

POPULATION GROWTH AND JOB CREATION IN TIMOR-LESTE

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Abstract

Timor-Leste began its independence as one of the poorest nations in the world. Substantial progress has been made thereafter but the challenges for future development are numerous. High population growth and modest growth of GDP means that per capita income is declining and that the extent of poverty is increasing. For this situation to change, income opportunities other than those provided by subsistence agriculture are needed. Considering the low level of education and the keen competition for skilled personnel this, however, is difficult. So far, it seems that most skilled workers are being absorbed by the public sector and that this is pushing up the already high skilled wage level. That, in turn, affects the competitiveness of the private sector negatively and acts as an obstacle to the creation of employment opportunities outside agriculture.

Key Words: Timor-Leste; Job Creation; Development; Industry

JEL Classifications: O10; O14; O15

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Introduction

Timor-Leste is a poor country, one of the very poorest in Asia. The expectations of improved living standards that prevailed around independence have not been met and incomes seem rather to have been declining. Poverty is widespread, various diseases are plaguing the population, and the level and quality of education are very low. Poor economic development is accompanied by increased criminality and political turbulence, culminating with the assassination attempt on President José Ramos Horta in February 2008.

Hence, it is clear that the challenges ahead are formidable for Timor-Leste. In a situation with no or little prospects of economic growth is it likely that interest groups will fight over the control of existing assets rather than focus on the creation of new ones. The obvious case here is oil: a tempting bait dangling in front of the different contenders for power. The experience from such countries as Venezuela eloquently demonstrates that oil funds of the Timorese (Norwegian) variety by no means constitute a guarantee against misuse (International Monetary Fund, 2005, p. 22; Lundahl and Sjöholm, 2008, p. 80). After all, the legal construction of the petroleum fund is such that it can be changed by a simple majority in the parliament. To avoid this temptation in a situation where the capacity of productive spending is low is a major political challenge.

Also, the political turbulence and the gang violence associated with it feed upon a growing number of unemployed youths. Unless more people get access to jobs and regular incomes, the crime gang problem will continue (World Bank, 2007b, 2007c). Unfortunately, it is difficult to get away from the main structural weaknesses of the country: high population growth, the lack of a modern private sector, the almost exclusive reliance on subsistence agriculture for employment and an oil sector that only serves to bring in revenue, not to create jobs. The latter is hence of little direct relevance in the short run. It is only in the medium and long term that a carefully monitored spending of the country's oil revenue may have any

effect. Hence, to lift broad segments of the population out of poverty requires job creation in a modern sector. However, the level of education is low and the educated tend to be absorbed by the public sector. The private sector is therefore facing a shortage of skilled labor.

The present paper analyses the job creation problem in Timor-Leste. It starts with an account of the population growth issue. We continue with a description of the employment situation in Timor-Leste. This is followed by an analysis of economic development in a dual economy of the Timor-Leste type. Finally, we make some simple calculations to illustrate the formidable challenge of job creation in Timor-Leste, discuss the main constraints to modern sector development, and end the paper with some concluding remarks.

Population Growth and Incomes

Economic Development since Independence

Against the background of the wholesale destruction of the Timorese infrastructure in 1999, it is unfortunate that after a successful recovery in 2001 the economic growth in Timor-Leste has been very volatile and rather poor (Table 1). The first two years after independence (2002-03) saw GDP contract by more than six percent annually, an extraordinary poor performance considering the low initial level of income and the massive internationally supported, still on-going, reconstruction effort.

--Table 1 about here--

The main reason for the negative growth of total non-oil GDP seems to be the scaling down of foreign personnel in international organizations in Timor-Leste. Large part of the UN output is included in the regular non-oil GDP figures. This is questionable since this output is not really part of local production. It does of course not mean that the UN will not affect the

'local' GDP but it will do so only as long as, for instance, employee salaries are spent in restaurants and hotels in Timor. Excluding UN operations decreases the GDP figures substantially but it also shows that there was no contraction in 2002 and 2003.

The situation improved in 2004 and 2005 with growth rates of more than 4 and 6 percent, respectively. The main cause of higher growth was a positive development in agriculture and increased public expenditures whereas the contribution of the modern private sector (industry and services) was modest.

The turbulence in 2006 had a strong negative impact on economic growth, despite the fact that the number of foreigners increased again. The economy contracted by almost 6 percent. It was mainly the private sector that shrank when riots and turbulence effectively put a brake on economic activities. Growth picked up again in 2007, mainly as a result of large increases in public spending, but the recovery of private sector activities had an impact as well.

Hence, the economic growth is relatively poor and, even worse, it is not sufficient to make up for the growth of the Timorese population. GDP per capita declined by 17 percent in nominal terms between 1997 and 2004 and by a staggering 55 percent in PPP terms (UNDP, 2006, p. 12).

