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Cape Verde:
Initial Assessment of the Formal Labor Market

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CURRENCY EQUIVALENTS

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76 CVE = US$1

GOVERNMENT FISCAL YEAR

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Abbreviations and Acronyms

FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNI	Gross National Income
GCV	Government of Cape Verde
ICA	Investment Climate Assessment
IDRF	Household surveys (*Inquérito ás Despensas e Receitas Familiares*)
IEFP	Insitute for Employment and ProfessionalTraining *(Instituto do Emprego e Formação Profissional)*
INE	National Statistics Institute (*Instituto National de Estatística*)
INPS	National Intitute for Social Protection *(Instituto Nacional de Previdência Social)*
PRSC	Poverty Reduction Strategy Credit
QUIBB	Unified Survey of Basic Welfare Indicators *(Questionário Unificado de Indicadores Básicos de Bem-Estar)*
SME	Small and Medium Enterprise
TVET	Technical, Vocational and Educational Training

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EXECUTIVE SUMMARY

In the last 25 years, Cape Verde has made impressive progress in their historical transition from a centrally planned to market economy. Building the institutional foundations of a market economy, this small nation of islands located off the coast of West Africa has developed a vibrant private sector and opened to international trade. This has ignited economic growth, which in turn has brought about higher incomes and reduced poverty. Currently, Cape Verde has a well-functioning market economy and as a result graduated from the ranks of the low income countries to one of middle-income status. Such a successful transition, achieved over a short period of time, exceeded many observers' expectations.

But the transition and recent growth have been disappointing in one key area—jobs. Job opportunities remain scarce in the formal sector and the informal sector is still relatively large and may be growing. As a result, high unemployment and underemployment have emerged as important policy issues. While some unemployment was expected throughout this period of transition to a market economy, the surprise lay in its persistence. Many workers have failed to find new jobs or remain in the informal sector for long stretches of time. The unemployment rate is stuck in the double digits.

Persistently high unemployment carries significant social and political costs—long-term unemployment threatens to erode skills, aggravates poverty and inequality, and eventually leads to social marginalization. Going forward, poor job prospects, if not improved, will act as a brake on the substantial poverty reduction that has occurred and will undermine political support for needed economic reforms.

Persistently high unemployment at a time of relatively long-lived economic growth is perplexing. This phenomenon points to possible labor market rigidities whose causes and magnitude have yet to be identified or explained. This study was prompted by the need to focus attention on the causes of high unemployment that persists alongside historically high economic growth. In addition, there is a need to understand the question of diverse labor market outcomes across several islands; namely how unemployment rates can vary so markedly across islands for sustained periods of time.

In any economy, the issue of high and persistent unemployment centers on the ***dynamics of net job creation*** linked to firm entry and firm expansion. The issue of disparities in labor market outcomes centers on the tendencies of ***reallocation of jobs and workers*** away from less productive regions, sectors and firms toward more productive economic activities. This study finds that in both fronts—net job creation and reallocation—there is reason for optimism. Job creation is substantially above job destruction. With respect to divergent labor market outcomes across islands, there is a trend towards convergence indicating that a national and integrated job market is emerging. Furthermore, as expected, these two developments are highly interlinked; emigration from areas and sectors characterized by relatively lower job growth and immigration into regions and sectors with relatively higher job growth is taking place.

The study also offers preliminary findings about the effects of a public sector wage premium on labor market outcomes and, separately, there are indicative findings on factors that may be affecting the decision of workers to enter and stay in the informal sector or enter into formal employment.

Chapter 1 – INTRODUCTION

Unemployment in Cape Verde is persistently high. Even when economic growth was at historically high rates, unemployment rates did not decline as much as expected. In addition, unemployment rates vary substantially across the nation's nine inhabited islands and these differentials are stubbornly persistent as well. Persistent differentials in labor market performance across islands may be a symptom of rigidities and obstacles to adjustment. These trends and conditions in labor market outcomes are a major concern of Cape Verde's Government and its citizens.

1.1 Cape Verde is a small archipelago of ten islands located some 650 kilometers (300 miles) off the west coast of Africa. The country has around 500,000 inhabitants and is relatively small with an area of 4,036 square kilometers. Cape Verde has few natural resources[1] and suffers from serious water shortages. These water shortages are exacerbated by cycles of long-term drought that have contributed to significant emigration throughout Cape Verde's history. It is believed that around twice as many Cape Verdeans live abroad as on the islands.[2] Those that have emigrated maintain close relations with the country, sending home remittances an equivalent to 9.2 percent of GDP in 2007.

1.2 Cape Verde has experienced robust economic growth in recent years, raising the nation to the ranks of lower middle income countries. Real GDP averaged 7 percent during 2004–07, peaking at 10.8 percent in 2006. This growth was translated into rapid growth in real income per capita and reductions in poverty. During 2005-2008 income per person rose at 5 percent per year, faster than in most small island states or the average for Sub-Saharan Africa. The analysis of the latest three poverty surveys[3] suggests that the share of the population in absolute poverty decreased from 49 percent in 1988-89 to 37 percent in 2001-02 and to 27 percent in 2007 (see Table 1-1, below).

1.3 The national statistics, however, masks substantial disparities in economic outcomes across social groups and between rural and urban areas. Inequality across social groups, for example, rose sharply during the 1990s and has remained relatively high.[4] A good part of this rising inequality is tied to the differing fortunes between rural and urban areas. Poverty is most severe in rural areas,

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[1] The most important natural resources are salt, pozolan (volcanic rock used in cement production) and limestone.

[2] The population in Praia, the capital, is estimated at 106,052 and in Mindelo, the second largest city, at 67,844. Some 500,000 people of Cape Verdean ancestry live in the United States, mainly in New England. Portugal, France, Italy, Senegal and the Netherlands also have large Cape Verdean communities.

[3] These comprise the 1988-89 and 2001-02 IDRF household surveys (*Inquérito ás Despensas e Receitas Familiares*) and the 2007 QUIBB (Unified Survey of Core Welfare Indicators).

[4] The Gini coefficient for consumption, an index used to measure the extent of inequality, was 0.49 in 2007.

where 72 percent of the country's poor live and where 30 percent of the population lives in absolute poverty, compared to 12 percent of the urban population. Urban households have an expected level of consumption 35 percent higher than rural households.

TABLE 1-1: MACROECONOMIC INDICATORS, 2004-12

Indicator	2004	2005	2006	2007	2008	2009[1]	2010[2]	2011[2]	2012[2]
Real GDP growth (% annual change)	4.4	6.5	10.8	6.9	6.0	3.5	5.0	6.6	6.3
Real GDP per capita growth (% annual change)	2.5	4.6	8.8	5.0	4.0	1.6	3.0	4.5	4.3
CPI annual average (% annual change)	-1.9	0.4	4.8	4.4	6.8	3.3	2.7	2.0	2.0

[1]Preliminary; [2]Projections

Source: IMF, Ministry of Finance and Public Administration, and Staff estimates.

