548	-3.23%
Industry	-0.07884	0.06686	-0.72%	29	-0.32363	0.11042	-2.95%
Utilities	0.36147	0.19736	3.29%	Provincial Characteristics ^{b/}			
Construction	-0.19221	0.10210	-1.75%	Agriculture	-0.67412	0.77082	-6.14%
Trade	-0.02199	0.05493	-0.20%	Industry	2.38955	0.91485	21.78%
Transport	-0.03926	0.09543	-0.36%	Trade	-1.04597	1.18998	-9.53%
Finance	-0.07737	0.20524	-0.71%	Services	-0.92258	0.94116	-8.41%
Services	0.18478	0.06391	1.68%	Unemployment	0.08998	0.79766	0.82%
Other Industry	-0.07988	0.19348	-0.73%	Urban	-0.12745	0.02600	-1.16%
Income				Constant	-1.94200	0.80789	
Decile 2	-0.04518	0.05677	-0.41%	N=51530			
Decile 3	0.15739	0.05221	1.43%	Log Likelihood = -8210			
Decile 4	0.11573	0.05341	1.05%	Notes			
Decile 5	0.06566	0.05383	0.60%	a/ Percentage change in probability of being trained or wanting to be trained, if characteristic holds.			
Decile 6	0.10313	0.05336	0.94%	b/ Provincial characteristics: % of provincial labor force in agriculture, industry, trade or services; provincial unemployment rate; the respondent lives in urban area.			
Decile 7	0.19513	0.05218	1.78%	Source: Estimated from SUSENAS 1992.			
Decile 8	0.20121	0.05271	1.83%				
Decile 9	0.17918	0.05354	1.63%				
Decile 10	0.36935	0.05479	3.37%				

Table A5.3c: The Determinants of Excess Demand for Training

Variable	Probit Coefficient	Standard Error	Marginal ^{a/} Effect (%)	Variable	Probit Coefficient	Standard Error	Marginal ^{a/} Effect (%)
Education				Personal Characteristics			
Primary	0.3779	0.67348	12.78	Head of HH	0.0106	0.16800	0.36
Junior secondary general	0.4592	0.67737	15.53	Child	0.0104	0.10446	0.35
Junior secondary vocational	0.8051	0.71592	27.23	Married	0.4849	0.19777	16.40
Senior secondary general	0.0942	0.68188	3.19	Divorced	0.0836	0.65375	2.83
Senior secondary vocational	0.0971	0.68531	3.29	Age 13	-0.2608	0.16301	-8.82
Certificate	0.2155	0.78488	7.29	14	-0.1933	0.16522	-6.54
Diploma	0.1153	0.73238	3.90	16	-0.4997	0.16910	-16.90
Degree	0.0266	0.70527	0.90	15	-0.3319	0.16559	-11.23
At school	0.7716	0.10247	26.10	17	-0.2062	0.16934	-6.98
Labor Force Status				18	-0.1327	0.17507	-4.49
Job seeker	0.3062	0.10968	10.36	19	0.0467	0.18966	1.58
Self-employed	0.6745	0.24127	22.82	20	-0.0291	0.19886	-0.99
Government employee	1.1783	0.37295	39.86	21	0.2045	0.22780	6.92
Private employee	0.7896	0.18740	26.71	22	0.4078	0.24043	13.80
Employment Sector				23	-0.0699	0.25881	-2.37
Mining	0.9734	0.66362	32.93	24	0.3312	0.27452	11.21
Industry	0.1689	0.24956	5.71	25	0.1615	0.27978	5.47
Utilities	-0.6363	0.59377	-21.52	26	0.1794	0.30032	6.07
Construction	0.5567	0.46334	18.83	27	0.1418	0.33121	4.80
Trade	0.0106	0.17244	0.36	28	-0.2450	0.37359	-8.29
Transport	-0.2891	0.37598	-9.78	Provincial LM characteristics^{b/}			
Services	-0.1077	0.21959	-3.64	Agriculture	-2.5189	2.60752	-85.21
Income				Industry	0.5287	3.07262	17.89
Decile 2	-0.3094	0.21036	-10.47	Trade	-12.8440	4.25834	-434.50
Decile 3	0.0900	0.19608	3.04	Services	6.1667	3.30598	208.60
Decile 4	-0.0784	0.19670	-2.65	Unemployment	-0.6609	2.65037	-22.36
Decile 5	0.0770	0.20240	2.60	Urban	-0.3468	0.07783	-11.73
Decile 6	-0.1881	0.19340	-6.36	Constant			
Decile 7	-0.3353	0.18810	-11.34		2.6255	2.73265	
Decile 8	-0.1996	0.18696	-6.75	N=2,143			
Decile 9	-0.2895	0.18932	-9.80	Log Likelihood = -1068			
Decile 10	-0.9041	0.18803	-30.59				

