

*Cambodia Country Economic Memorandum:
Sustaining Rapid Growth in a Challenging Environment*



*Cambodia's Labor Market and
Employment*

Economic Institute of Cambodia
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This background paper was prepared in the process of preparing an analysis on growth in Cambodia. The final report has been reviewed and discussed with the Royal Government of Cambodia and stakeholders in January – February 2009. Background papers are made available at www.worldbank.org/kb/growth to provide further information. They do not necessarily reflect the view of the World Bank or its Executive Directors.

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Introduction

Cambodia is a developing country with a narrow economic base. The garment, tourism, and construction sectors have been driving economic growth and job creation in Cambodia for the last few years while the agricultural sector, which a majority of Cambodians rely on for their livelihoods, remains poor and unstable. Despite several consecutive years of *double*-digit economic growth, the poverty rate has remained high, especially in rural areas. The growth has only resulted in a reduction in the poverty rate of 1 percent per year and income distribution is notably uneven, which means growth is not well shared among Cambodian people.

While garments, tourism and construction are credited with driving economic growth, concerns are mounting about the sustainability of these sectors. Growth is expected to slow considerably or remain flat in the garment and construction sectors in the coming years. Cambodia needs to diversify its economy and promote growth in the agricultural sector to maintain high levels of economic growth and accelerate poverty reduction. But the structure and nature of the country's labor force is likely to restrict efforts to diversify the economy.

This report aims to provide a clearer picture of the current labor market and future trends by examining the following: key economic and demographic trends; recent labor market trends; key characteristics of the labor market; lessons from value chain analysis in terms of job and skills content in various sectors; and, potential employment scenarios based on diverse growth scenarios

The study also will explore some of the factors, other than education, that are restricting labor force advancement. It also reviews the employment and productivity implications of sustaining rapid growth, and the links between sectoral patterns of growth, productivity/employment intensity and the extent to which growth is inclusive.

1. Overview of Economic Growth and Demographic Trends 2004-2007

1.1. Economic Growth 2004-2007

Cambodia posted three consecutive years of double-digit economic growth from 2004 to 2007, averaging 12.7 percent a year and reaching US\$8.6 billion and making the country one of East Asia's top performers in terms of economic growth. Growth was bolstered by continued garment export expansion, a construction boom and increasing numbers of tourist arrivals. In the face of such impressive growth, however, the gross domestic product (GDP) per capita remained low compared to that of other countries in the region. Cambodia's GDP per capita was only US\$598 in 2007, up from US\$394 in 2004.

Table 1: Cambodia's Real GDP Growth by Sector (% , 2000 prices)

	2004	2005	2006	2007
Agriculture	-1.0%	15.5%	5.5%	5.1%
Paddy	-12.2%	43.7%	4.3%	7.5%
Industry	17.0%	12.9%	18.4%	8.4%
Garments	24.9%	9.2%	20.4%	10.0%
Services	13.2%	13.1%	10.1%	10.2%
Tourism	23.4%	22.3%	13.7%	10.3%
Total GDP	10.3%	13.3%	10.8%	10.2%

Source: Data compiled from *Cambodia Economic Watch*

The agriculture sector represented 30 percent of GDP from 2004 to 2007 and it is one of the country's most important sectors since most of poorest inhabitants derive their income from agriculture. However, Cambodia's agricultural sector remains highly natural-resource-based and extremely volatile. Paddy production is tied to weather conditions since the national irrigation system is under-developed. Drought in 2004 and an abundance of rain from 2005 to 2007 resulted in an increase of 20.4 percent in real terms in annual paddy value-added and 10.1 percent for other crops from 2004 to 2007. Other agriculture sectors grew at a very moderate rate during that period. As a result, annual agricultural real growth was only 9.3 percent from 2004 to 2007 and it is expected to be flat in the coming years.

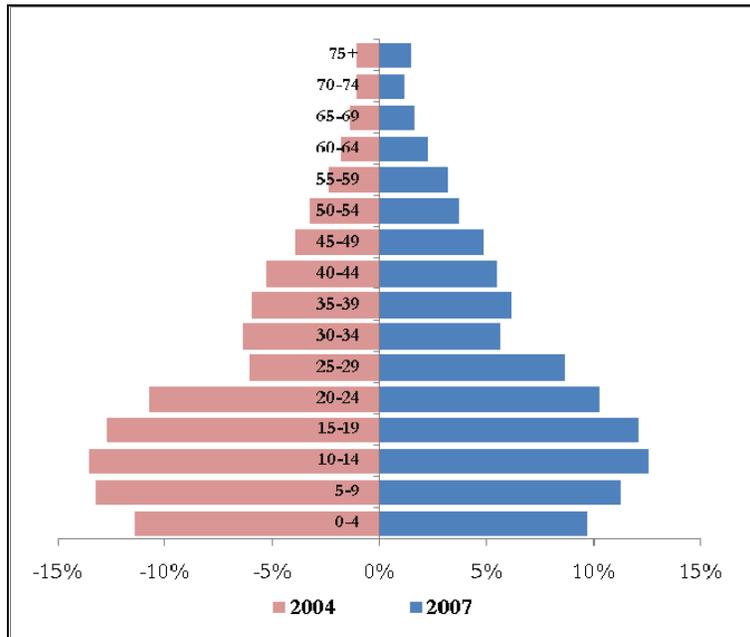
The industry sector accounted for only 25 percent of GDP from 2004 to 2007 and was dominated by the garment industry and construction. Contrary to some fears, garment sector growth continued increasing at a significant annual rate of 14.5 percent from 2004 to 2007. This was because of higher labor standards, as evaluated by the International Labor Organization (ILO), Government efforts to reduce unnecessary costs and safeguard measures imposed by the US and EU on Chinese exports, with the phasing out of the quotas system. Parallel to this, construction grew 18.9 percent annually and other industrial sectors increased modestly. In sum, the industrial sector increased by 15 percent annually from 2004 to 2007. But the prospects for future growth remain slim since both the garment and construction sectors are slowing down.

Last but not least, the service sector and its main sub-sectors of trade, tourism and transport and communication represented the biggest share of Cambodia's economy, with 39 percent of GDP, from 2004 to 2007. Trade increased by 9.1 percent annually partly due to an increase in agriculture and garment products. At the same time, the tourism sector increased by 17.8 percent annually due to impressive increases in the number of foreign tourist arrivals. Transport and communication services grew 8.4 percent annually. In total, the service sector grew 12.4 percent annually from 2004 to 2007. Growth in the service sector is expected to remain strong in the coming years.

1.2. Demographic Trends 2004-2007

Widespread killings and deaths due to starvation and overwork during the Khmer Rouge regime in 1970s left Cambodia with a sparse population. But a baby boom after the genocide caused the population to surge shortly after the Khmer Rouge fell. A 1998 census found the population to be 11.4 million, of which 52 percent were female. Population estimates for 2004 and 2007 were revised following the 2008 census to around 12.8 million and 13.2 million, respectively. Therefore, the total population grew by about 400,000 people between 2004 and 2007, and thus the population growth rate is about only 1.09 percent. Females outnumbered males in 2004 and 2007.

Figure 1: Population Structure by Age Group (% of total population)



Source: Data compiled from CSES 2004 and CSES 2007

From 2004 to 2007, there was a three-year shift in terms of age. As Figure 1 shows, the proportion of people aged 10-14 years made up a large part of the total population, but it decreased from 13.5 percent in 2004 to 12.5 percent in 2007. The proportion of people under 25 years of age decreased in each age cluster and, in total, dropped by 5.8 percent from 61.6 percent in 2004 to 55.8 percent in 2007; whereas the proportion of those aged 25 and older increased gradually in each age cluster. This trend is certain to result in a demographic shift in which the proportion of older people eventually will exceed that of young people. Cambodia's young and dynamic population could prove to be a blessing or a burden for the country, spurring or constraining development depending on the opportunities young people have to get an education and build their capacity to become part of the country's skilled labor force.

2. Economically Active Population¹ in 2004 and 2007

Cambodia Socio-Economic Surveys conducted in 2004 and 2007 allow us to calculate the unemployment, employment rate and participation rate. However, measuring the unemployment, employment rate and labor participation rate is a matter of controversy due to variations in definitions for unemployment, employment and labor participation.

The analysis in this report uses a definition for unemployment as defined by the ILO. A person is considered unemployed if he/she meets three criteria simultaneously during the reference period:

- Criterion 1 is “*Without work*”. It refers to people who have no job (either paid employment or self-employment);
- Criterion 2 is “*Available for work*”. It refers to people who are able and ready to work if opportunities are offered;
- Criterion 3 is “*Seeking work*”. It refers to people who are taking specific steps to find work or jobs.

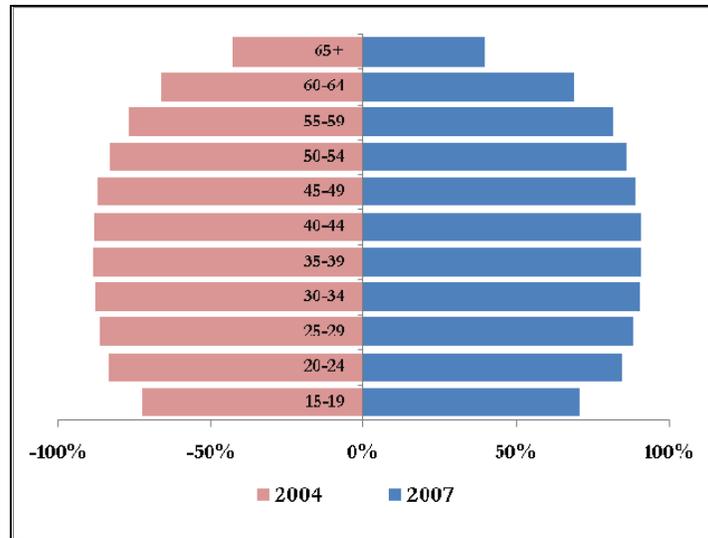
2.1. Labor Force in 2004 and 2007

Since Cambodia is a developing country with a rather young population, low living standards require many people to begin working at an early age to help support their families. It is not uncommon to see children as young as 10-14 years old in work places. However, for the purposes of this report the economically active population is defined aged 15 years and above.