1.4 Disparities in economic performance reflect the geographic specificity of the economic transformation towards a service-based economy, led by the tourism and the communications sector, that the Cape Verdean economy has been experiencing recently. Tourism is concentrated mostly in the islands of Sal more recently on the island of Boa Vista and attracted large sums of private investment (through significant FDI), tourism and public investment on tourism infrastructure. São Vicente, especially Mindelo with its deep water port and the city of Praia (on the island of Santiago) have benefited from large public infrastructure investments directed largely towards infrastructure development and private investments concentrated in the development of the communications and financial intermediary industries.[5]

1.5 Disparities in economic performance across islands also reflect the islands' rural or urban nature. Generally, sectors that prevail rural areas, such as agriculture and fisheries, performed less well than emerging sectors in the more urbanize regions of Cape Verde. Because some of the islands are more rural than urban, poverty decreased relatively more rapidly in more urbanized island of Sal, and the cities of Mindelo and Praia have benefited in terms of relatively high reductions in poverty especially over the last six years. The most rural islands (Santo Antão, Santiago, São Nicolau and Fogo) remained relatively poorer and sustained economic growth has been the weakest.[6]

1.6 Finally, as in many other countries, disparities in economic outcomes across Cape Verde, such as by poverty, are highly interrelated to employment trends and conditions. In Cape Verde approximately 64 percent of household income from wages.[7] For 2001/02, approximately 29 percent of those employed are poor while the rate of poverty for the unemployed is nearly 50 percent. While the correlation between poverty and unemployment is high, the sector in which a person is employed in can also be a large determinant of their economic well-being. Workers in the

[5] Services account for 76 percent of GDP, compared to 17 percent for industry and 8 percent for agriculture.

[6] Food Vulnerability Study of Families in Rural Areas, Food Security Services Department, 2005.

[7] Ministério da Qualificação e Emprego (2008), Estudo/Diagonóstico sobre o mercado de emprego em Cabo Verde, page 44.

agriculture and fisheries sectors, for example, have the highest rates of poverty; approximately one-third of workers in these sectors live below the poverty line.

1.7 Government's interest in policies that promote employment growth is based on their acknowledgement that employment generation is central to their poverty reduction strategy. And as recent experience teaches, historically high economic growth was not enough to bring employment to all social groups, to a majority of rural areas and to all islands. More than rapid economic growth is required to bring about employment growth.

TABLE 1-2: TRENDS IN POVERTY, 2001-02 AND 2007

	2001-2002				2007			
	Headcount	Poverty Gap	% of the population	% of the poor	Headcount	Poverty gap	% of the population	% of the poor
Urban and rural areas								
Urban	25.0	7.9	55.1	37.5	13.2	3.3	56.8	28.2
Rural	51.1	20.0	44.9	62.5	44.3	14.3	43.2	71.8
Strata/Islands								
Praia in Santiago	19.1	5.0	22.0	11.4	11.6	2.7	25.0	10.9
Rest of Santiago	49.3	19.2	32.4	43.6	41.5	13.3	29.9	46.6
Santo Antão	54.2	22.1	10.8	15.9	45.6	14.4	9.5	16.3
São Vicente	25.5	7.9	15.2	10.6	13.6	3.2	15.6	8.0
Fogo	42.1	15.8	8.8	10.1	39.0	13.2	8.1	11.9
Other islands	28.6	9.6	10.9	8.5	14.3	3.9	11.8	6.3
Socio-economic group								
Wage workers	31.9	12.1	36.8	31.9	18.7	5.6	35.9	25.2
Self-employed agriculture	45.3	16.5	9.9	12.3	42.9	14.5	8.5	13.6
Other self-employed	28.9	10.0	16.6	13.1	20.8	6.1	17.1	13.3
Other dependants	57.1	21.6	3.6	5.7	35.9	12.5	4.6	6.2
No employment	41.2	14.5	33.0	37.1	32.7	9.5	34.0	41.7
National	36.7	13.3	100.0	100.0	26.6	8.1	100.0	100.0

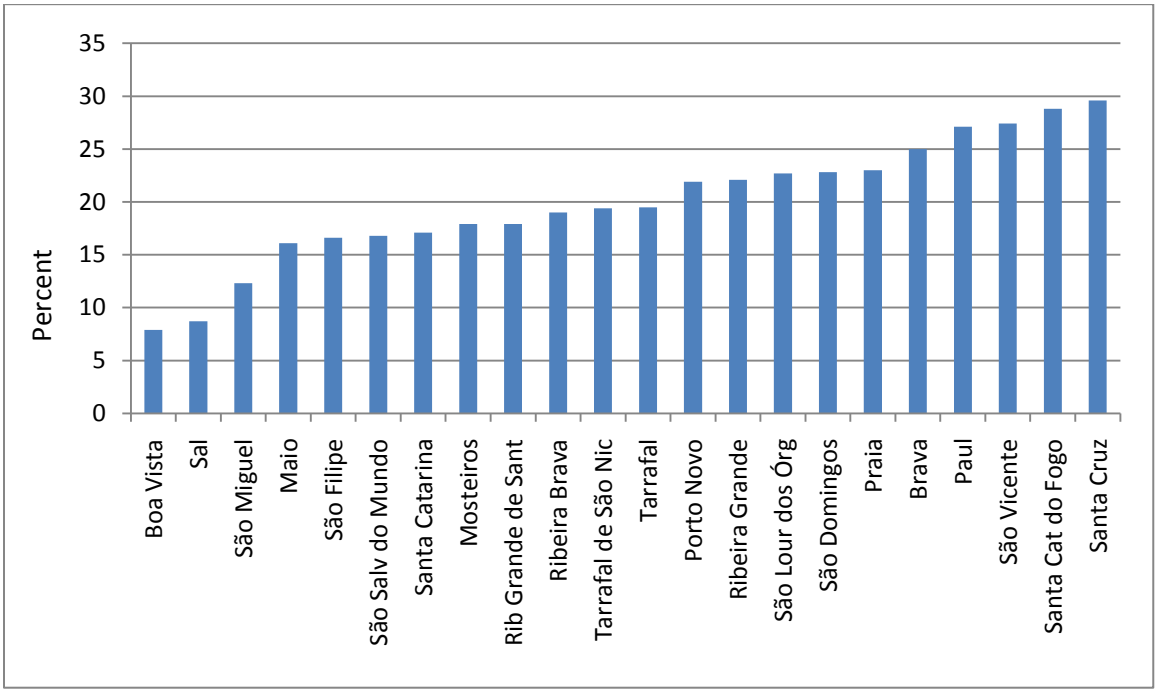
Source: Instituto National de Estatística and Bank staff.