Notes

a/ Percentage change in probability of not being in training, though want to be trained, if characteristic holds

b/ Provincial characteristics: % of provincial labor force in agriculture, industry, trade or services; provincial unemployment rate; the respondent lives in urban area.

Source: Estimated from SUSENAS 1992.

Employer Survey 1989 and Manufacturing Survey 1992

EMPLOYER SURVEY, 1989

A survey of approximately 150 enterprises in eight export-oriented subsectors of manufacturing was carried out in 1990 (World Bank 1991).

The questions addressed by this survey were: how do employers in export-oriented industries obtain the technically skilled and supervisory workers that they need? How do workers acquire such skills? And what impact does skill acquisition have on their experience in the labor market?

Two types of questionnaire were designed, one for managers of establishments and one for recently recruited skilled and supervisory workers, in selected manufacturing branches. The branches, selected on the basis of their recent and/or potential export performance, were textiles, garments, footwear, rattan furniture and other products, wooden furniture, plastic products, non-electrical machinery, and consumer electronics.

The Central Bureau of Statistics (BPS) was asked to select a sample of 150 establishments and 100 reserves from its directory of large and medium manufacturing industries. The frame for sampling was all large and medium establishments in the eight selected branches in Jakarta, Bogor, Tangerang, Bekasi, Bandung, Surabaya (including Sidoarjo and Gresik), and Medan (including Deli Serdang). The sample was stratified by branch and size-class of establishment but was otherwise random. Establishments employing 200 or more workers were deliberately over-sampled, on the

grounds that they would be most affected by changes in government policy on industrial training. The sample selected by BPS turned out to be heavily concentrated in Jakarta, Bogor, Tangerang and Bekasi (Jabotabek). 63 per cent of all establishments (and 65 per cent of large ones) were in Jabotabek, compared with 13 per cent (and 9 per cent) in Bandung, 12 per cent (and 7 per cent) in Medan, and 11 per cent (and 17 per cent) in Surabaya. The survey was carried out, by interview, in July-September 1990. The final sample consisted of 142 firms and 1900 skilled and supervisory workers.

MANUFACTURING SURVEY, 1992

The survey was conducted in August 1992 in three provinces, West Java, East Java and North Sumatra. Its objective was to gather information on manufacturing (i) skills requirements at professional, technician, skilled and semi-skilled levels in manufacturing firms and (ii) qualitative aspects of manpower development (such as current and planned actions of employers to remove skills constraints, if any, through firm-level training).

The sample consisted of 320 firms. All major (>500 employees) manufacturing firms in the three provinces were selected except for textile, garment and shoes industries in West Java where a 20 percent of firms was randomly selected. Below this size, firms were selected randomly.