Population Growth

When the results of the 2003 Demographic and Health Survey became available they contained a very fundamental finding: the fertility rate in Timor-Leste is the highest in the world with 7.8 children per woman in childbearing age (over the period 2001-03), far higher than the figures for other Southeast Asian countries (the second highest figure is that of Laos: 4.7). Worse yet, the figure appears to be on the rise. During the 12 months preceding the survey it was as high as 8.3 (Ministry of Health et al., 2004, p. 6). Translated into population

growth terms this implies that the Timorese population every year increases by 3 percent (World Bank, 2005a, p. 6), which in turn means that real per capita income is falling and presumably also that the extent of poverty is increasing over time. A population growth figure of 3 percent per annum means that the population will double in 17 years. It is hence obvious that the high fertility rate is a ticking time bomb from the point of view of poverty and poverty eradication. If anything, things will become worse over the next two decades unless something is done to seriously address the problem.

One consequence of the extreme fertility is that Timor-Leste has a very young population. *Table 2* shows the population in Timor-Leste by age and gender in 2001 and 2007. Almost 43 percent of the population was below 14 years of age in 2007, a very high figure despite a small decline since 2001.

---Table 2 about here---

Such a skewed age structure has several economic implications. One is that the need for public provision of for instance education is high, which has put heavy stress on the government. Another and perhaps even more important implication is that the need for job creation is very high, an issue that will be discussed below.

Birth Control

The high population growth brings us to the issue of family planning. Recent studies of neighboring Indonesia indicate that access to family planning may have drastic effects on fertility. ‘... moving from an environment of no family planning programs to a full complement of family planning programs being in existence since before the woman was born

would reduce fertility by almost one child per woman' (Angeles, Guilkey and Mroz, 2005, p. 195). Unfortunately, the prevailing attitudes in Timor-Leste towards family planning appear to imply that the high rate of population growth will continue in the foreseeable future. The fertility rate did not vary across subgroups among the women between 20 and 35, and education did not matter either. Higher wealth, on the other hand, led to a small reduction (from 8.1 among the poorest households to 6.9 in the wealthiest). Also, the median age for the first birth appears to be declining: over 24 years for women over 39, 22 for those between 30 and 39 and 21 for those from 20 to 29. Timorese women express a strong desire for many children. Their desired family sizes were the highest ever recorded in any demographic and health survey in the world. Only 17 percent of the women wanted no more children, the same figure as the one for the population in general. A mere 13 percent of the married women wanted access to family planning devices, however, not in order to limit the number of children (only 3 percent) but to space births properly (10 percent). Even so, only 75 percent of the total demand for family planning was met, and over 60 percent of the women and 70 percent of the men were completely ignorant about possible family planning methods. A mere 10 percent of the women used contraceptives (Ministry of Health et al., 2004, pp. 6-7).

Family planning is a difficult subject in Timor-Leste. Especially in the countryside, having many children is a sign of wealth, since the children can work in agriculture. The high birth rate was a concern for the Indonesian authorities in the 1970s and 1980s and it is possible that in later years this has been counterproductive, with common people sensing a hidden agenda behind the insistence on fewer children. Also, the Catholic church is firmly against birth control and it is capable of quickly mobilizing large numbers of supporters. This was demonstrated in April 2005 when there were thousands of people in street demonstrations for three weeks in Dili, demanding that Prime Minister Mari Alkatiri resign because of the government's decision to drop mandatory religious education from the national school

curriculum. Even if the influence of the church could somehow be neutralized, many observers feel that the problem would remain, since the prevailing attitudes towards family planning are very deeply rooted, as revealed by the Demographic and Health Survey.

A national policy for family planning is, however, now in place and has been approved by the council of ministers. The government will work closely with the church in the implementation. The idea is based on the concept of conscious parenthood. Prospective parents are to make decisions about the number of children. The government is under obligation to provide the citizens with the available information about methods for family planning, regardless of their religious background. Equipped with this information, the citizens can make informed choices.

The Employment Issue

Because of the high population growth, it is estimated that between 15,000 and 20,000 young Timorese enter the labor market each year (e.g. IFC and ADB, 2007, p. 49). Unfortunately, the alternatives when it comes to making a living are few. For instance, there are only about 37,000 paid workers in the formal sector (World Bank, 2007c, p. 8). Moreover, job creation has been almost non-existent except for some recent but insufficient short-term job program initiatives (World Bank, 2007a). Most Timorese are left with no other possibility than to try to eke out a meager existence from subsistence farming, a problematic situation considering the large surplus of labor in the agricultural sector (Lundahl and Sjöholm, 2007). We will come back to the mechanics of this below.

Table 3 shows the labor market situation in Timor-Leste. The figures support the conclusions from the discussion above and show that the new labor market entrants tend to stay in agriculture which has increased its share of the labor force from 81.6 percent of the

population in 2001 to 85.4 percent in 2007. Looking at the other sectors, it is seen that their share of the labor force has declined with the exception of public sector activities such as administration, health and education.