1.8 Persistently high unemployment remains one of the Cape Verde's most pressing economic problems. In 2007, the unemployment rate was 21.7 percent. Among workers who were 15-24 years old, a staggering 41.8 percent were unemployed. On that same year, female unemployment was higher than male unemployment (25.7 versus 18.2 percent) and urban unemployment is slightly higher than rural employment (22.8 versus 20.0 percent). Though the share of the labor force unable to find formal work had fallen from 26 to 21 percent between 1998 and 2006, this

relative high rate of unemployment persisted alongside a period where real GDP grew at an annual average rate of 5.3 percent in 2001-05 and accelerated to an annual average rate of 6.5 percent in 2003-07.[8] Underemployment is also a major concern of Cape Verde's population. Among the employed population, a relatively high 15.7 percent declares working part time, and 24.1 percent work less than 35 hours per week.

1.9 The manner in which unemployment is estimated in Cape Verde is consistent with the method used by the International Labor Organization.[9] However, because this study focuses on within country measures, not across countries, cross country differences in the methodologies used to estimate unemployment should not matter to the points made about differentials in the rate of unemployment across islands and the permanency of these differentials. There is no reason to believe that the upward bias in the estimation of the size of the unemployed workers is more attenuated or exaggerated according to region.

FIGURE 1-1: UNEMPLOYMENT BY CITY IN 2007



Source: INE 2008 using QUIBB 2007

[8] Economic Intelligence Unit (2008), Cape Verde Country Profile.

[9] *Instituto do Emprego e Formação Profissional* (IEFP) counted a person to be unemployed if the person (a) had not worked at least 1 hour during the reference week and had not been absent from a job during the reference week; (b) be available to work in the next two weeks; and had actively sought a job in the last four weeks preceding the start the investigation. In addition, individuals who fall under the first two criteria, but did not seek work for: (a) illness / accident; (b) family responsibilities; (c) home briefly from a work / business; or (d) a student. This is consistent with the ILO definition.

1.10 Reflecting the disparate economic outcomes across islands discussed above, there are sizeable regional differences in unemployment rates across islands. In Santa Cruz, on the island of Santiago, for example, the unemployment rate was nearly 30 percent in 2007 while in Boa Vista the unemployment rate was closer to 7 percent (see Figure 1-1, below). While it is not clear that this difference in unemployment rates between these two extremes is always this stark, it should be noted that this statistic was recorded at the peak of several years in the nation's economic growth. Such sizeable differences in unemployment and their historical persistence seem to indicate rigidities in the labor market's ability to adjust.

1.11 These large differences in unemployment rates are unlikely to be explained by differences in demography across islands. There are instances where some regions of the country may be more heavily populated by the very young or relatively older workers and unemployment rates may differ in large part because of these differences. However, there are no apparent differences across islands with respect to the predominance or relative absence of one age cohort in one island as compared to another (see Table 1-3, below)

TABLE 1-3: EMPLOYED POPULATION BY AGE GROUP AND ISLAND (2006)

Age group	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Less than 35 years	44.4	51.8	63.0	50.1	48.6	50.6
15-24 years old	16.7	19.6	25.6	26.0	29.4	24.5
25-34 years old	27.8	32.1	37.8	24.1	19.1	26.1
35-44 years old	31.1	27.7	21.0	24.0	19.5	24.6
45-54 years old	15.8	14.7	11.6	14.9	21.3	15.3
55-64 years old	4.6	4.2	2.8	4.8	6.3	4.7
65+ years old	4.0	1.7	1.0	5.9	4.3	4.6
No response	0.0	0.0	0.1	0.2	0.1	0.1
Total	100	100	100	100	100	100

Source: INE 2008 using QUIBB 2007

1.12 While demographic differences between islands is unlikely to be a major factor in the large differences in unemployment rates across islands, it is important to understand the predominant demographic characteristics of the unemployed nonetheless.

PROFILE OF THE UNEMPLOYED

1.13 In October of 2006, Cape Verde's labor force was comprised of 183,254 individuals, of which 49,680 were gainfully employed and 33,574 were unemployed. This corresponds to an unemployment rate of 18.3 percent nationally. Santo Antão was the island with the highest rate of unemployment, where 27 persons were unemployed for each 100 people in the labor force. São Vicente with a rate of unemployment at 25 percent was the second highest, and higher than the national average rate of unemployment. Sal was the island with the lowest rate of unemployment (9%), approximately nine points below the national rate of unemployment. São Vicente, Santiago and Fogo comprised the group of islands with unemployment rates below the national rate (see Table 1-4).

TABLE 1-4: ACTIVE POPULATION, EMPLOYED AND UNEMPLOYED. LABOR FORCE PARTICIPATION RATE AND RATE OF UNEMPLOYMENT BY ISLAND (2006)

	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Active population	16,552	32,875	9,559	109,037	15,231	183,254
Employed	12,065	24,696	8,699	90,811	13,409	149,680
Unemployed	4,487	8,179	860	18,226	1,822	335,74
Unemployed (%)	13.4	24.4	2.6	54.3	5.4	100.0
of which had worked (%)	62.3	73.9	68.3	61.9	58.0	64.8
Unemployment rate (%)	27.1	24.9	9.0	16.7	12.0	18.3

Source: ISE 2006 IEFP/INE

1.14 Nearly two out of every three unemployed person had, at one time, a job (65%) (see

1.15 Table 1-4, fifth row). The loss of a job was a relatively more pronounced in São Vicente where 74 out of each 100 unemployed worker had worked and Fogo was the island where unemployment was less likely caused by a loss of work since 58 percent of the unemployed had previously worked.

1.16 Unemployment is not only high but it can also be a long-term problem in Cape Verde. Survey data of the unemployed indicate that the unemployed actively search employment. The vast majority (81%) sought employment in the last six months, and this is approximately the case in all islands. The greatest proportion of unemployed searching for work is in São Vicente (90%) and the lowest proportion was in Fogo (53%). It is the case that in the relatively less economically dynamic areas of the country—Fogo and Santo Antão—the data indicate the lowest proportion of the unemployed actively seeking employment. In comparison, the relatively more favorable economic conditions in the islands of Sal, Santiago and São Vicente are likely encouraging workers to continue to seek employment (see Table 1-9).

TABLE 1-5: REASON FOR UNEMPLOYED NOT HAVING FOUND WORK BY ISLAND (2006)

	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
There was no work available	92.8	91.9	79.0	82.5	76.7	85.9
Other reasons	7.2	8.1	21.0	17.5	23.3	14.1

Source: *ISE* 2006 *IEFP/INE*

1.17 Of the unemployed workers searching for work, survey data suggest that approximately 86 out of 100 of the unemployed did not find work because "There was no work available". The highest proportion of the unemployed responding in this way is in Santo Antão (93%) (see Table 1-5).