Table A7.1: Indonesia Civil Service by Level of Education, 1987-1994

	1987/88	% of total	1988/89	% of total	1989/90	% of total	1990/91	% of total	1991/92	% of total	1992/93	% of total	1993/94	% of total
Primary School	600,020	17	599,213	17	546,277	14	545,676	14	547,074	14	449,060	11	447,776	11
Junior Secondary	407,460	12	403,246	11	393,661	10	398,460	10	402,902	10	349,343	9	341,564	9
General	195,780	6							211,258	5	192,877	5	189,117	5
Vocational	211,680	6							191,644	5	156,466	4	152,447	4
Senior Secondary	2,007,350	57	2,071,113	57	2,203,583	58	2,252,025	59	2,319,700	59	2,411,572	61	2,435,669	61
General	378,910	11							465,455	12	490,470	12	497,500	13
Vocational	1,628,440	46							1,854,245	47	1,921,102	49	1,938,169	49
Tertiary	514,820	15	554,043	15	627,764	17	645,525	17	680,450	17	732,284	19	740,769	19
DI-DIII	319,710	9	338,027	9	368,783	10	376,631	10	390,993	10	397,540	10	397,334	10
SI, S2, DIV-V, S3	195,110	6	216,016	6	258,981	7	268,894	7	289,457	7	334,744	8	343,435	9
TOTAL	3,529,650	100	3,627,615	100	3,771,285	100	3,841,686	100	3,950,126	100	3,942,259	100	3,965,778	100

Source: BAKN

Echelon	Before 1992	1992
Ia	166,000	500,000
Ib	138,000	400,000
IIa	69,000	250,000
IIb	63,000	200,000
IIIa	35,500	150,000
IIIb	28,000	125,000
IVa	25,000	100,000
IVb	21,000	75,000
Va	18,000	60,000
Vb	14,000	50,000

Source: Department of Finance

Table A7.3a: Estimated Civil Service Compensation			
Rank	Number (*)	Average Monthly Salary (Rp)**	
I	611,228		
Ia	154,391	78,000	Primary
Ib	186,471	90,800	Junior Secondary
Ic	137,149	105,000	
Id	133,217	113,000	
II	2,663,718		
IIa	1,051,171	116,100	Senior Secondary
IIb	679,616	120,800	Diploma (D3)
Iic	610,621	137,800	
Iid	322,310	145,000	
III	639,809		
IIIa	364,182	161,400	Degree (S1)
IIIb	154,829	179,400	Postgraduate (S2 & S3)
IIIc	80,233	185,600	
IIId	40,564	193,800	
IV	35,371		
IVa	20,548	204,600	
IVb	6,709	215,800	
IVc	3,878	242,000	
IVd	1,467	272,800	
IVe	2,769	306,200	
TOTAL	3,950,126	155,100	
<i>Source: (*) BAKN, and (***) Public Law No. 51, 1992 constructed from Dasgupta and Hulu (1994)</i>			

Relationship Between Education and Rank in the Indonesian Civil Service

Upon joining the Government, every civil servant is given a rank called golongan. The ranking system consists of four golongan and four sub-ranks (*ruang*) within each golongan. The placement of a new employee in the ranking system is based on his/her highest level of education. Every four years the employee is moved up one ruang regardless of his/her starting point. This is called promotion whereas, in fact, it only means a salary increase. In most cases the employee will continue performing the same type of duties after the so-called promotion.

As can be seen in the Figure below, the age of the newly recruited employee is determined by his/her education background: the higher the level of education, the older when commencing the civil service. Since a civil servant can only receive four promotions within the ranking system during a civil service career, unless the employee is promoted to a managerial or structural position or increases his/her educational credentials, he/she reaches the highest rank at a comparatively early age: 40 years for employees with university degrees and 34 years for those staff members with only high school education. The golongan/ruang IV/b-IV/e are reserved for structural job holders only.