--Table 3 about here--

It is particularly interesting to look at the development in the industrial sector and in the sector consisting of restaurants, hotels and similar services. Industry has seen a large decline in relative employment: from about four percent of the population to one percent. Considering the importance of manufacturing as an employer and as an engine of growth in most dynamic developing economies, this is of course a cause for worry. When it comes to the fifty percent decline in relative employment in the formal private service sector, this is a development which is surprising. This sector is located mainly in Dili and to a large extent it services the foreign community. A continuing large foreign presence has unfortunately not enabled the sector to act as a significant creator of new jobs.

Declining employment shares in the modern sector are a major explanation of low incomes. They are also an important ground for criminality and political turbulence. Once such conflicts run out of control, it is often the availability of young men with little prospects of jobs and incomes that makes the situation dangerous. Youth crimes and participation in riots are due to the lack of alternatives and productive employment (Scanteam, 2007, p.6, World Bank, 2007b, 2007c). Unless jobs are created at a large scale, it is likely that political instability will continue.

It is hence problematic that unemployment remains high in Timor-Leste. The very concept of unemployment is of course dubious in a country where few can afford to be formally unemployed. Nevertheless, bearing this caveat in mind, the reported unemployment of 31.6 percent for young urban men (15-24 years old) must be considered a serious economic, social and political problem (Directorate of National Statistics, 2007, Table 7.3).¹

Incomes and growth are closely related: increased employment through an expanding modern sector will increase incomes, and high growth will generate new jobs through increased consumption and linkage effects. The experience from other developing countries in East Asia, such as China, Indonesia, Thailand and Vietnam, suggests that a consistent manufacturing based economic growth of at least about 7 percent is necessary for creating sufficient employment and poverty reduction. The government seems aware of the problem and aims for an economic growth of 7-8 percent over the next years. This is higher than what has typically been the case since independence (cf. Table 1).

Economic Development in a Dual Economy

As discussed above, unless a modern sector is developed in Timor-Leste, the rapidly expanding population can hardly be absorbed in productive activities. The non-existence of a modern sector of any significance is a result of historical conditions in combination with a current lack of skills and administrative capacity. The country had no industrial sector at the eve of independence. Excepting the government bureaucracy, there was in fact not much of a modern sector at all. It was hardly a coincidence that neither the book edited by Hal Hill and João Saldanha on Timorese development challenges published in 2001 (Hill and Saldanha, 2001) nor the report prepared by the World Bank the following year (World Bank, 2002) had anything to say about industrial development. There was simply nothing to write about.

The Lewis Model of Economic Growth

If we accept the hypothesis that the Timorese economy is more or less caught in a long-run low-income trap where the growth of the population tends to swamp that of the non-oil GDP, making sustained rises of the living standard difficult, the obvious question then is what can be done to break out of the trap. One of the most celebrated models of economic development is the one connected with the name Arthur Lewis (1954), the one of dualistic economic development. Let us for a moment forget the oil sector and concentrate simply on the employment-generating sectors: the agricultural one and the modern (non-agricultural) one.

--Figure 1 about here--

Figure 1, which depicts what happens in the modern, non-agricultural sector, summarizes Lewis' essential ideas. What it shows is the expansion of the modern sector. At the outset OA workers will be employed. Profit-maximizing producers increase employment to the point where the value of the marginal product of labor in the modern sector ($VMPL_N'$) equals the cost of employing it at the margin, i.e. the wage rate w_N^* . The value of the total output of the sector is GAO. The workers obtain OABC and the surplus GBC accrues to the capitalists in the form of profits. This surplus is invested in the modern sector. This increases the marginal product of labor and the VMPL curve shifts upwards to $VMPL_N''$. Employment expands to OD and profits to FEC. In this fashion the modern sector grows through the reinvestment of profits.

The labor supply curve S_{LN} does not have the traditional upward slope until after a certain point. Before that, the modern sector obtains its workers from subsistence agriculture at the

wage rate w_N^* . The rightward movement along the labor supply curve is a movement over time, and all it takes to obtain the given wage is that the population growth is rapid enough to balance the increased demand for workers as the modern sector expands. The workers leaving agriculture are constantly being replaced by new entrants in the labor market.

Economic growth in the sense of Lewis is precisely an expansion of the modern sector. This expansion is relatively fast since it can take place without driving up the wage rate. It is only when the sector has become so large that further expansion of it will swamp the new entry into the labor market that the supply curve starts bending upward in the conventional fashion. At this point the living standard of the workers both in the modern sector and in agriculture will begin to improve.