1.18 There are indications that of those unemployed who have stopped looking for work, these unemployed workers postpone their search for relatively long periods of time. Of the 18,094 unemployed who have worked and who have been unemployed for five years or less, only 2,031 sought employment, the equivalent of 11 percent, in the six months prior to the implementation of

the survey. Approximately 35 percent postponed their search for employment by more than six months (see Table 1-6) and this was approximately the same proportion across all islands except for one exception. The island of Sal, where employment growth has been the fastest in recent years, had no unemployed workers postponing their search for more than six months.

TABLE 1-6: DURATION OF DECISION OF UNEMPLOYED TO STOP LOOKING FOR EMPLOYMENT BY ISLAND (2006)

Length of time not searching	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Six months or less	65.3	67.3	100.0	63.0	67.6	64.9
Longer than six months	34.7	32.7	0.0	37.0	32.4	35.1

Source: *ISE* 2006 *IEFP/INE*

1.19 In Cape Verde unemployment pushes people into poverty, especially unemployment of long duration. According to recent studies, for each additional week of unemployment the income of the household head decreases by approximately 1.8 percent in rural and 1.9 percent in urban areas. On average after 50 weeks of unemployment, Cape Verdean families have a significantly increased probability of becoming poor; meaning, falling below an annual consumption per capita of CVE $43,250 (poverty line). Survey data below (see Table 1-7) suggest that a large number of workers experience long spells without employment.

TABLE 1-7: DURATION OF UNEMPLOYMENT BY ISLAND (2006)

Duration of unemployment	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Last 12 months (%)	70.0	66.2	65.2	69.2	75.2	68.4
Last 9 months (%)	55.6	61.7	58.3	63.6	72.3	62.4

Source: *ISE* 2006 *IEFP/INE*

1.20 Many unemployed workers and their households in Cape Verde receive income from sources outside of a full-time job. Other sources of income, other than a full-time job, are how many unemployed workers keep their households from falling into poverty. According to data compiled through a household survey in 2006, a large number of households (nearly 63%) receive some income from family members in the country while they are unemployed. The greatest proportion of households receiving help from members of the family outside of Cape Verde is found in Fogo (15%). Pensions are relatively infrequent source of income for households across the country. However, there is some variation, across islands, with respect to income coming from "work"; 44 percent of households in Santo Antão indicate that this is a source of income when the head of household is unemployed while only 18 percent indicate that this is the case in Fogo (see Table 1-8).

TABLE 1-8: UNEMPLOYED SOURCES OF INCOME BY ISLAND (2006)

Income sources	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Menial work	43.7	25.4	20.7	20.9	18.4	24.8
Pension	0.0	0.9	0.0	0.8	0.0	0.6
From family members in Cape Verde	48.8	56.8	68.1	68.5	65.9	62.7
From family members outside Cape Verde	1.9	10.1	5.3	6.8	14.5	7.5
Other means	3.4	3.8	4.0	2.3	0.0	2.7
No response	2.2	3.0	2.0	0.8	1.2	1.6

Source: ISE 2006 IEFP/INE

1.21 These data on alternative sources of income during stretches of unemployment are important in that these are an indication of how urgent it may be to seek employment. In the table below, (Table 1-9). It is hypothesized that unemployed workers that receive outside help, may be less willing to seek employment than if help were not available. By graphing the data from the first row Table 1-6 against data that is the sum of the third and fourth row of Table 1-5, there is a slight negative correlation,[10] by region (excluding data for all of Cape Verde) between the willing to look for work and the probability that the household receives income from family members (see Figure 1-2).

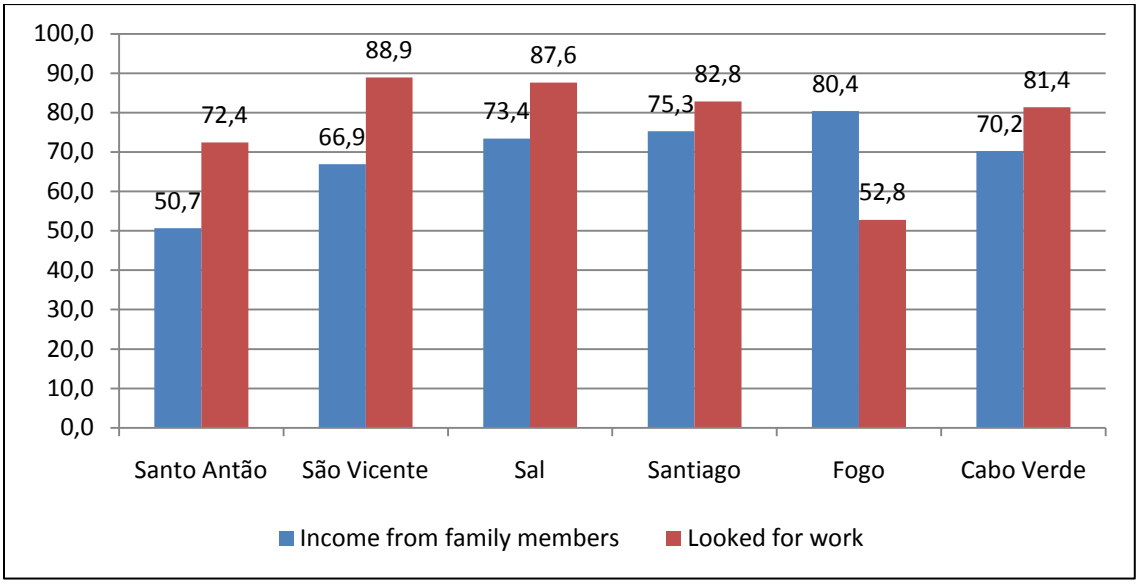
TABLE 1-9: RESPONSES TO WHETHER UNEMPLOYED SOUGHT EMPLOYMENT BY ISLAND (2006)

	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Looked for work	72.4	88.9	87.6	82.8	52.8	81.4
Did not look for work	24.6	8.9	5.7	13.3	31.8	14.5
Does not know/did not respond	2.9	2.2	6.7	3.9	15.4	4.1
Total	100	100	100	100	100	100

Source: *ISE* 2006 *IEFP/INE*

[10] Correlation is -.19

FIGURE 1-2: RELATIONSHIP BETWEEN INCOME SUPPORT FROM FAMILY AND WILLINGNESS TO SEARCH FOR WORK, NATIONALLY AND BY ISLAND (2006)



Source: *ISE* 2006 *IEFP/INE*

UNEMPLOYMENT IS ACUTE PROBLEM FOR YOUNG

1.22 While an average of 18 out of 100 workers is unemployed, out of this pool, 33 out of 100 these unemployed workers are between 15 and 24 years of age; roughly twice as high as the national unemployment rate. The unemployment rate of the population between the ages of 25 and 34 is roughly equal to the national average. The rate decreases for the population of workers of age 60 plus, at 2 percent, and increases slightly among workers between the ages of 55 and 64. On all islands the relative level of unemployment among young people of 15-24 years is far above the national unemployment rate. Santo Antão is the island with highest incidence of unemployment overall and for the young as well. There about 49 percent of the workers of 15-24 years are unemployed and 29 in 100 among workers between the ages of 25 and 34 years of age. The unemployment rate decreases with age around 22 and 1 percentage point above the average island (27%) (see Table 1-10).