This mechanistic promotion in rank disregarding the job performance both in terms of quantity and quality provides, for obvious reasons, no incentive and encouragement for the civil servants to become more effective and efficient in their jobs. To curb this situation the government is proposing a change as part of a new regulation (PP14); the new regulation states that civil servants

Figure A7.4: Relationship Between Education and Rank

Age	Education	Rank
		IV/e
		IV/d
		IV/c
		IV/b
	40	IV/a
	36	III/d
	32	III/c
37	28S2 and S3	III/b
34	33 24S1	III/a
30	29	II/d
26	25	II/c
34	22 21	D3 II/b
34	30 18	SLA II/a
30	26	I/d
26	22	I/c
22	18	SLP I/b
18	SD I/a

Example: A new recruit having obtained a D3 degree starts working with a ministry at the average age of 21 and is placed in golongan/ruang II/b. He/she reaches the highest possible position, golongan/ruang III/b, at the age of 37.

at the higher end of their ranks can only further raise in rank after they have moved into a higher structural position.

Table A7.5: Number of Training Participants in Ministry of Agriculture
(1989/90 - 1993/94)

	Type of Training	89/90	90/91	91/92	92/93	93/93
1.	Pre-Service Training	5905	3017	4397	4384	1362
	Grade 1	542	368	325	271	151
	Grade 2	4138	1824	2858	2856	803
	Grade 3	1125	825	1214	1257	408
2.	In-Service Training	27396	25028	31045	22189	36089
2.1	Structural Jobs	1380	2557	4378	2349	5482
a)	Promotional Training	450	450	78	223	261
	SEPALA	420	390	0	0	90
	SEPADYA	30	30	0	223	171
	SESPA	0	30	78	0	0
b)	Technical Training	930	2107	4300	2126	5221
	Admin. Techniques	300	510	540	1118	2848
	Non-Agr. Techniques	120	67	150	346	760
	Agr. Techniques					
	Foodcrops	240	540	1140	375	150
	Animal Husbandry	160	370	1210	282	13
	Estate Crops	90	404	479	5	1450
	Fisheries	20	216	781	0	0
2.2	Functional Jobs	26016	22471	26667	20470	30607
a)	Promotional Training	4275	11875	4379	744	0
	Basic	3716	11875	259	235	0
	Intermediate	0	0	0	284	0
	Special	559	0	4120	225	0
b)	Technical Training	21741	10596	22288	19726	30607
	Admin. Techniques	1743	0	150	313	1011
	Non-Agr. Techniques	530	0	310	1323	1021
	Foodcrops	6723	3995	10502	4413	17829
	Animal Husbandry	3976	905	4360	4611	4036
	Estate Crops	4656	3764	3534	5365	3343
	Fisheries	4113	1932	3432	3701	3367
	TOTAL	33301	28045	35442		

Source: Statistik Diklat Pertanian, Ministry of Agriculture

Table A7.6: Tertiary Education Institutions under Various Ministries in Indonesia
Number of Students and Lecturers (permanent and temporary)
(1995)