The Lewis model describes the interplay between the modern and the traditional sectors of an economy in a simple and elegant way and it highlights the role of investment when it comes to increasing the standard of living in an economy characterized by high population growth. The model tells an analytical story of structural change away from low-productivity agriculture and into high-productive modern pursuits, notably manufacturing industry.

The Lewis model may therefore be used as a pedagogical device when it comes to the problem of how to make the Timorese economy grow. It has three central features. The first one is the given wage rate, basically given by the value of the marginal product of labor in agriculture, or by the income level prevailing in that sector. The second is investment as the driving force of the expansion process, investment undertaken by an entrepreneurial class in the modern sector. The third is demand. The modern sector cannot expand unless there is a demand for its output, a demand which is high enough to make production worthwhile. Not least, the sector must be able to compete with imports. None of this is guaranteed in the case of Timor-Leste. Let us next proceed to an examination of how this sector works.

As previously said, the modern sector of the Timorese economy consists basically only of services: the mainly trade-related activities that serve the international community in the capital on the one hand and on the other hand the public administration, i.e. the state bureaucracy (see Table 3). The size of the latter may be taken as given. (After independence, a conscious decision was made to keep it at a much lower level than during the Indonesian occupation, and the government has managed to stick to this.)

The service segment is shown in Figure 2. The equilibrium wage w_s^* is given by the intersection of the labor supply curve L_S^S and the curve for the value of the marginal product of labor in services $VMPL_S$. This also determines the equilibrium employment level L_S^* . Given the supply curve, the wage level is determined by the size of the international community in Dili. It should be noted that the wage assumption which is fundamental to the Lewis model is not valid in this case. It is not possible simply to draw people out of the agricultural sector. The skills necessary in the urban sector differ from those needed in agriculture, i.e. service personnel is scarce, so the labor supply curve has the conventional upward slope.

--Figure 2 about here--

When the size of the international community increases, the $VMPL_S$ curve shifts upwards as a result of the increased demand for services, which drives up their price. This increases the wage level in the sector and expands employment there. In the short run, however, the labor supply curve is likely to be nearly vertical, so the main effect then is simply that the wage level will increase. This is borne out by the extremely high wage level in the Dili service sector, much higher than for example in Indonesia (Lundahl and Sjöholm, 2006, p. 12).

One of the main problems of the Timorese economy is how a non-service modern (industry or formal services) sector can be introduced. This problem is illustrated in Figure 3. Employment in the service sector is measured rightwards on the horizontal axis and employment in the the non-service modern sector leftwards. In the absence of a non-service sector, the entire labor force in the modern sector is absorbed by services at wage w^* . This takes place at point A, which is the intersection point between the VMPL schedule of the service sector and the short-run vertical supply schedule of labor in the modern sector, L_S^S . The problem of the non-service sector in Timor-Leste so far has been that labor productivity there is low, so low that it can hardly compete with the service sector (or with imported goods). This is represented by the $VMPL_N$ schedule. This is measured leftwards from the vertical labor supply line, and it lies below the $VMPL_S$ schedule in its entirety. The service sector continues to absorb the entire modern labor force.

--Figure 3 about here--

As Figure 3 also shows, there are two ways in which a non-service sector may be established. The first is when the $VMPL_N$ schedule is raised so that it begins at some point above A in the diagram, for example to $VMPL_N'$. This would create a new equilibrium in B, with both services and non-services in operation, dividing the labor force between them, at a higher wage than before, services accounting for the share extending from the origin O to the point given by a vertical line from B to the horizontal axis (not drawn) and the non-service component for the rest. The shift could be caused by increased demand for non-service products, causing a price increase. Hitherto, however, the lack of demand has acted as a constraint on modern-sector development in Timor-Leste. In a 2004 survey, 38 percent of the

formal and 40 percent of the informal enterprises reported that demand for their products was a constraint on growth (Das and O’Keefe, 2007, p. 21)

The upward shift of the $VMPL_N$ could also be caused by some kind of technological progress in the non-service sector. What springs to mind in policy terms is first and foremost infrastructure. If an industrial sector or a tourism sector is to be established, power, credit, a functioning judicial system, transportation etc. is needed.

The second possibility is that the supply of labor increases in the modern sector, say from L_S^S to $L_S^{S'}$. This moves the origin of the $VMPL_N$ schedule rightwards, from O' to O'' , i.e. to $VMPL_N''$. The new equilibrium in the labor market will be in point C, where the wage has fallen as a result of the increased labor supply. In policy terms we are talking about education and training of the kind that makes it possible for workers in the agricultural sector to move into the modern sector instead, mainly literacy and numeracy as well as some basic skills. More advanced knowledge belongs to the first case, since this serves to shift the $VMPL$ schedule upwards in the non-service sector.