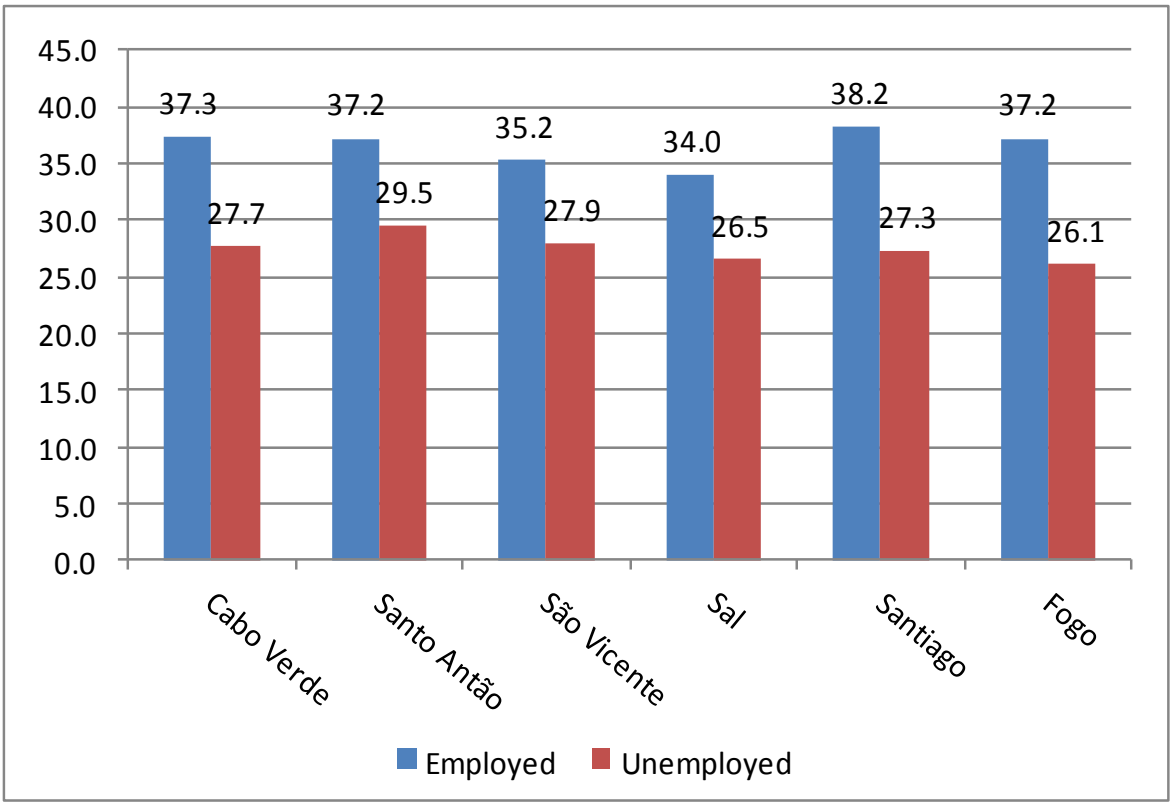
TABLE 1-10: UNEMPLOYMENT RATE BY ISLAND AGE GROUP (2006)

Island	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years	Total
Cabo Verde	32.3	17.8	10.5	10.5	6.0	2.2	18.3
Santo Antão	48.6	28.5	15.9	19.7	8.0	5.2	27.1
São Vicente	42.5	27.4	10.8	14.9	8.2	9.5	24.9
Sal	18.3	5.4	5.8	4.1	7.1	0.0	9.0
Santiago	30.8	13.4	10.5	9.7	5.1	1.6	16.7
Fogo	20.7	16.9	4.4	3.3	5.5	0.0	12.0

Source: *ISE* 2006 *IEFP/INE*

1.23 Also, with respect to the island of Santiago, where 31 percent of the active young, between the ages of 15 to 24 years of age, are unemployed, approximately 14 percentage points above the unemployment for the island while all older age groups mark unemployment rates below the average rate for the island. In Fogo, the unemployment rates is close to 21 percent among youth aged 15-24 years and 17 percent among those aged 25-34, all above the average of the island and the levels are below average for all older age groups (see Table 1-10).

FIGURE 1-3: AVERAGE AGE OF EMPLOYED AND UNEMPLOYED, NATIONALLY AND BY ISLAND (2006)



Source: *ISE* 2006 *IEFP/INE*

1.24 At least 52 out of 100 unemployed is aged between 15 and 25 years and just over three in four (77%) are between 15 and 35 years of age, while the average age is 27.7. In the island of Fogo, the average age of the unemployed is youngest (26.1 years), but the unemployed populations of Santiago and Sal are also below the national average (26.5 and 27.3 years respectively) (see Figure 1-3). The unemployed populations from São Vicente and Santo Antão are relatively older, with an average of 27.9 and 29.5 years of age respectively, and are both above the national average.

1.25 The unemployed are relatively younger than the employed. The unemployed are, on average, 9.6 years younger than the employed and in Santiago and Fogo, the age difference between these two groups is more pronounced (10.8 and 11.0 years respectively) (see Figure 1-3). In Santo Antão, where these unemployed are older, they average 32.6 years old, about 3.4 years above the average. In Santo Antão, half of the unemployed have less than 31 years and 59 out of 100 are under 35 years. In comparison, in São Vicente where the unemployed are the youngest, the average is 27.7 years of age.

TABLE 1-11: THE EMPLOYED AND UNEMPLOYED WITH LESS THAN 25 AND 35 YEARS OF AGE BY ISLAND (2006)

Less than 35 years of age						
	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Unemployed	72.1	80.4	79.5	76.3	85.2	77.3
Employed	44.4	51.8	63.4	50.1	48.6	50.6
Less than 25 years of age						
	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Unemployed	42.4	43.9	57.8	57.7	56.5	52.2
Employed	16.7	19.6	25.6	26.0	29.4	24.5