No.	Institution	Students	Lecturers	
			Permanent	Temporary
I. MINISTRY OF HOME AFFAIRS				
1.	Institute of Government Administration, Jakarta	1282	37	17
2.	Tertiary School of Home Affairs	2,417	103	40
	Subtotal	3,699	140	57
II. MINISTRY OF JUSTICE				
1.	Academy of Socialization Science	193		40
III. MINISTRY OF HEALTH				
1.	Middle-level Education of Nursing, Banda Aceh	300	27	33
2.	Middle-level Education of Nursing, Medan	159	15	20
3.	Middle-level Education of Sankelesing, Kebanjahe	300	16	11
4.	Middle-level Education of Nutrient, Lubuk Pakam	200	16	5
5.	Middle-level Education of Nursing, Padang	200	16	19
6.	Middle-level Education of Sankelesing Padang	146	21	24
7.	Middle-level Education of Nutrient, Padang	200	18	14
8.	Middle-level Education of Nursing, Jambi	215	16	41
9.	Middle-level Education of Nursing, Palembang	300	22	93
10.	Middle-level Education of Nutrient, Palembang	150	13	27
11.	Middle-level Education of Nursing, Tanj-Karang	200	21	39
12.	Middle-level Education of Sankelesing, Tanj-Karang	200	17	41
13.	Middle-level Education of Nursing, Center Jakarta	300	23	36
14.	Middle-level Education of Sankelesing, Jakarta	366	22	30
15.	Middle-level Education of Nursing (Anesthesia), Jakarta	108	17	50
16.	Middle-level Education of Nutrient, Jakarta	216	30	21
17.	Middle-level Education of Radiodiagnostic and Radiotherapy/Rontgen Organizer	200	14	4545
18.	Middle-level Education of Medical Electrical Engineering, Jakarta	250	16	11
19.	Middle-level Education of Nursing Wijayakusuma, Jakarta	NA	NA	NA
20.	Middle-level Education of Anesthesia, Bandung	300	17	80
21.	Middle-level Education of Nursing, Bandung	200	28	8
22.	Middle-level Education of Sankelesing, Bandung	200	21	20
23.	Middle-level Education of Nursing, (Teaching Program), Bandung	250	24	38
24.	Middle-level Education of Health Analyst, Cimahi	182	23	20
25.	Middle-level Education of Sankelesing, Purwokerto	300	14	16

No.	Institution	Students	Lecturers	
			Permanent	Temporary
26.	Middle-level Education of Nursing, Semarang	201	24	40
27.	Middle-level Education of Anesthesia Nursing, Semarang	29	5	30
28.	Middle-level Education of Rontgen Organizer/Radiognostic and Radiotherapy, Semarang	200	18	37
29.	Middle-level Education of Physiotherapy, Surakarta	300	22	47
30.	Middle-level Education of Nursing, Yogyakarta	80	16	34
31.	Middle-level Education of Sankesling, Yogyakarta	200	20	19
32.	Middle-level Education of Nutrient, Yogyakarta	200	25	35
33.	Middle-level Education of Nursing Sutomo, Surabaya	106	7	31
34.	Middle-level Education of Nursing, Surabaya	300	18	85
35.	Middle-level Education of Health Inspector, Surabaya	223	30	42
36.	Middle-level Education of Nursing, Malang	250	24	61
37.	Middle-level Education of Nutrient, Malang	400	18	27
38.	Middle-level Education of Nursing, Denpasar	200	15	41
39.	Middle-level Education of Sankesling, Denpasar	200	6	41
40.	Middle-level Education of Nutrient, Denpasar	119	20	56
41.	Middle-level Education of Nursing, Banjarbaru	191	9	29
42.	Middle-level Education of Sankesling, Banjarbaru	143	12	19
43.	Middle-level Education of Nursing, Manado	150	14	40
44.	Middle-level Education of Nutrient, Manado	200	12	20
45.	Middle-level Education of Nursing, Ujung Pandang			
46.	Middle-level Education of Sankesling, Ujung Pandang	200	11	34
47.	Middle-level Education of Nursing (Teaching Program), Ujung Pandang	104	18	64
48.	Middle-level Education of Physiotherapy, Ujung Pandang	200	17	21
49.	Middle-level Education of Nutrient, Ujung Pandang	150	17	28
50.	Middle-level Education of Nursing, Ambon	120	12	39
	Subtotal	9,908	857	1,662
IV. MINISTRY OF FINANCE				
1.	Higher School of Accountancy, Jakarta	5,809		
2.	Diploma Program of Budget	606		
3.	Diploma Program of Custom Office	648		
4.	Diploma Program of Taxation	1,264		
5.	Diploma Program of Pawnshop	401		
6.	Diploma Program of Actuarial	92		
	Subtotal	8,816	89	329