There is also a third way in which a non-service modern sector may be created, but this way is both less likely and less desirable. It is through the eventual shrinkage of the service sector, for example via a shrinking of the international community in Timor and the consequent reduction of demand. This will shift the $VMPL_S$ schedule downwards and lower the wage rate, possibly to the point where an incipient industry or a tourist sector could begin to compete. However, this will not happen unless these sectors can also compete efficiently with foreign competitors. Otherwise, labor will simply be pushed out of the service sector and back into agriculture.

How Much Growth?

The importance of a dynamic modern sector from the point of view of employment creation can be seen with the aid of a very simple calculation exercise:

$$(1) \quad L_A + L_N = L$$

where L is the total labor force, A indicates agricultural employment and N employment outside agriculture, in the 'modern' sector. Taking changes yields

$$(2) \quad (dL_A/L_A)(L_A/L) + (dL_N/L_N)(L_N/L) = dL/L$$

The rate of change of total employment equals a weighted sum of the changes of employment in the two sectors of the economy where the weights are the shares of the sectors in total employment. *Faute de mieux*, we take the labor force growth rate to equal the growth rate of the total population, 3.2 percent per annum, and agriculture accounts for a little more than 85 percent of total employment. Thus, if agricultural employment is not to grow we must have that

$$(3) \quad 0.15(dL_N/L_N) = 0.032$$

i.e. that $dL_N/L_N \approx 0.21$. Employment in the modern sector must grow with 21 percent every year.

If we exclude the public sector and the unspecified 'other' category, and let the modern sector consist only of industry, wholesale and retail trade and restaurants and hotels, the employment share shrinks to 3.4 percent, and the required rate of growth is over 106 percent!

What does this mean in terms of growth of output? The employment elasticity of growth may be defined as

$$(4) \quad e_{gN} = (dL_N/L_N)/(dN/N)$$

the change in modern sector employment when the output of this sector increases. No estimates of this elasticity exist. Table 4 shows the output growth rates in the modern sector, broadly and narrowly defined, which are necessary if new entrants in the labor market should not have to go into agriculture, under different assumptions about the employment elasticity in the sector. As can be seen, even with very optimistic assumptions regarding this elasticity, the required rates are very high, and once we move downwards in the table the required growth rates quickly increase to completely impossible levels.

--Table 4 about here--

Developing a Modern Private Sector in Timor-Leste

Timor-Leste by and large lacked a functioning public administration when the country became independent. During the Indonesian occupation the government sector had been completely dominated by Indonesians, and they left in 1999. With the exodus of the trained officials followed the almost total destruction of all administrative systems and structures in the country. The consequence of this was that the United Nations Transitional Administration

in East Timor (UNTAET) had to start building a new administration from scratch, in a situation where the number of qualified people was extremely low: a mission impossible indeed.

A conscious decision was made to limit the number of civil servants to about one-third of the figure of the Indonesian period. This gave a number of slightly over 9,000 in 2000/01, around 14,800 when defense and police forces were added. This target proved to be too optimistic, however. When the *State of the Nation Report* was drafted the number of positions actually filled amounted to slightly over 10,900, i.e. the shortfall was over 25 percent (Planning Commission, 2002, pp. 37-38). Training and capacity development proved to be difficult as well (UNTAET, 2002, p. xxviii).

One serious obstacle to the development of a modern sector in Timor-Leste is that the price level is artificially high, especially in the capital. There is a special reason for that: the presence of a large expatriate community of thousands of persons – involved in the operations of the United Nations and other international agencies in Timor-Leste. As previously mentioned, this presence in fact meant that a dual economy had been created: on the one hand the traditional domestic subsistence economy, on the other hand an urban, aid-driven economy with a high purchasing power. The two were furthermore connected in an unfortunate way, not the one indicated by the Lewis model with its infinitely elastic supply of labor and constant wage rate. On the contrary (World Bank, 2002, pp. 17-18):

The large influx of international agencies, NGOs and other foreign employers – and the shortage of skilled local staff – resulted in an estimated quadrupling of wages, measured in US dollars. In the coffee industry, for example, unskilled farm labor earned the equivalent of \$0.90 per day in mid-1999 and now [2002] earns \$3.50. Civil service wages were set at rates starting at about \$85 per month, which was about three times the

average in Indonesia [...] The ... [most] serious problem with relatively high public sector wages (at the lower grade levels) is their demonstration effect for the private sector.

Thus, there was a clear wage element in the inflation process.

The most important short-run obstacle to the creation of a modern urban sector is the weak legislative and institutional structure. An IMF mission visiting Timor-Leste in March 2005 identified the steps already taken to remedy this (International Monetary Fund, 2005, p. 12). Thus, the land-lease legislation will encourage property rental and the new investment laws constitute a major step towards attracting investment. The establishment of a 'one-stop shop' for business registration will also be of great help. The enactment of the insurance law should do a lot to develop the insurance market and provide instruments that allow investment risks to be reduced. Finally, a regular dialogue is being established between the government and the business sector which will help to remove the most difficult legal and administrative obstacles to the development of the private sector.