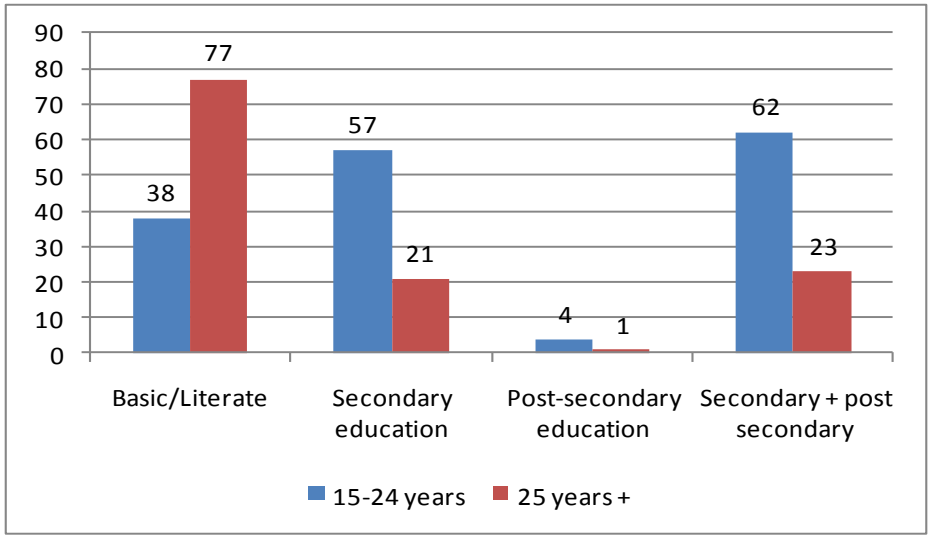
Source: *ISE* 2006 *IEFP/INE*

1.26 About 77 percent of the unemployed are aged between 15 and 34 years, whereas only 51 percent of the employed belong to this age group. Moreover, about 52 percent of the unemployed are aged between 15 and 24 years, whereas only 25 percent of employed belong to this age group.

UNEMPLOYED ARE RELATIVELY BETTER EDUCATED

1.27 The unemployed are younger people in Cape Verde and also relatively better educated. Approximately 44 percent of the unemployed have secondary level education (41%) or higher (3%), nearly nine percentage points above the average educational achievement of the employed. In comparison, the proportion of the employed with a secondary education (61%) is about nine percentage points more than the unemployed with that level.

FIGURE 1-4: AVERAGE EDUCATIONAL ACHIEVEMENT OF THE UNEMPLOYED BY AGE GROUPS (15-24 AND GREATER THAN 25)



Source: *ISE* 2006 *IEFP/INE*

1.28 The data displayed in Figure 1-4 indicate that the unemployed aged between 15 and 24 years and these are relatively more educated than those of 25 years or more. For every 100 unemployed of 15-24 years, 57 have secondary level education and four have a post-secondary education. In comparison, for every 100 unemployed persons 25 years or more, only 21 have a secondary level education and only 23 out of 100 have a secondary or post-secondary education.

1.29 While there is some evidence to suggest that the unemployed are relatively better educated, it is also true that unemployment is a relatively more acute problem for the less educated. The proportion of those unemployed, who had worked, that have a basic level of education is significantly higher than unemployed workers with secondary, post-secondary or college education. Only 3 percent of the unemployed with previous work experience and some college level education find themselves unemployed. The differences in unemployment rate between those workers with a basic or a secondary or post-secondary education are not as great; 52 to 44 percent, respectively (see **Erro! Auto-referência de marcador inválida.**, below).

TABLE 1-12: EDUCATIONAL ACHIEVEMENT OF THE AVERAGE UNEMPLOYED THAT PREVIOUSLY WORKED AND EDUCATIONAL ACHIEVEMENT OF EMPLOYED BY ISLAND (2006)

Basic education						
	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Unemployed	64.9	51.7	53.4	49.5	45.2	51.8
Employed	68.9	59.0	49.2	59.9	71.7	60.7
College+						
	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Unemployed	0.0	3.4	0.0	3.6	0.0	2.8
Employed	2.1	4.6	4.1	5.2	0.6	4.4
Secondary and post-secondary						
	Santo Antão	São Vicente	Sal	Santiago	Fogo	Cabo Verde
Unemployed	29.2	45.5	45.3	46.5	49.8	44.3
Employed	25.0	37.2	48.5	36.1	24.4	35.2

Source: *ISE* 2006 *IEFP/INE*

RIGIDITY IN THE LABOR MARKET

1.30 Unemployment rates are explained both by the number of jobs available (employment growth) and the number of workers actively looking for work (labor force participation or the active population). Table 1-13, below, indicates that rates of employment increase and decrease at faster rates than rates of people actively seeking employment. Between 1990 and 2000, the average annual rate of growth in the population of 15 years of age or older was 3.4 percent. The average annual rate of growth for the active population was 4.0, and for the employed population was 5.6 percent. In sum, employment growth was faster than the number of workers entering the job

market and explaining why unemployment fell from 25.4 percent to 17.3. Between the year 2000 and the year 2005, years where substantial structural changes to the economy were well underway, the average rate of annual growth were 0.3, -0.3, and -1.1 percent for the working age, active and employed populations, respectively. [11]

TABLE 1-13: TRENDS IN WORKING AGE, ACTIVE, EMPLOYED AND UNEMPLOYED POPULATIONS; 1990, 2000, 2005 AND 2006

	1990	2000	2005	2006
Population 15 years of age or older	187,968	251,863	260,226	292,857
Active population	122,064	171,313	166,356	183,254
Employed population	91,015	141,725	125,745	149,680
Unemployed	31,049	29,588	40,611	33,574
Percent active	64.9	68.0	63.9	62.6
Proportion unemployed	25.4	17.3	24.4	18.3

Source: Instituto National de Estatística (INE). 1990 – Censo 90 DGE 1996 – Inquérito Emprego (IEFP) 2000 Censo – INE 2005 e 2006 - ISE IEFP/INE.

1.31 The number of workers of working age grew, but those participating in the labor for shrank while employed workers fell and the rate of unemployment went from 17.3 percent in 2000 to 24.4 percent in 2005. The unemployment rate would have been higher had the active number of workers not fallen at the same time employment fell. Finally, between 2005 and 2006, the year with the highest economic growth, the working age population rose an annual rate of 1.3 percent, the active population only rose 1.0 percent, employed population annual growth rate was nearly double the rate of the active population growth rate at 1.9 percent and as a result of all this unemployment rate fell to 18.3 percent. This is a relatively high and persistent rate of unemployment while economic growth was brisk.

1.32 Trends in this combination of statistics suggest that the rates of unemployment may be less explained by slow rates of employment but rather by declining rates of active participation in the labor force; a hypothesis supported by the evidence on employment growth presented in this study. In other words, for factors beyond the scope of this study to examine, there are preliminary indications that labor force participation rate is more elastic to falling employment than it is to rising to the employment. This conjecture requires more investigation, but a number of conditions exist to support the hypothesis that labor force participation rates may be suppressed.