ANNEX 7.6

No.	Institution	Students	Lecturers	
			Permanent	Temporary
V. MINISTRY OF POST, TOURISM AND TELECOMMUNICATION				
1.	Education of Training of Tourism, Bandung	1,672	119	13
2.	Education of Training of Tourism, Bali	1,250	53	8
3.	Education of Training of Tourism, Medan	400	25	7
4.	Education of Training of Tourism, Ujung Pandang	502	15	11
	Subtotal	3,824	212	39
VI. MINISTRY OF INFORMATION				
1.	Education and Training of Multimedia, Yogyakarta	204	21	35
VII. MINISTRY OF TRADE				
1.	Education and Training of Meteorology, Bandung	138		34
VIII. MINISTRY OF COMMUNICATION				
A. Center of Education and Training of Land Communication				
1.	Education and Training of Traffic and Road Transportation, Bekasi	170	7	29
2.	Education and Training of Road Transportation, Tegal	62	2	13
3.	SATKA (Technical School of Train), Bandung			
4.	Education and Training of Water transportation, Palembang	64	6	6
	Subtotal	296	15	48
B. Education and Training of Sea Communication				
1.	Academy and Navigation, Jakarta			
2.	Education and Training of Navigation, Semarang	415	43	22
	Subtotal	415	43	22
C. Education and Training of Air Communication				
1.	Education and Training of Flight, Curug			
D. Education and Training of Meteorology and Geophysics				
1.	Education and Training of Meteorology and Geophysics, Jakarta	123	10	37
2.	Education of Observatory, Curug			
	Subtotal	123	10	37
IX. MINISTRY OF INDUSTRY				
1.	Education of Chemical Industry Technology, Medan	435	23	27
2.	Academy of Industrial Technology, Padang	246	12	58
3.	Academy of Corporate Leadership, South Jakarta	1,465	15	56
4.	Higher School of Industrial Management, Center Jakarta	628	14	58
5.	Academy of Analyses Chemistry, Bogor	488	19	46

No.	Institution	Students	Lecturers	
			Permanent	Temporary
6.	Higher School of Textile Technology, Bandung	688	32	66
7.	Academy of Leather Technology, Yogyakarta	377	20	29
8.	Academy of Industrial Technology, Ujung Pandang	123	10	37
	Subtotal	4,327	135	340
X. MINISTRY OF SECURITY AND DEFENCE				
1.	University of Pembangunan Nasional, Yogyakarta	10,851	290	223
2.	University of Pembangunan Nasional, Jakarta	5,277	225	167
3.	University of Pembangunan Nasional, Surabaya	5,081	295	148
4.	Higher School of Military Law, West Jakarta	258	10	86
5.	Higher School of Policy Academy, South Jakarta			
6.	Higher School of Navy Engineering, Surabaya	70	35	28
	Subtotal	21,537	855	652
XI. MINISTRY OF MINING AND ENERGY				
1.	Academy of Oil and Natural Gas (AKAMIGAS)	514	110	75
XII. MINISTRY OF AGRICULTURE				
1.	Higher School of Fishery, Jakarta	850	84	79
2.	Academy of Agricultural Extension, Medan	210	15	13
3.	Academy of Agricultural Extension, Bogor	624	21	14
4.	Academy of Agricultural Extension, Yogyakarta	206	27	28
5.	Academy of Agricultural Extension, Magelang	208	30	11
6.	Academy of Agricultural Extension, Malang	210	24	8
7.	Academy of Agricultural Extension, Gowa, Uj. Pandang	210	17	23
	Subtotal	2,518	218	176
XIII. MINISTRY OF SOCIAL				
1.	Higher School and Social Welfare, Bandung	1,864	90	33
XIV. MINISTRY OF MANPOWER				
1.	Education of MOM instructor, Bekasi			
XV. MINISTRY OF NATIONAL LAND AFFAIRS				
1.	Higher School of National Land Affairs, Yogyakarta	619	25	68
XVI. MINISTRY OF NATIONAL ATOM POWER (BATAN)				
1.	Education of Nuclear Engineering, Yogyakarta	129	24	60