The number of people of employment age of 15 years or older totaled 8.8 million in 2007, representing a 3.7 percent annual increase from that of 2004. Of these, 7.1 million or 81.1 percent were economically active or part of the country’s labor force in 2007, which represented a 4.2 percent annual increase from 2004 when there were 6.3 million. The active participation rates were lower among women than among men. Among women, 74.6 percent and 75 percent were active compared to 88.4 percent and 85.4 percent of men in 2007 and 2004, respectively.

¹ The *economically active population* comprises all persons of either sex who furnish the supply of labor for the production of goods and services during a specified time-reference period.

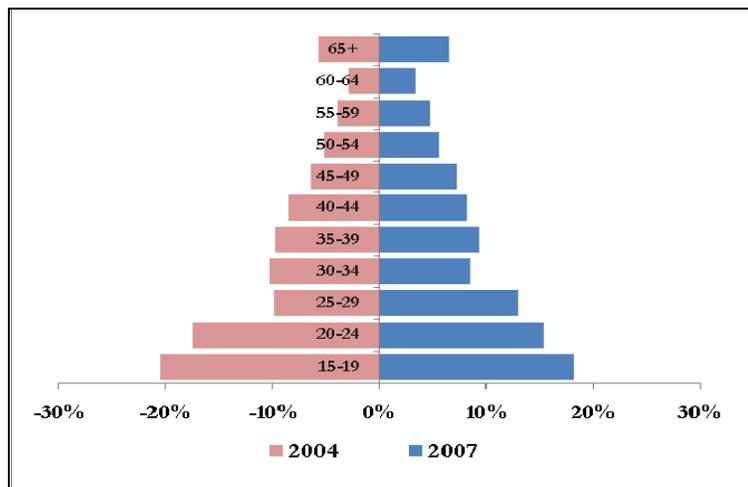
Figure 2: Active Participation Rate by Age Group



Source: Data compiled from CSES 2004 and CSES 2007

Figure 2 shows how the activity rate increases with age to a peak of 91.9 percent in 2007 and 88.6 percent in 2004 in the 35-39 age group, up from 71.1 percent and 72.5 percent respectively in the 15-19 age group. The rates decrease to 69.4 percent and 66.4 percent in the 60-64 age group and to 39.9 percent and 43 percent among those 65 or older.

Figure 3: Labor Force by Age Group (% of total labor force)



Source: Data compiled from CSES 2004 and CSES 2007

On the other hand, in term of number, Cambodia has a very young labor force, which is dominated by people aged 15-34 years, who represented about 58.5 percent and 55.6 percent of the labor force in 2004 and 2007, respectively. In addition, with the exception of the 25-29 age group, the proportion of people in the labor force aged 15-44 years was lower in 2007 than 2004, while that

of 45 years and over was higher in 2007 than 2004. This suggests that the labor force is aging, albeit very gradually.

2.2. Unemployment Rate in 2004 and 2007

As mentioned above, the analysis in this report uses a definition for unemployment as defined by the ILO. A person is considered unemployed if he/she meets three criteria: 1- *without work*, 2- *available for work* and 3- *seeking work* simultaneously during the reference period.

However, such definition can only be used to measure unemployment in labor markets that are largely dominated by paid employment, such as those are in developed countries. The ILO definition is not very useful in measuring the labor market situation in developing countries like Cambodia, where most workers are self-employed, especially in the agricultural sector (ILO 1982 guideline).

The third criterion, known as *seeking work*, should be ignore to calculate the unemployment rate in a developing country like Cambodia. Workers in developing countries, especially those employed in the agricultural sector in rural areas do not tend to take specific steps to seek work. Rather, they take jobs as they come and do not have the skills to explore their employment options.

Table 2: Unemployment and Participation Rate by Sex and Region (Age 15+)

		Cambodia		Phnom Penh		Other Urban		Other Rural	
		2004	2007	2004	2007	2004	2007	2004	2007
ILO Definition: <i>Without Work, Available for Work, and Seeking Work</i>									
Unemployment Rate	Total	1.05%	0.90%	3.60%	2.32%	1.48%	2.60%	0.64%	0.53%
	Male	1.01%	0.91%	3.05%	2.60%	1.31%	2.13%	0.68%	0.55%
	Female	1.09%	0.88%	4.20%	2.03%	1.66%	3.17%	0.60%	0.51%
Participation Rate	Total	79.93%	81.06%	67.71%	67.39%	77.18%	75.34%	82.38%	83.80%
	Male	85.43%	88.35%	73.93%	75.74%	81.77%	82.56%	88.01%	91.00%
	Female	75.00%	74.61%	62.04%	60.15%	72.84%	68.09%	77.41%	77.53%
Broad Definition: <i>Without work and Available for Work</i>									
Unemployment Rate	Total	5.85%	3.06%	11.17%	5.37%	6.12%	5.73%	5.10%	2.47%
	Male	4.10%	1.89%	9.62%	3.85%	3.93%	4.38%	3.37%	1.33%
	Female	7.58%	4.26%	12.80%	6.96%	8.34%	7.33%	6.78%	3.61%
Participation Rate	Total	83.94%	82.88%	73.47%	69.56%	80.96%	77.91%	86.16%	85.48%
	Male	88.15%	89.27%	79.31%	76.72%	83.97%	84.51%	90.41%	91.77%
	Female	80.17%	77.24%	68.16%	63.34%	78.12%	71.27%	82.41%	80.00%

Source: Data compiled from CSES 2004 and CSES 2007

Table 2 below reveals the unemployment rate and participation rate² according to the ILO definition and broad definition. Unemployed persons as defined by the broad definition refer to those who simultaneously meet at the ILO’s criterion 1 “*without work*” and criterion 2 “*available for work*” for unemployment while standard ILO’s definition have to meet all three criteria simultaneously.

The results vary depending on the definition of unemployment that is applied. Using the ILO definition, the unemployment rate in Cambodia was calculated to be 0.9 percent in 2007 down from 1.05 percent in 2004. Unemployment rates dropped between 2004 and 2007 for most strata and sexes, except those in other urban areas. The unemployment rate was higher in Phnom Penh than other urban areas and rural areas, and the unemployment rate was generally higher for females than males.

The unemployment rates change only slightly and are relatively low when the ILO definition is used. In contrast, when a broad definition is used, the unemployment rates are higher and a significant decrease in the unemployment rate is observed between years. Using a broad definition, the unemployment rate in Cambodia was at 3.06 percent in 2007 down from 5.85 percent in 2004. Unemployment rates when the broad definition is applied also dropped between 2004 and 2007 for most strata and sexes, except males in other urban areas. The unemployment rate was higher in Phnom Penh than other urban areas and rural areas, and the unemployment rate was higher for females than males.

2.3. Employed People Aged 15 and Over in 2004 and 2007

Data compiled from the CSES 2004 and 2007 also revealed that, using the ILO definition, about 7.0 million people aged 15 and above were employed in 2007. This was up from 6.2 million people in 2004. Therefore, about 0.8 million jobs were created in three years.

Table 3: Employed Persons by Region 2004 and 2007 (000 persons)

	2004		2007	
Cambodia	6,268	100%	7,076	100%
Phnom Penh	519	8.3%	664	9.4%
Other Urban	651	10.4%	664	9.4%
Rural	5,098	81.3%	5,748	81.2%

Source: Data compiled from CSES 2004 and CSES 2007

Most of the employed people were in the rural areas. The share of employed peoples in rural and other urban area decreased slightly from 81.3 percent and 10.4 percent in 2004 to 81.2 percent and 9.4 percent respectively; while those in Phnom Penh increased from 8.3 percent to 9.4 percent in

² Participation rate is the proportion of a country’s working age population that engages actively in labor market, either by working or looking for work

the same period. This suggests that many employed people moved to Phnom Penh, where the majority of jobs were created.

2.4. Child Labor Aged 10-14 Years in 2004 and 2007

According to Cambodia's labor laws, no one under the age of 15 should be working because school is compulsory for those under the age of 15. It is generally believed that children who enter the labor market early are denied the opportunity to go to school, which adversely affects their futures.

Table 4: Child Labor Aged 10-14 Years, 2004 and 2007

Items	2004	2007
Of Total Population	13.5%	12.5%
Employment/Total 10-14 population	46.3%	43.6%

Source: Data compiled from CSES 2004 and CSES 2007

Children aged 10-14 accounted for 12.5 percent of the total population in 2007, down from 13.5 percent in 2004. The drop in the share of population for this age group could also account for the drop from 46.3 percent to 43.6 percent in the age group's employment rate as Table 4 shows. While the number of children in this age bracket who are working decreased, a large number of them are continuing to work. Therefore, reducing the participation of school aged workers in the labor market and increasing their education rate not only would provide these children with brighter futures and opportunities, it should improve the overall quality of Cambodia's future labor force.