1.33 The conditions and trends of the informal sector force is one indication of the rate of participation in the formal labor force. The rate of labor force participation in the formal sector is partially a function of labor force participation rates in the informal sector. In Cape Verde, there are indications that the informal sector is relatively large and possibly growing. According to *Ministério*

[11] If people who were really not in the labor force declared themselves to be searching for a job, the calculated unemployment rate would be misleadingly high. There is no reason to suspect this, however, because there are no unemployment programs or other similar programs that would condition benefits to search activity. We have added this clarification to the text.

da Qualificação e Emprego (2008), informal workers constituted roughly 70 percent of total workers in 2006. The Investment Climate Assessment for Cape Verde, however, cites a 2004 report authored by the Ministry of Finance and Planning that estimates this share to be approximately 40 percent. However, based on the social security data, from the *Instituto Nacional de Previdência Social* (INPS), used as the basis of this study, the estimate of 70 percent for the informal share of total employment is more in line with what is indicated by these data as well.[12]

1.34 While the estimates of the informal sector give the impression that the informal sector in the Cape Verde is rather large, is must be noted that Cape Verde does not appear to be an outlier when comparing it with estimates of the informal sector in several countries in Latin America. The figure below (Figure 1-5) displays the results of a cross-country regression between estimates of the size of the informal sector with GDP per capita. There is a purported negative relationship between these two variables and the purpose of this analysis is to determine whether Cape Verde is an outlier with respect to this relationship. In other words, if the informal sector is statistically significantly larger than would be expected given the nation's GDP per capita, the analysis comparisons with benchmark countries in Latin America, where data are available, would have picked this up.

1.35 Based on this analysis, Cape Verde's level of informality is a above the predicted level, at least when compared to Latin American countries with similar levels of development. Data displayed in Figure 1-5: Correlation between per capita GDP and size of the informal sector for countries in Latin America and Cape Verde show that Cape Verde's level of informality is similar to that of Peru, which has a higher per capita GDP than Cape Verde. This simple analysis shows that Cape Verde is not an outlier in comparison to other countries in Latin America. The size of the informal sector is about what would be predicted given this relationship between GDP per capita and the size of the informal sector.[13]

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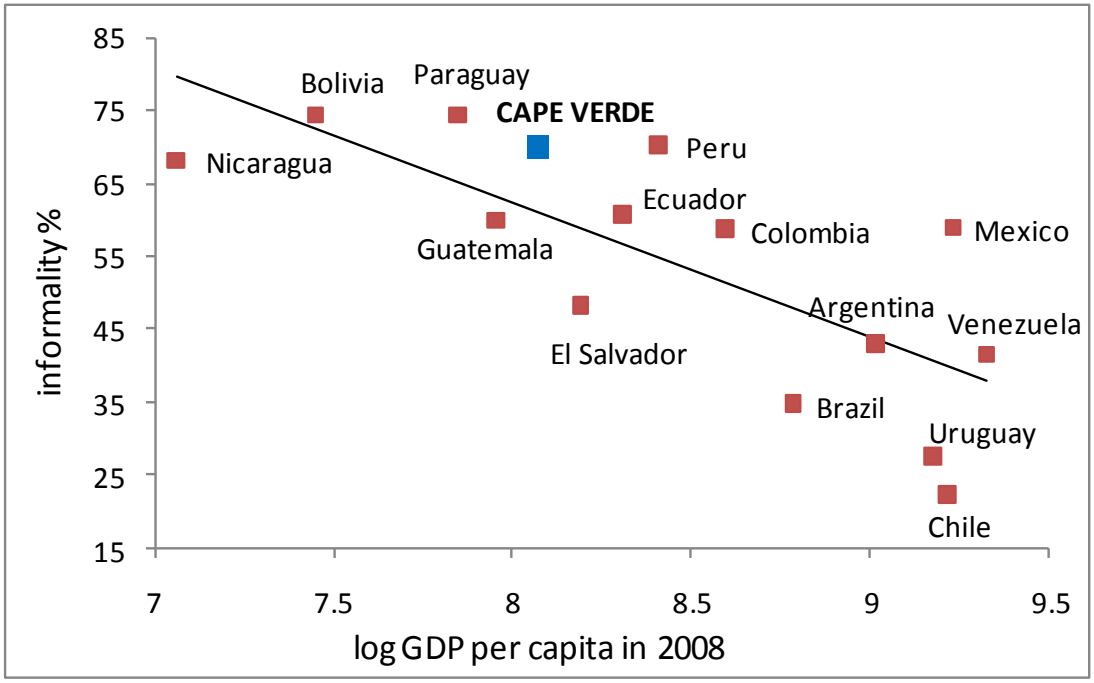
[12] In December 2006, total employment registered with INPS, including INPS employees themselves, was 37,541. With an active population of approximately 183,000 workers, this figure would imply that the informal sector comprises more than 80 percent of employment. This estimate probably misses some formal sector workers since INPS was still in the process of incorporating their own employees into the data. In order to get an upper bound on the size of formal sector employment, we can compare INPS registered employment in 2008, which was 49,503, with the total number of workers in 2006. By 2008, all INPS workers were included in the data set and private sector employment registered with INPS had also grown. According to this calculation the formal sector comprises 67 percent of total employment.

[13] Number of informal workers as a percent of all workers is calculated from Gasparini and Tornarolli (2007), using the criterion of access to social protection.

FIGURE 1-5: CORRELATION BETWEEN PER CAPITA GDP AND SIZE OF THE INFORMAL SECTOR FOR COUNTRIES IN LATIN AMERICA AND CAPE VERDE



Sources: Authors' calculations, World Development Indicators, and Gasparini and Tornarolli (2007)

1.36 While Cape Verde's informal sector is not unusually large when compared to seceral countries in Latin America, the question still remains as to why workers seem compelled to participate in the informal sector or, alternatively, unable to enter employment in the formal sector. Djankov and Ramalho (2009) find that economies with more rigid labor markets tend to have larger informal economies. If the costs of hiring or firing workers in the formal sector are too high, firms may choose to hire workers informally.

1.37 There are indications that labor regulations may be relatively burdensome in Cape Verde, supporting the Djankov and Ramalho (2009) hypothesis. According to the 2010 *Doing Business Report*, Cape Verde ranked 167 out of 181 countries in terms of labor-market flexibility. It is particularly difficult to dismiss workers in Cape Verde. The 2006 Enterprise Survey data also indicate that 47 percent of managers rate labor regulations as a moderate or severe obstacle in the operations of their businesses.[14] The analogous statistic, for the other 13 African countries where data were collected through the Enterprise Surveys, range from 0 in Gambia to 33 percent in Namibia, with an average value of 17 percent. By this measure, labor regulations seem to be particularly difficult in Cape Verde.

1.38 The new labor law, approved in 2007, introduced favorable labor market measures but may have exacerbated some rigidities. Most notably, the new labor code eliminated wage indexation to inflation—which is important in light of Cape Verde's currency peg and consequent limitations on

[14] Sample weights are used to estimate the values for a census of plants.

devaluation as a means of enhancing competitiveness—and greater flexibility for employers to change selected aspects of the labor contract. At the same time, the law introduced limitations to the number of years workers can be offered temporary contracts and it remains relatively difficult to release a redundant or non-performing worker, requiring a sequence of notices and compensation that is regarded as costly. According to the 2009 Enterprise Survey conducted in Cape Verde, 24 firms reported paying a severance payment to the employee who most recently left the firm. The median severance payment was 60,593 escudos, which is 3.6 times the median monthly wage for these 24 firms.