ANNEX 7.6

No.	Institution	Students	Lecturers	
			Permanent	Temporary
XVII. STATE SECRETARIAT				
1. Center Bureau of Statistics (BPS)				
	Academy of Statistics, Jakarta	350	44	5
Institution of State Code				
	Academy of State Code, Jakarta	63	23	13
XVIII. INSTITUTION OF STATE ADMINISTRATION (LAN)				
	1. Higher School of Administration (STIA), Jakarta	2,053	135	
	2. Higher School Administration (STIA), Bandung	402	110	
	3. Higher School of Administration (STIA), Ujung Pandang	238	90	
	Subtotal	2,693	335	
Number of students, full-time and part-time lecturers for selected Official Higher Schools (PTK):				
	Students:	62,230		
	Full-time lecturers:	2,911		
	Part-time lecturers:	4,060		
Source: Sub-Directorate of Tertiary Education Organization, Directorate of Academy Infrastructure, Ministry of Education and Culture, 1995.				

1994-95 Blue Book Proposals for Civil Service Education and Training ^{a/}
Cost (US\$ m)

Sector	Subsector	Project	Total	Foreign	Local	Executing Agency	Comments
18	CIVIL SERVICE						
18.1	Civil Service						
18.1.03	Training & Education of Civil Service						
		Development & Modernization of Public Administration	23	20.7	2.3	LAN	
		STAIID II	132	85	47	BPPT	
		Dev'l of Training Facilities for Civil Aviation Academy	40.21	40.21	0	MOC	proposal includes proc. and retrofitting of aircraft build one rating school in Medan for sea standards
		Establishment of Rating Schools	24.2	24.2	0	MOC	
		Maritime Sector Training Program	32	32	0	MOC	
		Professional Human Resource Dev'l	74.6	3.3	71.3	MOF	
		Procurement of Training Vessel	36	36	0	MOC	includes procuring GT Training vessel train in-country and overseas: 54,100 cs, proc. of computers, etc
		HRD in Water Resources Sector	44	30	14	MPW	
		PHRDP	151.9	133.5	18.4	Bappenas (OTO)	
		Public Policy Analysis and Management Development	30.4	23	7.4	Bappenas (OTO)	in-country non-degree trg for 2250 officials of central, prov. local govt. in: industry, trade, transp, land admin, local/overseas; DIII, DIV, SI
		Public Works HRD Project	61.54	40	21.54	MPW	
		Training Prog. for HRD of DG of Human Settlements of MPW	33.42	24.75	8.67	MPW	train incountry & overseas
		Est. of Regional Center of Excellence in Ferries & Inland Water Transport	2.47	2.08	0.4	MOC	
		Subtotal 18.1.03	683.27	492.66	190.61		
18	CIVIL SERVICE						
18.1	Civil Service						
18.1.01	Dev'l of State Instit. Infrs. & Facilities						
		Upgrading Traffic Police System and Devices (III)	21.2	21.2	0	MOC	largest portion of project for CS training largest portion of project for CS training
		Crime Detection Devices	14	14	0	MOJ	
		Subtotal	35.2	35.2	0		
11	EDUCATION, NAT'L CULT, YOUTH & SPORT						
11.2	Non-formal Educ. & In-Service Trg						
11.2.02	In Service Training						
		STIA-LAN Development	50	30	20	LAN	12 lect. overseas for MA & Ph.D, new campus in Medan & Malang
		Subtotal	50	30	20		
02	AGRICULTURE						
02.1	Agriculture						
02.1.04	Dev'l of Ag. Resource, Fac'l & Infrastructure						
		National Agricultural Training and Education Project (NATEP)	84	6.2	77.8	MOA	
		Subtotal	84	6.2	77.8		