Table 5: Child Labor Aged 10-14 by Region and Sector, 2004 and 2007

	2004	2007
Region		
Phnom Penh	2.3%	1.7%
Other Urban	6.9%	6.9%
Other Rural	90.8%	91.5%
Total	100.%	100.%
Sector		
Agriculture	81.6%	83.2%
Industry	4.9%	6.1%
Service	13.5%	10.6%
Total	100%	100%

Source: Data compiled from CSES 2004 and CSES 2007

Among all strata, child labor is most present in other rural areas, where almost 90 percent of children work. Child labor in the agriculture sector rose from 81.6 percent to 83.2 percent between 2004 and 2007, during which time the level of child labor dropped in Phnom Penh and other urban areas. The increase in the rate of child labor in the agriculture sector in rural areas is a bad sign for the labor market because children who work tend to have less time to study, which adversely impacts their future and the overall labor market. The industry sector also saw a rise in child labor from 4.9 percent to 6.1 percent that was present in all strata. However, child labor in the service sector decreased from 13.5 percent to 10.6 percent. Although child labor rates in the sector dropped, it is worrisome that the rate increased in Phnom Penh and other urban areas by 4 and 2.8 percent points, respectively.

3. Characteristic of Labor Market in 2004 and 2007

3.1 Status of Employed People in 2004 and 2007

Like many other developing countries, Cambodia's labor force is characterized by a large number of young and low skilled workers and very few workers in positions of paid employment. Instead, most Cambodians are self-employed or work in family businesses in the informal sector, which dominates the labor market since a majority of Cambodians are highly dependent upon agriculture for their livelihoods. The formal employment sector is much smaller, with paid work positions available only in some sectors--garment, tourism, construction and so on--and mostly in urban areas.

Breaking down employment by status and region helps shed more light on Cambodia's informal employment sector. Paid employees and employers constitute only a small part of total employment. As illustrated in Table 6, own account and unpaid family workers represented about 74.9 percent of total employment in 2007, down from 76.9 percent in 2004. Paid employees and employers made up only 22.5 percent of the country's workers in 2004 and 25 percent in 2007.

Own account workers and unpaid family workers, which represent a majority of employees working in Cambodia, are largely present in both other rural and urban areas. The proportion of own account workers has remained relatively stable in Cambodia, dropping slightly, by 1.2 percent, in Phnom Penh. In other urban and rural areas, the proportion of own account workers rose slightly, from 37.8 percent to 38.2 percent in other urban areas and from 39.9 percent to 40.1 percent in other rural areas. Finally, unpaid family workers in Cambodia decreased by 2 percent for the period, from 38.2 percent to 36.2 percent, and the drop occurred in all areas except Phnom Penh. The share of unpaid family workers decreased in other urban and rural areas by 10.9 and 1.4 percent, respectively, in 2007 compared to 2004.

Table 6: Share of Employment by Status in Each Region

Employment Status	Cambodia		Phnom Penh		Other Urban		Rural	
	2004	2007	2004	2007	2004	2007	2004	2007
Paid Employee	22.5%	25.0%	50.2%	50.8%	29.0%	39.3%	18.8%	20.4%
Employer	0.1%	0.1%	0.1%	0.1%	0.2%	0.5%	0.1%	0.0%
Own Account Worker	38.7%	38.7%	28.4%	27.2%	37.8%	38.2%	39.9%	40.1%
Unpaid Family Worker	38.2%	36.2%	20.5%	21.8%	32.8%	21.9%	40.8%	39.4%
Other	0.5%	0.1%	0.8%	0.0%	0.2%	0.1%	0.5%	0.1%
Total	100%							

Source: Data compiled from CSES 2004 and CSES 2007

Table 6 also shows that the proportion of paid employees increased for all strata by 2.5 percent in Cambodia as a whole, 0.6 percent points in Phnom Penh, 10.3 percent points in other urban areas, and 1.6 percent points in rural areas. During the same period, the employer category remained stable for Cambodia, at 0.1 percent of total employment, but it increased by 0.3 percent in other urban areas and decreased 0.1 percent point in rural area.

3.2. Employment by Sector in 2004 and 2007

There were noticeable changes in the structure of Cambodia's economy from 2004 to 2007. The rate of growth in the agriculture sector fell while the pace of growth in the industry and service sectors picked up. Such structural changes and growth patterns not only impacted the economy, they also affected the labor market. Employment levels in each sector varied from year to year. As shown in Table 7, agriculture is the biggest employer, followed by the service and industry sectors.

Table 7: Share of Employed People by Sector

Sector	Cambodia		Phnom Penh		Other Urban		Other Rural	
	2004	2007	2004	2007	2004	2007	2004	2007
Agriculture	58.7%	58.1%	2.3%	1.1%	39.3%	30.9%	67.0%	67.8%
Industry	13.8%	14.7%	20.2%	13.5%	11.5%	15.4%	13.4%	14.8%
Service	27.5%	27.2%	77.5%	85.3%	49.2%	53.7%	19.6%	17.4%
Total	100%							

Source: Data compiled from CSES 2004 and CSES 2007

As a share of all employed people in Cambodia, the agricultural and service sectors dropped slightly from 2004 to 2007 while industry's share of workers increased. Agriculture's share dropped to 58.1 percent in 2007 from 58.7 percent in 2004. Most of the Cambodia's agricultural workers farm small pieces of land in rural areas. Agriculture does not employ many people in Phnom Penh and it accounted for only 1.1 percent of total employment in 2007. In other urban areas, employment in agriculture dropped from 39.3 percent to 30.9 percent while the share in other rural areas rose from

67.0 percent to 67.8 percent. Although there was a drop in agricultural employment in both Phnom Penh and other urban areas, there was a corresponding increase in agricultural workers in other rural areas.

Employment in industry, in which the garment sector is the largest employer, rose slightly from 13.8 percent to 14.7 percent for the period. In Phnom Penh, industry employment contracted sharply from 20.2 percent to 13.5 percent while an increase was observed in other urban areas, where employment in the industry sector rose by 3.9 percent. Other rural areas also witnessed an increase from 13.4 percent to 14.8 percent for the same period.

Overall, employment in the service sector dropped slightly from 27.5 percent to 27.2 percent between 2004 and 2007. Service sector jobs in Phnom Penh increased from 77.5 percent to 85.3 percent and grew from 49.2 percent to 53.7 percent in other urban areas. However, as a percentage of total employments, service sector jobs in other rural areas decreased from 19.6 percent to 17.4 percent.

The service sector was the main source of employment for paid employees and employers in both 2004 and 2007, followed by industry. In contrast, agriculture employed the most account workers and unpaid family workers, followed by the service sector.

Paid employee's share in the industry sector grew from 35.1 percent to 37.4 percent for the period, mainly due to increases in manufacturing and construction while service and agriculture sectors decreased by 0.7 and 1.6 percent, respectively, due to declines in agriculture, hunting and forestry.

Table 8: Share of Employment by Sector in Each Status

Sector	Paid Employee		Own Account Worker		Unpaid Family Worker	
	2004	2007	2004	2007	2004	2007
Agriculture	19.1%	17.5%	63.9%	66.1%	77.1%	77.8%
Industry	35.1%	37.4%	8.0%	7.8%	6.9%	6.5%
Service	45.8%	45.1%	28.1%	26.1%	15.9%	15.7%
Total	100%	100%	100%	100%	100%	100%

Source: Data compiled from CSES 2004 and CSES 2007

Own account workers gather mostly in other urban and rural areas. Out of total own account workers, the agriculture sector shared about 63.9 percent in 2004 and 66.1 percent in 2007. In contrast, the industry and service sector shared about 8 percent and 28.1 percent in 2004, dropping to 7.8 percent and 26.1 percent in 2007, respectively. Besides the agricultural sector, local business is another popular job for Cambodians who run their own businesses at home or in the market. It is not unusual for own account workers to be concentrated in service sectors such as the wholesale, retail, repair service sectors, etc.

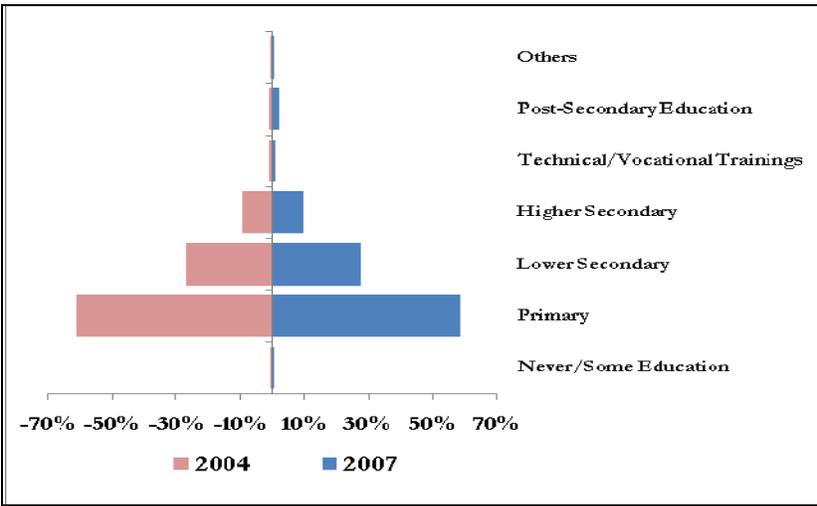
Unpaid family workers mostly work in the agricultural sector, which accounted for 77.1 percent of total unpaid family workers in 2004, increasing to 77.8 percent in 2007. In contrast, those who worked in industry and service sectors accounted for only 6.9 percent and 15.9 percent in 2004, dropping to 6.5 percent and 15.7 percent in 2007, respectively. Since unpaid family workers exist together with own account workers, the sectoral share pattern is similar for these employment status. However, in absolute terms, the number of own account workers in agriculture vastly outnumbers those of paid employees.

As paid employees and employers constitute only a small part of total employment, the potential labor force lies with own account workers and unpaid family workers, who make up most of the workers in the country. Still, industrial transformation and sustained economic growth is not possible without high quality labor. As far as gauging labor quality is concerned, economists tend to refer to the level of education and health conditions of workers in a country.