The mission, however, also pointed to some additional reforms to be undertaken as quickly as possible (International Monetary Fund, 2005, p. 13). Business registration can be further streamlined and set-up costs reduced. A comprehensive land title system is needed to encourage land improvements and to allow land to be used as collateral. A regulatory framework for the incorporation of companies, mediation and arbitration is still lacking and the legislation on bankruptcy, which has been begun, needs to be finished. Insurance companies have to be licensed. Finally, a strong and independent judiciary is needed if contracts are to be enforced. Without this private economic activity will be impeded.

All these reforms fall into the area of legislation, and institution and administration building, and they can be undertaken by the government together with the parliament. All of

them, however, are merely necessary, not sufficient, measures. Even with all of them in place, there is no guarantee that a viable private modern sector will be established. For this, incentives that will bring forth entrepreneurs who set up firms are needed as well. The most powerful of all incentives is the market (Easterly, 2001). If a demand exists for a product that can be manufactured in Timor-Leste, chances are that firms will come into existence as well.

Whether a market exists is, however, an open question. Timor-Leste has opted for a very open economy. With the exception of some selected items, like cigarettes and alcohol, a uniform ad-valorem tariff of 6 percent is levied on imports, and no quantitative import restrictions exist (International Monetary Fund, 2004, p. 49). This means that both internationally and in the domestic market, Timorese producers will be subject to competition – strong competition – since Timor is located in one of the economically most dynamic regions in the world: East Asia.

A manufacturing sector may be difficult to develop for yet another reason. The level of education is low in Timor-Leste (Lundahl and Sjöholm, 2005, pp. 18-24), so the supply of skilled workers is small. At the same time, the public sector is making strong efforts to build capacity. As we have already seen, these efforts have not been completely successful, and there is still a shortfall. Virtually all the foreign donors are now making strong efforts to help the Timorese to close this gap. Funds are being put into capacity building to an increasing extent. This effort will continue for a number of years to come and this in turn has implications for the creation of a modern private sector. Skilled personnel will be drawn primarily into the public sector. The latter exists already and there are vacancies to be filled. The nascent private sector will have to compete with the government bureaucracy for people, there will be an upward pressure on the skilled wage level, and the unskilled will have to continue to go into agriculture. The public sector may crowd out the private one.

There is also a somewhat more subtle mechanism that may come into play. The public administration on the one hand serves as a ‘lubricant’ for the private sector, by providing law and order, by building physical infrastructure, by providing education, etc. This serves to increase private production. But the public sector also competes with the private sector for labor, and this of course serves to lower private production. The optimal allocation of the labor force between public and private activities is when the marginal contribution to private production from the ‘lubrication effect’ equals the marginal loss of private production as workers leave the private sector to work in the public administration instead (Findlay and Wilson, 1987).

In the long run, the public sector is likely to complement the private one through the lubrication effect. In the short and medium term, the relation may, however, be a different one, with only weak lubrication and strong competition for workers, which acts as an obstacle to the creation and expansion of private modern-sector activities. In this sense, too many skilled employees may go into the public sector and too few into the private one – because the skilled wage level is inflated by the recruitment of a government bureaucracy. In another sense, however, the public sector may be too *small*. Public sector activities are likely to entail some economies of scale, in the provision of law and order, infrastructure etc.

This is illustrated in Figure 4. The marginal cost of providing public benefits increases at an increasing rate. Had no economies of scale been present, the marginal benefit curve would have been downward-sloping throughout. With economies of scale, however, there will be a rising segment as well. The marginal benefit curve rises, reaches a maximum and then falls when the economies of scale have been exhausted. Let us assume that the economy is in an initial equilibrium with a small public sector, equal to P_1 . Here the marginal benefit of expanding the sector is equal to the marginal cost of doing so. Moving to the right of P_1 , e.g. to P_2 , will not be meaningful, since in the interval P_1P_2 the marginal cost exceeds the marginal

benefit. P_1 is only a local optimum, however, not a global one, for if the expansion of the public sector continues beyond point B, where the two curves intersect each other, we get into a segment where the economies of scale are large enough to make the marginal benefit exceed the marginal cost, until we reach point C where again equality obtains between the marginal benefit and the marginal cost, in the global optimum.

--Figure 4 about here--

What this means is that if the decision makers are myopic or the public sector cannot be expanded for some other reason, the economy may be stuck in the low-level equilibrium P_1 where the lubrication effect on the private sector is too weak, and the recruitment into the public sector simultaneously crowds out the private one. This situation is quite likely to apply in Timor-Leste, where, so far, the build-up of the public sector has not been altogether successful (World Bank, 2005a, p. 19).