ANNEX 7.7

Sector	Subsector	Project Program	Total	Foreign	Local	Executing Agency	Comments
03	WATER RESOURCE						
03.1	Water Resources Development						
03.1.02	Supply & Management of Bulk Water	Capacity Building in Water Resources Sector Project	45.07	30	15.07	MPW	strengthening of DGWRD: HRD, training
Subtotal			45.07	30	15.07		
05	TRADE, NAT'L BUS. DEV'L, FINANCE & COOP						
05.2	Foreign Trade						
05.2.02	Export Development	HRD in the Trade Sector	15	15	0	MOT	training in trade & management topics; enhance insight of MOT senior officials on strategic planning; overseas fellowships
		Accountancy Development Project II	37	29.9	7.1	MOF	substantial portion for training
Subtotal			52	44.9	7.1		
08	TOURISM, POSTS & TELECOMM						
08.1	Tourism						
08.1.02	Dev'l of Tourism Product	Tourism Educ. & Training Inst. Dev'l	80	80	0	MOTPT	upgrading facilities and training staff at 4 tourism centers under PUSDIKLAT
Subtotal			80	80	0		
09	REGIONAL DEV'L & TRANSMIGRATION						
09.1	Regional Development						
09.1.03	Provincial Level Development	HRD in Planning & Direction of Regional Development Activities	27.65	27.08	0.57	MOHA	training for local staff on planning, S2 & S3 programs supported in country and overseas; prep of curriculum, modules, etc
09.2.02	Mobilization & Enhancement of Transmigration	Expansion of Project for Trg Centers in Transmigrant Sending Areas & Receiving Areas	4	3.4	0.6	MOTR	expand & strengthen facilities of 17 trg centers in 8 sending and 8 receiving areas
Subtotal			31.65	30.48	1.17		
10	ENVIRONMENTAL & SPATIAL PLANNING						
10.1	Environment						
10.1.02	Dev'l & Managt of Physical Environt	Regional BAPEDAL Dev'l Project	64.05	44.05	20	BAPEDAL	train staff at Tingkat I & Tingkat II regional offices
Subtotal			64.05	44.05	20		
13	SOCIAL WELFARE, HEALTH, WOMEN'S ROLE, CHILDREN						
13.1	Social Welfare						
13.1.01	Development of Social Welfare	Quality Improvemt of Social Workers' Training Centers	13	4	9	MOSA	train 12,400 social workers (p.a.) in 9 regional training centers; M.A. & Ph.D fellowships, non-degree for social workers
13.1.02	Social Rehabilitation & Services	Training Center for Disabled People in Bogor	18.6	16.6	2	MOSA	

Sector	Subsector	Project Program	Total	Foreign	Local	Executing Agency	Comments
		Improvement of Voc'l Rehab. Centers for Disabled People	41.5	32.5	9	MOSA	
	Subtotal		73.1	53.1	20		
16	SCIENCE AND TECHNOLOGY						
16.5	Aerospace						
16.5.01	Development of Aerospace Capabilities						
		Training Capacity Development for Monitoring Indonesian Environment	3.8	2.45	1.35	BAKOSURTANAL	post-graduate courses, MSc courses and teacher training courses
16.6.02	Improvement & Dev'l of Statistics						
		BPS Computer Training Center & Regional Computer Installation	33.92	26.78	7.14	BPS	
	Subtotal		37.72	29.23	8.49		
TOTAL PROPOSALS FOR CIVIL SERVICE TRAINING			1236.06	875.81	360.24		
of which codes 11.2.02 & 18.1.03			733.27	522.66	210.61		
%			59.32	59.68	58.46		
TOTAL PROPOSALS FOR EDUCATION			1941.21	848.85	1092.36		
<p>^{a/} Includes civil service training projects - classified as "Training and Education of Civil Servants" and sectoral HRD projects. Not all training components within projects can be distinguished at this stage, even tho they can be of substantial magnitude.</p> <p>^{a/} Not included are proposals for training of MOEC teachers and health manpower</p>							

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IMAGING