3.3. Educational Level of Employed People

Data compiled from CSES 2004 and 2007 suggests most Cambodian workers are engaged in unskilled labor. Nearly 90 percent of employed people had obtained a lower secondary education or lower level in 2004 and 2007 and more than half had a primary level of education. However, there education levels generally were higher in 2007 compared to that of 2004 because the percentage of employed people who had obtained a primary level and lower were lower in 2007 than 2004, whereas those who had obtained a lower secondary level or higher level of education were higher in 2007 than 2004.

Figure 4: Share of Employed People by Educational Level



Source: Data compiled from CSES 2004 and CSES 2007

More precisely, the number of workers who had some education increased, while the number who had no education decreased. The number of people who had only attended primary school fell to 59 percent in 2007 from 61.2 percent in 2004 while those who had attended lower secondary

school rose from 26.9 percent in 2004 to 27.6 percent 2007 and those who had attended upper secondary education increased to 10 percent in 2007 from 9.1 percent in 2004. The number of workers who had some post-secondary education jumped 1.1 percent. Therefore, although the education level of Cambodia’s labor force generally is still low, the workforce is more educated than in the past.

3.3.1. Educational Level of Employed People by Status

Paid employees with primary education or lower declined slightly from 46.7 percent in 2004 to 47.3 percent in 2007. Those with lower secondary education dropped 2.4 percent, while those with upper-secondary school increased by 0.8 percent during the same period. Furthermore, workers of this group who took technical or vocational training increased from 3 percent to 3.2 percent while there was an increase of 2.9 percent in post secondary education. Paid employees are expected to have obtained higher levels of education than the other groups as most of them are employed in the service sector.

Own account workers, who mostly work in the agricultural sector, generally tend to have limited educations but education levels of this group improved somewhat from 2004 to 2007. Around 66.2 percent of own account workers in 2004 had primary or lower education while 65.6 percent did in 2007. More interestingly, the rate of those with secondary school increased slightly from 26 percent in 2004 to 26.6 percent in 2007 and workers with post secondary education increased by 0.1 percent.

Therefore, even though over half of own account workers had obtained only primary education or lower, more had managed to advance past primary school. This suggests education levels are improving among own account workers. Since own account workers are expected to be the main source of labor for future job creation in a range of sectors, it is essential that education levels improve among this group as well as unpaid family workers.

Table 9: Share of Employed People by Educational Level in Each Status

Level of Education	Paid Employee		Employer		Own Account Worker		Unpaid Family Worker	
	2004	2007	2004	2007	2004	2007	2004	2007
Never/Some Education	0.4%	0.1%	0.0%	0.0%	0.7%	0.8%	0.6%	0.3%
Primary	46.3%	47.2%	52.8%	31.8%	65.5%	64.8%	65.6%	61.1%
Lower Secondary	30.1%	27.7%	16.5%	1.2%	26.0%	26.6%	25.5%	28.7%
Upper Secondary	16.1%	15.3%	30.7%	53.7%	6.2%	6.9%	7.3%	8.9%
Technical/Vocational Trainings	3.0%	3.2%	0.0%	6.8%	0.3%	0.2%	0.4%	0.0%
Post-Secondary Education	3.5%	6.4%	0.0%	6.5%	0.2%	0.3%	0.2%	0.9%
Others	0.6%	0.1%	0.0%	0.0%	1.2%	0.4%	0.5%	0.1%
Total	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Source: Data compiled from CSES 2004 and CSES 2007

Most unpaid family workers also have low levels of education. However, their education levels also improved from 2004 to 2007 as the proportion of those with primary education or lower level decreased from 66.2 percent in 2004 to 61.4 percent in 2007. Moreover, the proportion of workers in this group who had attended secondary school grew from 32.8 percent in 2004 to 37.6 percent in 2007 and those with even higher levels of education also increased. Again, this signals a positive change in Cambodia's labor market since unpaid family workers represent such a large proportion of the country's labor force. Improving education levels in this group will boost future labor market quality and productivity.

3.3.2. Educational Level of Employed People by Sector

Breaking down educational levels by sector is useful for further analysis. While education levels improved for workers in agriculture and industry, the gains were even more impressive in the service sector.

Most people employed in agriculture had obtained a lower secondary school level or lower. The proportion of those having only primary school or lower dropped 1.5 percentage points from 2004 to 2007, while those who had secondary increased by 2 percent. This is no doubt that labor force quality has improved slightly. However, the educational levels for a majority of workers in the sector are still too low. In addition, the proportion of those with higher levels of education, such technical and vocational training or post secondary, decreased from 2004 to 2007.

In industry, the portion of the employed that had only a primary school education or lower dropped from 60.4 percent in 2004 to 58.4 percent in 2007. But, industry workers who reported having secondary education increased from 38.2 percent to 40.8 percent for the period. Those with post secondary education increased 0.2 percent and can be attributed mostly to an increase in Phnom Penh, where secondary education is more accessible than other areas of the country.

Table 10: Share of Employed Persons by Educational Level in Each Sector

Level of Education	Agriculture		Industry		Service	
	2004	2007	2004	2007	2004	2007
Never/Some Education	0.7%	0.7%	0.3%	0.0%	0.5%	0.2%
Primary	71.0%	69.5%	60.1%	58.4%	43.1%	39.2%
Lower Secondary	22.8%	24.3%	30.7%	32.1%	32.2%	31.2%
Upper Secondary	4.5%	5.0%	7.5%	8.7%	17.9%	19.5%
Technical/Vocational Training	0.2%	0.0%	0.3%	0.1%	2.8%	3.1%
Post-Secondary	0.1%	0.1%	0.5%	0.6%	3.0%	6.6%
Other	0.8%	0.3%	0.6%	0.1%	0.7%	0.2%
Total	100%	100%	100%	100%	100%	100%

Source: Data compiled from CSES 2004 and CSES 2007

In the service sector, which employs the most educated Cambodians, the proportion of workers who reported having only a primary school education or lower decreased 4.1 percent and those who said they had attended secondary school increased slightly from 50 from to 50.7 percent for the period. Workers who reported having post-secondary education rose 3.3 percent and they are mostly found in Phnom Penh and other urban areas.

In sum, it can be said that educational levels are highest among workers in the service sector workers, followed by the industry sector with agriculture workers being the least educated. Although education levels are improving among Cambodia's workers, they are still too low and must be advanced for Cambodia to attract new industry to the country.

3.3.3. Education Situation and Vocational Training

According to Ministry of Education, Youth, and Sport statistics, the gross enrolment rate for primary school increased slightly from 119.9 percent in 2004 to 122.7 percent in 2007. The rise in the rate of lower secondary education was even more remarkably, jumping from 39.3 percent to 60 percent, while the enrolment rate for upper secondary school rose from 13.9 percent to 21.2 percent. The enrolment rate for higher education, meanwhile, remains low with post secondary opportunities only available in Phnom Penh and a few other urban areas.

If the enrollment rates of upper secondary and higher education remain at current levels and skilled workers are needed in the future, the quality of the labor force would pose major constraints to economic growth. In addition to the low enrolment rates for secondary school or higher and the current labor force's low level of education, Cambodia's educational system is perceived to be of low quality: It ranked 95th among 131 countries reviewed in the Global Competitiveness Report 2007-2008. Secondary enrollment in Cambodia ranked 118th and tertiary enrollment 119th out of 131 countries. Quality of school management and that of math and science education also lag behind other countries, ranking 116th and 118th, respectively.

Meanwhile, only about 1 percent of employed Cambodians have received formal technical or vocational training. According to Ministry of Labor and Vocational Training (MoLVT) statistics, about 27,487 students graduated from 40 public technical and vocational training institutions and 170 private and NGO training centers in 2005-2006. About 48 percent graduated from state schools. Most private training centers focus on English, business and management skills, and computer applications. NGOs offer various skills related to small handicrafts, agriculture, mechanics, and small businesses. Public schools and training centers mainly provide courses related to civil engineering, electrical engineering, mechanics, and other topics related to agriculture. About 50 percent of total trainees and students receive some sort of technical training, and the other half management and computer skills.

In addition to the low enrollment rate, the technical/vocational training offered in Cambodia is of limited quality³. This is due, primarily, to a lack of skilled trainers, facilities (including buildings,

³ Interview with deputy director of TVET department.

and equipment), and up-to-date technology. Private schools and training centers with financial support from foreign governments and international organizations are believed to have better facilities and provide the best training while public technical and vocational schools have only limited funds available and are thought to be providing low quality training to only a small number of students.

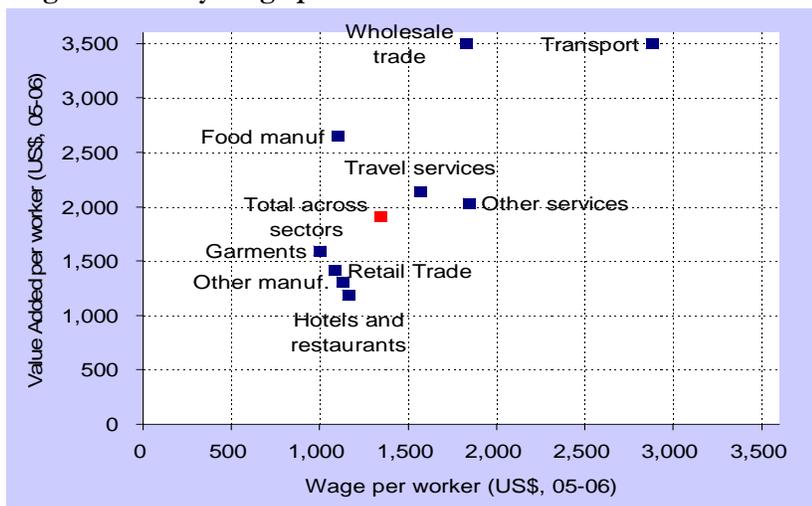
4. Income and Earning of Workers 2004-2005

4.1. Income and Earning of Workers

Workers must have the opportunity to boost their incomes to improve their living standards. In Cambodia, agricultural earnings have proved critical since the sector employs so much of the country's workforce. However, moving workers from low paying positions in informal sectors to higher paying jobs in formal sectors will require much time and effort as well as proper and effective policies. As discussed above, increasing worker incomes will be challenging since Cambodia's labor force generally is low skilled and the country lacks mechanisms to groom skilled workers.