The result of this has been a budget execution rate that falls way short of the approved expenditures (World Bank, 2005a, p. 13). What this implies is that lubrication effect is likely to have been small, while at the same time the expansion of the public sector has served to increase skilled wages, and if this continues during the next few years as well, the net effect of public spending on private production may be small, negligible or in the worst case negative.

This presumption is borne out by the conclusions reached by the World Bank in its country assistance strategy for Timor-Leste for 2005-08. The two main conclusions drawn about the relations between the public and the private sector were (1) that the infrastructure is poorly developed and factor costs high and (2) that while good progress has been made on the completion of the regulatory framework of private business, the associated administrative procedures are both unclear and cumbersome (World Bank, 2005b, p. 14). The road network

is extensive, but it is also in poor condition. Air transports to and from the country are expensive. The electricity supply is among the costliest in the world. In district capitals electricity is available for a few hours per night, and most of the countryside has no electricity at all. Phone calls cost 12-23 cents per minute as compared to 3-9 cents in Indonesia. The landline network does not extend outside the major towns, and mobile phone coverage in rural areas is only patchy. The wage level is several times the one prevailing in the rest of the region while the labor productivity remains low.

On the legal front several obstacles remain as well, in spite of some recent progress (World Bank, 2005b, p. 14). Implementation will be a problem at least in the immediate future because of the large problems plaguing the justice sector (World Bank, 2005a, p. 8). It is thus obvious that the development of an efficient public sector has not moved very far beyond the mere beginning. Progress on this front is a priority also from the point of view of private production. The economy must be made to move out of the 'competitive' stage, where the two sectors appear as 'rivals', and into the 'complementary' one.

Conclusions

Timor-Leste began its independence as one of the poorest nations in the world. Substantial progress has been made thereafter but the challenges for future development are numerous. Of special concern is the very high and seemingly increasing population growth. This, in combination with a relatively modest growth of GDP, means that per capita income is declining and that the extent of poverty presumably is increasing. For this situation to change, income opportunities other than those provided by subsistence agriculture are needed. Considering the low level of education and the keen competition for skilled personnel this, however, is difficult. So far, it seems that most skilled workers are being absorbed by the public sector and that this is pushing up the already high skilled wage level. That, in turn,

affects the competitiveness of the private sector negatively and acts as an obstacle to the creation of employment opportunities outside agriculture.

Stockholm 2008-05-30

Word Count 7,650

Endnotes

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¹ Other reports suggest that the youth unemployment might be even higher. The International Finance Corporation and the Asian Development Bank (2007, p. 74) claim that unemployment for 15-19 year-old youths is 43 percent nationally and 58 percent in Dili. The World Bank (2007c, p. 8) argues that unemployment in Dili is 42 percent for youths aged 20-24 and 62 percent for youths aged 15-19.

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Table 1. Timor-Leste Non-Oil Gross Domestic Product, 2000-2007
(million US dollars at constant 2000 prices)

Sector	2000	2001	2002	2003	2004	2005	2006	2007 (prel.)
Non-oil GDP	316.3	368.4	343.9	322.6	323.7	331.1	319.9	--
Non-oil GDP excluding. UN	232.9	276.9	283.6	284.0	295.7	314.1	296.0	320.5
<i>Percentage change</i>	-8.0	18.9	2.4	0.1	4.1	6.2	-5.8	8.3
Agriculture,forestry and fishery	81.5	88.6	93.9	93.5	99.1	105.3	105.6	103.2
Industry and services	98.2	107.9	107.5	106.2	108	110.5	95.2	108.4
Public sector (excluding. UN)	53.2	80.4	82.2	84.3	88.6	98.3	95.2	108.9

Source: International Monetary Fund (2008), pp. 1-3

Table 2. Population Structure by Gender and Age Groups in 2001 and 2007
(percent of the total population)

	2001	2007
Total	100	100
<5	16.8	15.7
5-9	16.5	14.3
10-14	12.1	12.8
15-19	9.0	10.6
20-24	5.6	8.6
25-29	8.1	5.6
30-34	6.7	6.1
35-39	5.7	5.5
40-44	4.7	4.8
45-49	3.5	4.1
50 +	11.3	11.8

Source: Directorate of National Statistics (2007), Table 1.1

Table 3. Employment by Sector in 2001 and 2007
(percent of the total employed population 15-64 years old)

Sector	2001	2007
Total	100	100
Agriculture	81.6	85.4
Industry	3.9	1.0
Wholesale trade, retail, restaurants and hotels	5.1	2.4
Public administration, military	1.0	2.1
Health	0.4	1.1
Education	2.4	2.7
Other community, social and personal services	2.3	1.7
Other	3.2	3.6

Source: Directorate of National Statistics (2007), Table 7.7

Table 4. Required Output Growth in the Modern Sector

Employment Elasticity	Required output growth	
	Broad definition	Narrow definition
1	21 %	106 %
0.8	26 %	133 %
0.6	35 %	177 %
0.4	53 %	265 %
0.2	105 %	530 %