According to a recent investment climate survey, the average monthly wage is around US\$100 across sectors with workers in wholesale and transport sectors, on average, earning higher wages. Figure 5 illustrates wages per worker across various sectors in 2005-2006. Workers in various service sectors, such as wholesaler, transport, travel, hotel and restaurant, etc., earn more than other sectors. Workers employed in manufacturing, including garment factories, food manufacturing and other manufacturing earn less than service sector employees but more than agricultural workers. Agriculture employs more workers than the service and industry sectors.

Figure 5: Yearly Wage per Worker in Various Sectors 2005-2006



Source: WB, Investment Climate Survey

Over the long term, increasing worker incomes in Cambodia will require policies aimed at pushing workers from agriculture to industry and service sectors since many demand and supply side constraints and challenges currently impede the movement of workers from one sector to another. In the medium term, intensive investment in agriculture and improving the quality of labor in the agriculture sector is essential to ensuring decent standards of living. Thus far economic growth has

mostly benefited the service and industry sectors, but such investment would ensure that it is shared more equally.

4.2. Labor Costs and Wage-Setting Mechanism

4.2.1. Labor Costs

The labor law in Cambodia governs employers, all types of employees, working conditions, collective labor rights and dispute resolution. In term of labor costs, employers have to bear costs related to salary, other benefits and dismissal.

According to article 102 of the labor law, “salary” means the payment for labor or payment of services that can be in cash or set by agreement or by national law. An employer shall pay the salary to an employee under a written or verbal contract of labor or services, either for labor already done or to be done or for services already rendered or to be rendered. In Cambodia, most employment contracts express salary on a monthly basis, while others are paid according to an hourly or daily rate. Generally, regular cash payment in the contract is referred to “base salary or pure salary” and other compensations are also considered as salary. However, article 103 of the labor law states more clearly what should be included in salary: base salary or pure salary, overtime pay, commissions, bonuses and rewards, profit sharing, gratuities (awards), non-cash remuneration, family support allocation in excess of any amount required by law, holiday or compensatory holiday pay, compensation paid by employer and payment made for disability and maternity leave.

In addition to the above items of salary, other benefits are also provided by employers to employees. Under article 103, salary excludes the following benefits: health care, family support payment required by law, travel expense, and other benefits as incentive to encourage better performance from employees. Although items of salary are defined, sometimes the word “salary” includes all items in article 103, other times only some of them while sometimes it includes only a base salary.

Employers have to bear some costs as stated in the labor law when they lay off employees. Employment contracts fall under two types: fixed duration and undetermined duration. While payment and damages vary depending on the type of contract, employers are responsible for providing compensation when contracts are cancelled and employees are laid off.

For fixed duration contracts, employers and employees are entitled to cancel the contract with and without legal reasons. If legal reasons exist in the cancellation of the contract, no damages or compensation is made. In contrast, cancellation without legal reasons means employers are required to bear some costs. In the case that employers cancel the contract before its expiration date without legal reasons, employees secure rights to compensation of damages due to the breach of contract. Therefore, the minimum amount of compensation employers are required to pay is the salary that employees would have received. In addition, when a fixed duration contract is terminated, employers must pay employees severance pay in addition to the employee’s salary when employment is terminated. Severance pay is required whether or not it is stated in the contract. The amount of severance pay is calculated by CBA or formula:

Minimum Severance Pay: $W \times 5\%$

Where W = wages paid during the length of contract⁴.

Regarding undetermined duration contracts, employees have the right to cancel the contract for any reason as long as they give notice to the employer, but employers must have valid reasons for canceling a work contract that relate to the employee's skills or qualification for the job, employee's behaviors or character, and the requirement of the operation of enterprises, factories or services. But employers must give notice to employees within a timeframe before canceling the contract, except in cases of serious misconduct by the employee or force majeure. Otherwise, compensation must be paid to the employee under article 77: salary and benefits the employee would earn during the notice period.

In addition, lay-off compensation for undetermined duration contracts must be made to employees in the same way as severance pay. Lay-off compensation comes for the following conditions: any reason other than serious misconduct, and employee's resignation by employers' action. The amount of lay-off compensation depends on the length of continuous employment and is provided in addition to any payments that employers must pay for the failure to give notice. For those who work for a period between six months and one year, lay-off compensation must equal seven days of wages and benefits. Those employed over one year are entitled to receive pay equal to 15 days for each year of employment, up to a maximum of six months of wage and benefits (after the first year of employment, fraction of a half year or more count as an entire year).

4.2.2 Wage Setting Mechanism

The labor law governs Cambodia's workers, but informal workers are not shielded by the law, which is generally only applied in the formal sector. Cambodia does not have clear wage-setting mechanisms for workers in every sector and wages in the formal sector are negotiated between employers and employees or determined according to the internal rules of each private firm. So salaries or wages for similar positions or skills may vary from company to company. However, a Labor Advisory Committee (LAC)⁵ has been set up to study labor-related issues, provide recommendations on a guaranteed minimum wage, and render prior advice to extending the application of collective agreement and on any regulation regarding condition of employment in a given profession or sector.

Although no mechanism exists for setting it, minimum wage is guaranteed by the labor law. Any mechanism for setting a minimum wage would have to fulfill procedural and substantive requirements. The procedural requirements are very simple since the Ministry of Labor and

⁴ However, the word "wage" here seems vague as wage refer to the wages paid during the fixed duration of contract that is being cancelled or the sum of total wage payments made to the employees for service period with the employer.

⁵ Its compositions include minister of Labor or representative, representatives of relevant ministries, representatives of employers' organizations, and representatives of workers' unions.

Vocational Training simply can establish the minimum wage by a Prakas in consultation with LAC. But substantive requirements to set a minimum wage are more complicated and include determining the amount of the wage that would be necessary to sustain the living standard of workers.

To set the minimum wage, the ministry must take into account two issues. First, the needs of workers and their families must be considered for the minimum wage in relation to other factors such as social factors, and general living standards across various forms of employments. Secondly, the ministry and LAC have to consider economic development and the advantages for the country of maintaining a high level of employment. Establishing a minimum wage has an impact on the cost of investing in Cambodia, and also affects productivity and competitiveness of labor in the region. The ministry and LAC have to balance these two interests with ensuring Cambodians remain employed and the jobs they do provide them with decent living standards.

According to article 107, the minimum wage may vary according to region, economic conditions, and variations in living standards in rural and urban regions. But the minimum wage must apply to all employees, regardless of their jobs or professions. Moreover, while variations in the wage would be appropriate for different regions, it would not be acceptable to impose different minimum wages for different workers. Even if a minimum wage is established, wages and salaries could still exceed the minimum wage based on negotiations between employees and employers and the supply and demand of skills.

Box 1: Minimum Wage

Article 104:

The salary must be at least equal to the guaranteed minimum wage, that is, it must ensure every worker a decent standard of living compatible with human dignity...

Article 107:

1. The guaranteed minimum wage is established without distinction among professions or jobs. It may vary according to region based on economic factors that determine the standard of living.
2. The minimum wage is set by a Prakas of the ministry in charge of labor in consultation with the Labor Advisory Committee. It is adjusted from time to time as economic conditions and the cost of living change.
3. Items to take into consideration when establishing the minimum wage shall include, to the extent possible:
 - the needs of worker and their families in relation to the general salary level in the country, the cost of living of other social groups;
 - economic factors, including the demands of economic development, productivity, and the advantages of reaching and maintaining a high level of employment.

Source: ILO and CLEC, “*Cambodian Employment and Labor Law*”

Though commissioned by the law, the ministry has not yet set a general minimum wage beyond establishing one for the garment sector, as required in article 107. In consultation with LAC, the ministry issued several notices concerning minimum wage for garment workers. The most recent notice was on July 18, 2000 for garment and shoe sewing workers. The notice 17/00 sets a minimum wage for probationary workers of US\$40 per month and US\$45 for non-probationary and piece workers. Additional bonuses are payable: US\$5 for workers coming to work regularly, 1000 riel per day in meal allowances for workers who work overtime. A seniority bonus of US\$2-5 for workers who stay longer than one year is also included. However, a revision under the Prakas No 745 dated October 23, 2006 increased the minimum wage to US\$ 50 per month, effective from January 1, 2007. But on April 4, 2008, with the demand by workers' unions for better pay, LAC agreed to provide an additional US\$6 per month to all workers in the garment industry as a cost of living adjustment.

5. Growth and Employment Linkage: A Decomposition Approach

This section is intended to explore the linkage between growth and employment. The approach relates changes in GDP per capita to changes in output per worker, in employment to working age population ratio, and in working age population to total population. This section also shows the changes in output per worker that are decomposed to measure the contribution of each sector to the change in GDP per capita. Finally, share of GDP by sector and value added per worker by sector will also be examined.

5.1. Decomposition of Changes in GDP per Capita

Growth, employment and productivity are interrelated. Sometimes, it is hard to determine the impact of productivity or employment generation on growth and output per worker. To better understand the linkage between growth and employment in Cambodia, changes in GDP per capita are decomposed into changes in output per worker, changes in employment to working age population ratio, and changes in working age population to total population.

To this end, the Shapley approach (*Annex*) is used to decompose changes in GDP per capita into the above three components. This composition of growth is linked to changes in employment productivity (output per worker) and population structure at an aggregate level and by sectors.

As table 11 shows, GDP per capita grew 32.1 percent and employment 13.0 percent between 2004 and 2007. Moreover, the share of employment to the working-age population also rose 1.7 percent, while output per worker (productivity) jumped 20.7 percent. This means that employment has increased at a lower rate than output per worker, suggesting higher labor force productivity. Jobs that are being created are being absorbed by growth of employment. Table 11 suggests that GDP per capita for the period increased 9.7 percent annually in conjunction with annual growth in employment of 4.2 percent. However, productivity seemed to grow even quicker, by an average annual rate of 6.5 percent.

Table 11: Employment, Output, and Population Change, 2004-2007

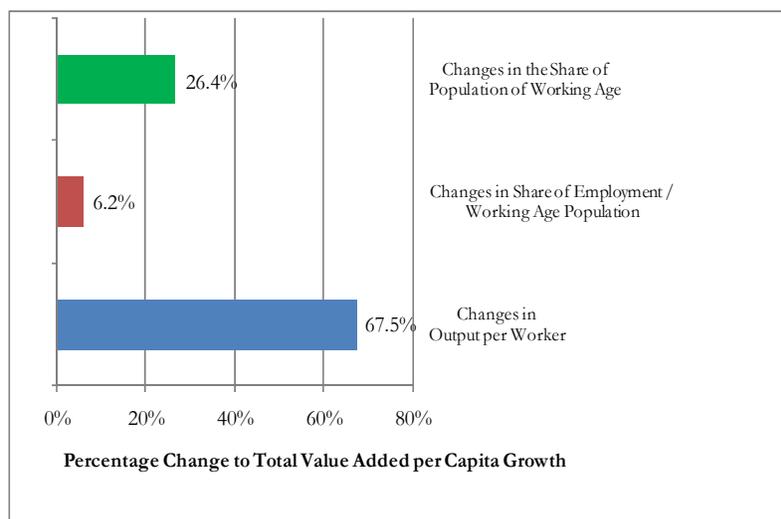
	Change	Average Annual Growth
Total Value Added	36.4%	10.9%
GDP Per Capita	32.1%	9.7%
Total Number of Employed	13.0%	4.2%
Total Population	3.3%	1.1%
Total Working Age Population	11.1%	3.6%
Share of employment/working age population	1.7%	0.6%
Output per Worker	20.7%	6.5%

Source: Data compiled from NIS and CSES 2007

Figure 6 below shows the result of decomposition at the aggregate level and the linkage between GDP per capita, demographic change, employment share of working age population, and output per worker. As the graph illustrates, 26.4 percent of the changes in GDP per capita can be linked to changes in the share of working age population. This means that change in share of working age population help GDP per capita increase 26.4 percent, or US\$31.9, for the period, all other things remaining equal. The growth was thanks to population growth among most age groups, especially older people.

The share of employment to working age population grew 6.2 percent during the period and changes in the share of employment positively contributed to GDP growth per capita. About 6.2 percent of the change in GDP per capita was attributed to the change in share of employment and, in terms of dollar, US\$7.4 was generated, representing about 2 percent of GDP per capita in 2004.

Figure 6: Decomposition of Changes in GDP per Capita 2004-2007



Source: Data compiled from NIS and CSES 2007

Changes in output per worker is responsible for 67.5 percent of changes in GDP per capita, equivalent to US\$81.6 and around 22 percent of GDP per capita in 2004. However, it is not known which sectors shared in gains to labor productivity. To determine how changes in labor productivity in each sector affect changes to GDP per capita, further decomposition of output per worker is needed. The decomposition is done among sectors--agriculture, industry and service--and inter-sectoral shifts of workers between sectors, from high productivity sectors to low productivity sectors and vice versa.

5.2. Decomposition of Changes in GDP per Capita due to change in output per worker

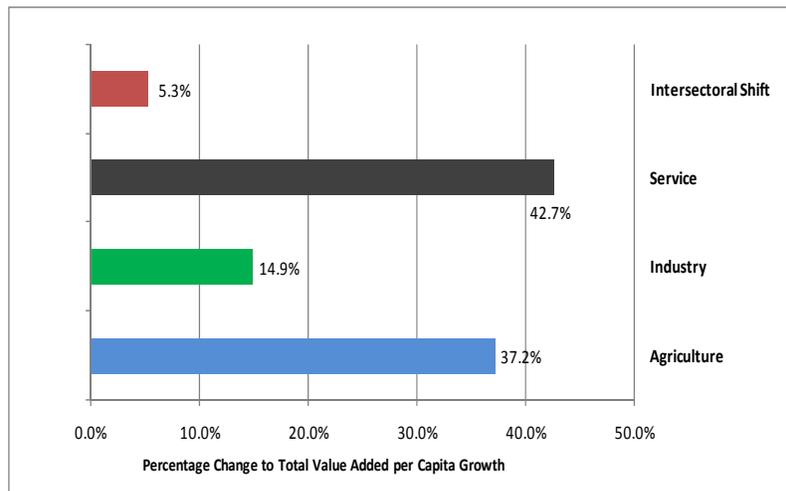
For further analysis of the decomposition, output per worker is decomposed to look at sectoral contributions to the change in GDP per capita. The total sectoral contribution is equal to the contribution of output per worker, which represents US\$81.6 to total change of GDP per capita.

Based on the decomposition, agriculture contributes 37.2 percent, or US\$30.4, of the total change in GDP per capita as the sector is positively linked to the change. It would be expected that increasing output per worker in this sector positively impact on the GDP per capita since more Cambodians work in agriculture than any other sector.

The service and industry sectors are also strongly linked to changes in GDP per capita. Output per worker in the industry sector contributed to 14.9 percent of the total change in GDP per capita, representing US\$12.1. To a larger extent, 42.7 percent of the total change in GDP per capita is related to the output per service sector worker, accounting for US\$34.8 of the change.

Although all the three sectors experienced positive gains in output per worker, inter-sectoral shifts also contributed to improvements to overall productivity. The inter-sectoral movement of labor across sectors means that workers in low-productivity sectors move to high-productivity sectors, resulting in the positive gains in output per worker as well as GDP per capita. Inter-sectoral shift represents 5.3 percent, or US\$4.3, of the total change of GDP per capita.

Figure 7: Decomposition of Changes in GDP per Capita by Sector



Source: Data compiled from NIS and CSES 2007

Decomposing inter-sectoral shifts may help explain the overall contribution of each sector to inter-sectoral shifts, which contribute to GDP per capita growth. In absolute term, the number of workers in each sector has increased but movement of workers varies for each sector. The movement of labor out of service sector accounts for a negative contribution of -18.3 percent in total inter-sectoral shift. The movement out of agriculture accounted for 29.6 percent of the shift while movement into industry contributed 88.7 percent to the shift.

Table 12: Decomposing Inter-Sectoral Shift by Sector 2004-2007

Sector	Direction of Employment Share Shift	Contribution to Inter-Sectoral Shift
Agriculture	Movement Out	29.6%
Industry	Movement In	88.7%
Service	Movement Out	-18.3%
Total		100%

Source: Data compiled from NIS and CSES 2007

Productivity gains in the agricultural sector were less than the average productivity for all sectors and its share of employment decreased between 2004 and 2007. Therefore, outflow of labor from this sector should impact positively on output per worker and the inter-sectoral shift. On the other hand, gains in productivity for the service and industry sectors exceeded average gains in productivity. Although the number of service workers in Phnom Penh and other urban areas increased, the share of employment in service sector dropped due to a decrease in service jobs in rural areas. Therefore, the outflow of employment from the service sector is expected to impact negatively on overall productivity and contribute negatively to inter-sectoral shift. On the contrary, the inflow of workers into the industry sector should positively affect both output per worker and inter-sectoral shift.

Since inter-sectoral shifts for workers across sectors contributes to growth in GDP per capita, the reallocation of labor across sectors can positively or negatively affect overall productivity and overall value added growth. Movement of workers to sectors with lower-than-average productivity would have a harmful effect on GDP per capita and the movement of workers out of sectors with higher-than-average productivity sectors also would be harmful to growth.

5.3. Share of GDP and Output per Worker by Sector

Table 13 below provides a breakdown of GDP growth and Table 14 shows output per worker by sectors. All sectors experienced positive growth between 2004 and 2007. The agriculture sector grew 39.6 percent, industry 34.3 percent and the service sector 35.4 percent. Gains in the industry sector were due to significant growth in most of its subsectors such as mining and quarrying, manufacturing and construction. On the other hand, growth in hotels and restaurants, financial intermediation, real estate and business activities, and transportation and communication accounted for gains in the service sector.

Table 13: GDP Growth and Share of Total Value Added by Sector, 2004-2007

Sector	GDP Change	Share of Total Value Added		
		2004	2007	Change
Agriculture	39.6%	31.2%	31.9%	0.7%
Industry	34.3%	27.2%	26.8%	-0.4%
Service	35.4%	41.7%	41.3%	-0.3%
Total	36.4%	100%	100%	

Source: Data compiled from NIS and WB Estimations

Although some sectors posted high growth, gains in value added were either small and/or even declined for some sectors for the period. Agriculture gained 0.7 percentage points while industry and the service sector posted losses of 0.4 and 0.3 percentage points, respectively, between 2004 and 2007, suggesting that agriculture's share of GDP grew while those of industry and service sectors dropped.