Figure 1. Dualistic Economic Growth

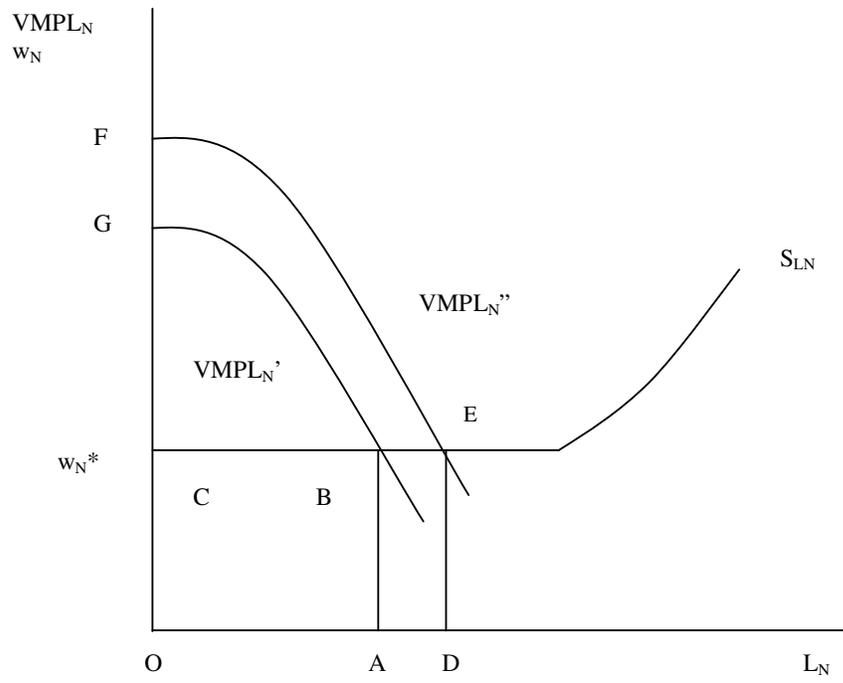


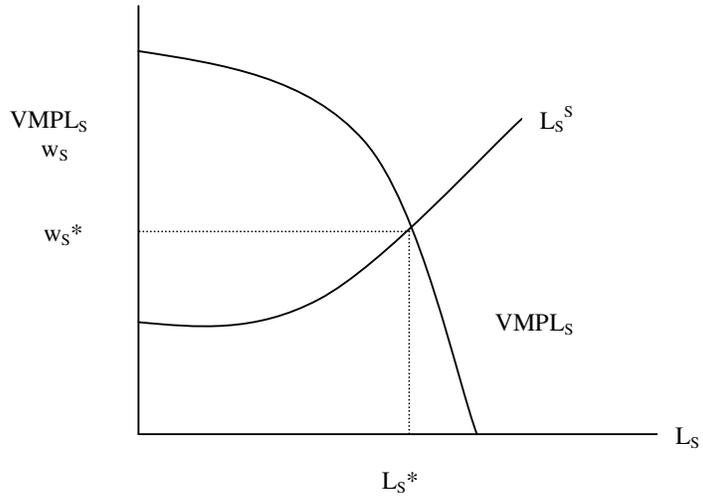
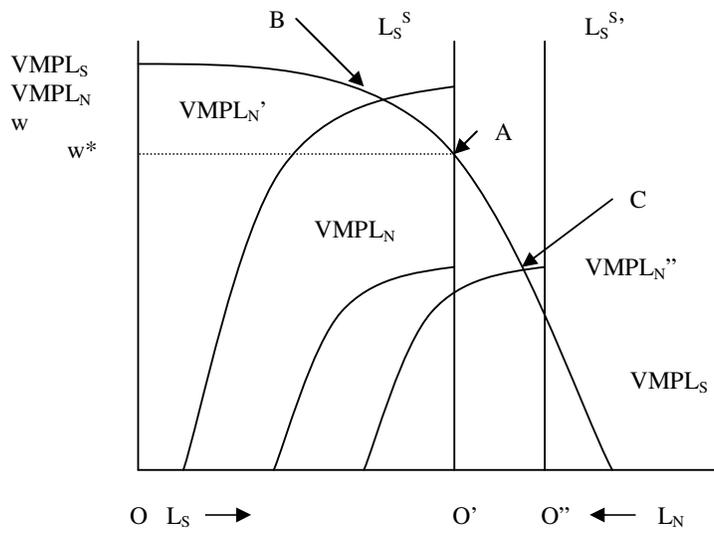
Figure 2. The Modern Service Sector**Figure 3.** Introducing a Non-Service Modern Sector

Figure 4. Economies of Scale in the Public Sector