Table 14: Output per Worker and Employment/Working Age Population in 2004 and 2007

Sector	Value Added Per Worker (US\$)			Employment/Working Age Population		
	2004	2007	Change	2004	2007	Change
Agriculture	409	511	24.8%	46.5%	46.7%	0.2%
Industry	1,525	1,691	10.9%	10.9%	11.8%	1.0%
Service	1,169	1,417	21.3%	21.7%	21.8%	0.1%
Total	771	931	20.7%	79.1%	80.3%	1.2%

Source: Data compiled from NIS and WB Estimations

Table 14, above, shows a breakdown in output per worker by sector and ratio of employment/working age population by sector. The table also illustrates output per worker and GDP per capita in each sector. Agriculture's output per worker rose 24.8 percent, industry 10.9 percent and service sectors 21.3 percent, respectively, for the period. Total productivity jumped 20.7 percent and total employment ratio 1.2 percent for the period. Agriculture and service sectors registered increases in output per worker while employment/working age population ratios changed very little. But industry posted positive changes in output per worker and larger changes employment/working age population ratios than the other two sectors.

6. Potential Employment Scenarios

Cambodia's economy heavily relies on a few fragile sectors that are dominated by employees who have either no or low skills. When it comes to diversifying the country's base for economic growth, the issue of labor inevitably is raised. Currently, light industries, mainly garment factories that require workers to have many basic skills, exist in Cambodia, but skills are scarce for other jobs and

expatriate workers are being recruited for positions requiring higher skills. Cambodia has more than enough workers to supply emerging sectors, but thus far demand and supply have been mismatched due to the low quality and capacity of the labor force. The mobility of workers from one sector to another allows them to improve their skills and boost their earnings. Such movement also allows the reallocation of workers from sectors that have too many employees to sectors that have a shortage of qualified workers.

In fact, some industries, like the garment sector, create tens of thousands of jobs that are needed to absorb new entrants into the labor market. Investment in agro-industry and similar industries, which require low skilled workers, would benefit low-skilled labor in Cambodia. Employment in agriculture has seen steady decreases due to the growth of Cambodia’s industry and service sectors. Manufacturing has the potential to provide jobs for current and future workers and industrialization of the economy may ease issues related to job creation and contribute to sustainable growth. Though the benefits of industrialization are potentially huge, workers who possess the right skills are needed along with mechanisms to groom workers and improve their skills besides policies and strategies to promote investment.

Around 76.3 percent of Cambodia’s population was below the age 40 in 2007. However, people aged 15-39 accounted for only 42.8 percent of the total population and are the main source of labor. Given employment distribution by sector, most of the people in this age bracket work in the agriculture sector, where output per worker is lower than the average. As the sector becomes more efficient and fewer workers are needed in agriculture, job creation will be required and/or workers must be reallocated to other sectors. Diversification of the industry sector could help to absorb labor from the agriculture sector since the former currently employs a relatively small number of workers, only around 14.7 percent of total employed persons.

Table 15: GDP, Employment, and Output/Worker by Sector in 2007

Sector	GDP	Employment	Output/worker(US\$)
Agriculture	31.9%	58.1%	511
Industry	26.8%	14.7%	1,691
Service	41.3%	27.2%	1,417
Total	100.0%	100.0%	931

Source: Data compiled from NIS and CSES 2007

Table 7 clearly shows that GDP from agriculture is the lowest while the sector accounts for the biggest share of employment, leading to the lowest output per worker. This means that the potential is great to diversify the sector, which currently employs more people than are required. Most agriculture sector workers are own account workers and unpaid family workers and their employment is informal.

Assuming that worker output totals an average of US\$931 and given the current GDP of agriculture, only half (or around 2 million) of current workers in agriculture are needed. That makes

the other half available for new jobs. Therefore, diversification of the agriculture sector could create more jobs for the abundance of agricultural workers. From another viewpoint, the industry sector represented 26.8 percent of total GDP in 2007 with 14.7 percent of total employment. The diversification of this sector also could create jobs for agricultural workers as well as unpaid family workers and own account workers in the service sector.

It should be noted that unpaid family workers and own account workers in service sectors could also be a potential source of labor, but the most important consideration is whether new jobs exceed current opportunity costs. The growing industry sector could also absorb some, along with those in agriculture sector.

Although labor mobility between sectors may be one solution, many barriers to reallocation of workers remain related to skills, opportunity costs, willingness to change, absence of suitable jobs and the like. Some own account workers would bear high opportunity costs moving to other sectors since they run their own businesses, so their willingness and cost-benefit to get wage employment are important considerations. On the other hand, the potential exists for unpaid family workers, mostly in the rural agriculture sector, to move to other sectors since they are just working for their family and opportunity costs are relatively small. Most of them are young, school age. However, if they remain in least preferred segments, the return to their education may be negligible since they cannot utilize their skills to the fullest.

In terms of capacity and education, labor force quality cannot be stressed enough for businesses in Cambodia. Conversely, a large number of workers have limited educations with few opportunities to pursue vocational training. Moreover, most training centers focus on management, English, and basic computer skills while training programs in technical skills such as mechanics, electronics, and engineering are few and far between. Therefore, diversification of the economy may be stalled, at least in part and to an unknown extent, by limitations in labor force quality.

Based on the current potential for Cambodia's development and a growing demand for skilled labor (*as in Case Study 01 below*), workers with technical skills are critical to the growth of non-labor intensive industries. But demand for such skills currently is low and the schools needed to produce quality students with such skills are scarce. The question here is whether workers with such skills should be trained in anticipation of future demand or later when the industries are in place. Cambodia should prepare itself for future labor demands and the existence of such skills to some extent should attract potential investors in various industries. Experiences from other countries, such as Malaysia and Thailand, have show that cooperation between the government and private sector is required to provide essential skills for non-labor intensive sectors and curtail possible shortages in labor supply.

Box 2: Case Study of Skill Demand in Garment Industry in Cambodia

Cambodia has enjoyed double-digit economic growth in recent years, driven in part by the garment industry. Since the industry is labor-intensive, the current skill levels of workers do not pose many major challenges for investors. But garment factories continue to complain about a shortage of workers who have the skills and training needed to fill positions in production and human resource management, engineers and so on. To fill this gap, the factories have to employ expatriates who have the skills and experience they seek to work in higher paid manager or supervisor positions. The Cambodian labor supply cannot meet the demand partly due to the low education level of workers, and partly because of the poor education system and lack of vocational training related to the garment industry. According to the survey by the Garment Industry Productivity Center (GIPC), garment factories in Cambodia need three types of workers with skills that could be classified into four main areas: core skills, technical skills, social skills, and industry knowledge:

- *Production Workers:* are not required to possess many skills, though prior work experience with sewing is preferred. But factories also train skills necessary for operating sewing machines to new workers. Workers in these positions tend to have low educations with limited knowledge of literacy and numeracy.
- *Production Supervisors:* are expected to monitor and organize workers to facilitate production. Most factories seek people with literacy, leadership, and communication skills.
- *Production Management and Office Skills:* Factories do not have problems recruiting people with management and accounting skills, but garment industry-specific technical and production management skills in production costing and planning, industrial engineering, trade logistics and so on are hard to come by in Cambodia.

Currently, Cambodia's workforce can only satisfy the garment industry's demand for production workers and it is a real challenge for the labor force to provide skilled workers for other positions, especially production management since none of Cambodia's technical schools or universities tend to focus on these subjects. According to the GIPC survey, university graduate students see limited potential in pursuing garment industry careers even though the sector is one of the country's largest employers. This is due to the perception that garment factories are not good employers and would not provide university graduates with suitable employment.

Therefore, the linkage between local skill supply and garment industry's demand is weak, and a lack of training schools and cooperation between private and public sectors also are responsible for this. To address these problems, the Government should pay much more attention to training skills related to the industry and improve linkages between the available labor pool and labor demand. Moreover, immediate action should be taken to provide skills in a more timely fashion to push the garment industry development and improve its competitiveness.

Source: GIPC, Cambodia Garment Industry Workforce Assessment 2006

7. Conclusion

A few sectors have fueled recent growth in Cambodia. The country must diversify its economic base if it hopes to continue posting development gains and labor will prove instrumental in any such development.

Demographically, Cambodia's population has grown steadily with similar proportions of males and females. The population is young and dynamic, with people below the age of 25 representing 55.8 percent of the total population in 2007. Most people live in rural areas. This pattern is applied to all strata in Cambodia. Cambodia enjoys high employment participation rates for both males and females, especially in rural areas, where a large number of workers are available for work in new industries. But for this to happen first the quality and overall skill level of the labor force must be strengthened.

Paid employees represented a quarter of those employed in 2007 while own account workers and unpaid family workers accounted for 74.9 percent due to the highly informal nature of the labor market. Formalizing informal sectors would prove challenging due to opportunity costs.

Between 2004 and 2007, there was a decrease in the share of young labor aged 15-24, while the proportion of workers aged 45+ increased. Most young people work in the agriculture sector mainly as own account workers and unpaid family workers. As far as child labor, even though the rate has decreased, further policies are needed to discourage children from dropping out of school to work.

Educational levels among the labor force improved in 2007 as more Cambodians are becoming educated. Workers with primary school declined from 61.2 percent to 59 percent for the period but the number of workers reporting higher education, especially upper secondary and post-secondary levels, rose. In spite of this positive trend, employed Cambodians still tend to have very limited education. To improve labor quality, young people must receive at least a basic education and the role of vocational training must be enhanced. Moreover, Government support to private firms to train workers would help push through industrialization in Cambodia.

It is difficult for new labor market entrants to find jobs due to their low skills and also because only a few sectors have driven recent growth. Economic diversification and the movement of workers from agriculture to other sectors is needed to absorb new workers. New industries must create job opportunities for low-skilled workers and provide opportunities for on-the-job training to motivate workers and accelerate their development and the development of new industries.

Attention also must be placed on skills training for and the education of the next generation of workers. Child labor rates must be reduced so that more children have an opportunity to go to school. In addition, it is important to strengthen the skills of low paid workers in rural areas since they will be needed to supply most of the labor as Cambodia continues to industrialize.

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Annex

Below is the formula used in the report to decompose GPD per capita.

A simple way of understanding how growth has translated into increases in productivity and employment at the aggregate level and by sectors (or regions), is to perform a simple decomposition of growth in per capita GDP. To do so, note that per capita GDP, $Y/N=y$ can be expressed as:

$$\frac{Y}{N} = \frac{Y}{E} \frac{E}{A} \frac{A}{N}$$

Equation 1

Or:

$$y = \omega^* e^* a$$

where Y_i is total value added E is total employment, A is the total population of working age and N is total population. In this way $Y/E= \omega$ is total output per worker, E/A is the share of working age population (i.e. the labor force) employed and A/N is the labor force as a fraction of total population.

Thus changes in per capita value added can be decomposed into change in output per worker, changes in employment rates and changes in size of the labor force. Using shapely decomposition this will be equal to:

$$\begin{aligned} \Delta y = & \Delta \omega \left[\frac{e_{t=1}a_{t=1} + e_{t=0}a_{t=0}}{3} + \frac{e_{t=1}a_{t=0} + e_{t=0}a_{t=1}}{6} \right] + \Delta e \left[\frac{\omega_{t=1}a_{t=1} + \omega_{t=0}a_{t=0}}{3} + \frac{\omega_{t=1}a_{t=0} + \omega_{t=0}a_{t=1}}{6} \right] \\ & + \Delta a \left[\frac{\omega_{t=1}e_{t=1} + \omega_{t=0}e_{t=0}}{3} + \frac{\omega_{t=1}e_{t=0} + \omega_{t=0}e_{t=1}}{6} \right] \end{aligned}$$

The first term in the summation will be the contribution of changes in output per worker, the second term the contribution of changes in the employment rate and the third term the contribution to changes in the demographic component.

With this information we can present aggregate growth in term of each of these components:

$$\bar{\omega} \equiv \Delta \omega \left[\frac{e_{t=1}a_{t=1} + e_{t=0}a_{t=0}}{3} + \frac{e_{t=1}a_{t=0} + e_{t=0}a_{t=1}}{6} \right] / \Delta y \text{ will be the fraction of growth that can}$$

be linked to changes in output per worker,

$$\bar{e} \equiv \Delta e \left[\frac{\omega_{t=1}a_{t=1} + \omega_{t=0}a_{t=0}}{3} + \frac{\omega_{t=1}a_{t=0} + \omega_{t=0}a_{t=1}}{6} \right] / \Delta y \text{ will be the fraction of growth that can}$$

be linked to changes in the employment rate, and

$$\bar{a} \equiv \Delta a \left[\frac{\omega_{t=1} e_{t=1} + \omega_{t=0} e_{t=0}}{3} + \frac{\omega_{t=1} e_{t=0} + \omega_{t=0} e_{t=1}}{6} \right] / \Delta y$$

will be the fraction of growth that can be linked to changes in the share of total population that is of working age; where the bar denotes the fraction of growth explained by the component. In this way percentage growth between two periods can be expressed as:

$$\frac{\Delta y}{y} = \omega \frac{\Delta y}{y} + e \frac{\Delta y}{y} + \bar{a} \frac{\Delta y}{y}$$

Once we have decomposed aggregate employment growth we can go further and understand i) the role played by different sectors in changes in employment and ii) the role of capital, Total Factor Productivity and inter-sectoral shifts in explaining changes in output per worker, both at aggregate level and by sectors. This amounts to doing a step wise decomposition: first decomposing aggregate growth into employment and productivity changes and the composing employment and productivity changes by sectors.

Understanding which sectors contributed most to employment generation.

To understand which sectors contributed to the most of the employment generation we can further decompose employment growth (Δe) by sectors. The easiest is of course to express the total growth in employment as the sum of employment generation in each sector.

$$\Delta e = \sum_{i=1}^s \Delta e_i$$

Where $\Delta e_i = \Delta \frac{E_i}{A}$ is just the change in employment in sector i as a share of total working age population. Let $e_i \equiv \Delta e_i / \Delta e$, denote the fraction of the aggregate employment rate change that can be linked to changes in employment in sector i . The supra-index e will make explicit that it is the contribution to employment growth (as opposed to total per capita growth).

Decompose changes in output per worker by sectors and in between and within sector components

We can further decompose output per worker into sectoral employment shifts and changes in output per worker by sectors by noting that:

$$\frac{Y}{E} = \sum_s \frac{Y_i}{E_i} \frac{E_i}{E}$$

Or equivalently:

$$\omega = \sum_{i=1}^s \omega_i s_i$$

Where Y_i is value added of sector $i = 1, \dots, S$, E_i is employment in sector i , and E is total

employment. This means that $\omega = \frac{Y_i}{E_i}$ will correspond output per worker in sector i ,

$s_i = \frac{E_i}{E}$ is the share of sector i in total employment. This equation just states that changes

in output per worker are the weighted sum of changes in output per worker in all sectors where the weights are simply the employment share of each sector.

Using the Shapely approach, changes in aggregate output per worker can be decomposed as:

$$\Delta\omega = \underbrace{\Delta\omega_1 \left(\frac{s_{1,t=0} + s_{1,t=1}}{2} \right) + \Delta\omega_2 \left(\frac{s_{2,t=0} + s_{2,t=1}}{2} \right) + \dots + \Delta\omega_i \left(\frac{s_{i,t=0} + s_{i,t=1}}{2} \right)}_{\Delta\omega_w} + \underbrace{\sum_{i=1}^S \Delta s_i \left(\frac{\omega_{i,t=0} + \omega_{i,t=1}}{2} \right)}_{\Delta\omega_B}$$

Each term $\Delta\omega_i \left(\frac{s_{i,t=0} + s_{i,t=1}}{2} \right)$ are the change in output per worker due to change in

output per worker in sectors. The last term in the equation $\Delta\omega_B$ is the change in output per worker due to inter-sectoral employment changes (i.e. between sectors). That is employment movements from low productivity sectors to high productivity sectors should increase total output per worker, and the flows from high productivity sectors to low productivity sectors should reduce aggregate output per worker. If this last term is negative the reallocation of employment by sectors was detrimental to overall productivity growth. Finally, the term $\Delta\omega_B$ corresponds to total changes in output per worker net of relocation effects (or within component).

We can then denote the fraction of aggregate output per worker growth that can be linked

to growth in output per worker in sector i as $\bar{\omega}_i \equiv \Delta\omega_i \left(\frac{s_{i,t=0} + s_{i,t=1}}{2} \right) / \Delta\omega$, where again

the bar denotes the fact that we are referring to contribution, and the supra-index denotes the fact that it is a contribution to aggregate output per worker growth ω , rather than a contribution to output per capita growth y .

Similarly we can define the contribution of within sector productivity growth as $\bar{\omega}_w \equiv \Delta\omega_w / \Delta\omega$

and the contribution of inter-sectoral shift as $\bar{\omega}_B \equiv \Delta\omega_B / \Delta\omega$

Understanding the role of each sector on inter-sectoral shift

It is possible to understand further how changes in the share of employment in the different sectors help explain the overall contribution of inter-sectoral shifts to per capita growth. An

important literature has found that structural change, which is movements of labor force shares from low productivity sectors to high productivity sectors, is an important factor behind growth. Increase in the share of employment in sectors with above average productivity will increase overall productivity and contribute positively to the inter-sectoral shift term. On the contrary, movements out of sectors with above average productivity will have the opposite effect. By the same token, increase in the share employment in their share should contribute positively to growth.

Using the above intuition we can rewrite the inter-sectoral shift as:

$$\Delta \omega_B = \sum_{i=1}^s \Delta S_i \left(\frac{\omega_{i,t=0} + \omega_{i,t=1}}{2} - \frac{\omega_{t=0} + \omega_{t=1}}{2} \right)$$

The term in the parenthesis is the difference between a sector i 's productivity (averaged between the two periods) $\frac{\omega_{i,t=0} + \omega_{i,t=1}}{2}$ and the average (over the two periods) productivity of all the economy (note there is no sectoral sub-index) $\frac{\omega_{t=0} + \omega_{t=1}}{2}$.

Therefore, the contribution of sector i to the inter-sectoral shift term will be:

$$\Delta S_i \left(\frac{\omega_{i,t=0} + \omega_{i,t=1}}{2} - \frac{\omega_{t=0} + \omega_{t=1}}{2} \right)$$

Thus, if sector i has productivity below the average productivity, and increase its share S_i , its contribution will be positive, that is outflows from this low productivity sector have contributed to increase output per worker. If on the other hand, if the sector sees an increase in its share, these inflows into this low productivity sector will decrease output per worker and thus have a negative effect on the inter-sectoral shift term. The magnitude of the effect will be proportional to: i) the difference I the sector's productivity with respect to the average, and ii) the magnitude of the employment shift.

As before we can denote the share of inter-sectoral shift that is explained by sector i as:

$$\bar{s}_i^{\omega_B} = \Delta S_i \left(\frac{\omega_{i,t=0} + \omega_{i,t=1}}{2} - \frac{\omega_{t=0} + \omega_{t=1}}{2} \right) / \Delta \omega_B$$