1.39 While these aspects of labor regulations may explain why firms may be more compelled to hire workers informally, there are also indications that the average Cape Verdean worker may be harder to coax into participating in the formal market. The average household in Cape Verde receives relatively high levels of remittances and these remittances may generate high reservation wages and low labor force participation rates. To the extent that many people in Cape Verde rely on remittances as a significant source of income, one can conjecture that the reservation wage of many Cape Verdeans might be surprisingly high. Kim (2007) find this to be the case for Jamaica, which like Cape Verde is a small Island economy with high levels of remittance income.

1.40 Workers may not place a sufficiently high value on government provided benefits (such health care and a pension) to induce them to enter the formal sector. Some informally-employed workers may receive health care from formally-employed workers in the same household through the nation's social security system. Suppose, for example, that workers view access to health care as the main benefit of working in the formal sector. Since a spouse of a formally-employed worker receives health care as the beneficiary of the formally-employed worker, the spouse may have little incentive to enter the formal sector. In support of this conjecture, the unemployment rate (calculated in a conservative manner from the Unified Survey of Basic Welfare Indicators-QUIBB) for married men who are heads of their households is only 5 percent. The same rate for married men who are not heads of their households is 11 percent. This evidence suggests that when family support is less likely, the probability of unemployment is lower.

1.41 While the set of observations above indicate tendencies for substantial labor market rigidities, a lack of willingness to move cannot be counted as one of the factors that sustain these high differentials in unemployment rates. The table below (Table 1-14) provides absolute values of in and out migrants across islands between 2000 and 2006, and provides calculation of indexes that represent the propensity of in and out migration and retention by island for purposes of comparisons. The data suggest that workers are acting along the lines of the economic opportunities offered to them. The data indicate a pattern of out migration from islands where the unemployment rates are relatively high and in migration to islands in which unemployment rates are relatively low. The islands of Sal and São Vicente and the city of Praia have high retention rates (88.4, 84.4 and 91.8, respectively) and high index of entry (39.2, 38.7 and 48.1). These are where unemployment rates are relatively low. In converse, Santo Antão Interior Santiago and Fogo do less well on these comparative measures of in migration and retention, reflecting their relatively higher unemployment rates.

TABLE 1-14: ABSOLUTE VALUES AND INDEXES OF IN AND OUT MIGRATION ACROSS ISLANDS

	Total	In migrants	Out migrants	Net in migration	Index of exits	Index of retention	Index of entry	Rate of net migration
Santo Antão	14,952	453	8,783	-8,330	37.8	-62.2	3.0	-55.7
São Vicente	19,931	7,712	2,118	5,594	15.6	84.4	38.7	28.1
Sal	5,870	2,300	289	2,011	11.6	88.4	39.2	34.3
Interior Santiago	39,101	1,301	10,813	-9,512	22.3	77.7	3.3	-24.3
Praia	31,983	15,387	1,383	14,004	8.2	91.8	48.1	43.8
Fogo	11,466	213	3,980	-3,767	26.3	73.7	1.9	-32.9
Total	123,303	27,366	27,366	0	22.8	77.2	22.2	0.0

Source: INE – 2000 Census and calculations from the *ESTUDO/DIAGNÓSTICO SOBRE O MERCADO DE EMPREGO EM CABO VERDE* (2008)

1.42 While relatively high propensity to migrate across islands is a positive with respect to labor market flexibility, this propensity presents some possibilities for rigidities. Cape Verde is characterized by high levels of emigration and opportunities for emigration may also produce high reservation wages and low labor force participation rates. If large segments of the population believe that they may have job opportunities elsewhere, they more easily get frustrated by unsuccessful searches for work in the local labor market, drop out, and wait for the opportunity to emigrate. According to the results from the *Instituto do Emprego e Formação Profissional* (IEFP (2002)), more than 50 percent of the population states a desire to emigrate. Of the people who state a desire to emigrate, 13.2 percent cite currently being unemployed as the main reason while 23.2 percent cite low earnings as the main reason.

CONCLUSIONS

1.43 This chapter presented evidence of a national economy that has recently experience sustained and rapid economic growth with uneven economic outcomes across social groups, islands and rural and urban areas. It also presented evidence that the regional disparities in economic performance are also reflected in persistently high and variable unemployment rates across islands. These persistent disparities may point to some labor market rigidities which require exploration and explanation. There is some evidence of other rigidities in that the labor force participation rate appears to be relatively elastic when employment seems to be increasing and relatively inelastic when employment is increasing. However, there are positive developments with respect to migration patterns across islands. In fact, if these trends continue, these migration patterns will go a long way to addressing the differential in unemployment rates across islands. However, in spite of this, the chapter pointed out that there may be some regulatory and

institutional reasons for this pattern of elasticity in the formal sector labor force participation rate and focused on the incentives to remaining informal.

1.44 The immediate challenge is to identify and analyze the factors of these possible rigidities with the modest levels of information that exists about Cape Verde's labor markets. The goal of the next chapter is to display trends and conditions of employment growth at the national and sub-national levels and determine how dynamic the national economy and its many islands have been in generating employment.

Chapter 2 –EMPLOYMENT GROWTH AND WORKER FLOWS

There are a number of indications that Cape Verde's labor market is relatively rigid; unemployment is persistently high, there is a long-standing pattern of regional variation in some labor outcomes, and the informal sector is large and possibly growing. All of these conditions and trends persist alongside historically high economic growth. However, a labor market has two sides – demand and supply. The demand side of the labor market, job creation and job destruction, seems dynamic and not reflecting labor market rigidity. Conversely, rising real wages and falling productivity indicate that the rigidity may be from the supply side of the market. Finally, patterns of convergence in trends of job creation and job destruction across islands indicate increasing economic integration of the demand side of the labor market.

2.1 The previous chapter indicated that despite relatively high economic growth, unemployment remained persistently high and disparate across islands. To address some of the factors as to why this may be the case, this chapter is focused on examining the dynamics of national unemployment trends and these large inter-island variations based on changes in net employment rates. The question is whether trends in net employment are contributing to or militating against divergent outcomes in labor outcomes across islands. Convergence toward a reduction in divergent regional outcomes is what economic theory would predict all things being equal.

2.2 Persistently high and disparate unemployment rates across islands may indicate the presence of impediments to adjustments and rigidities. It is expected that without these rigidities, that long-term unemployment would fall and trends with respect to regional unemployment rates in each island would tend toward national convergence. All things being equal, unimpeded market forces incent labor away from, and investments and labor demand to, markets where labor is less dear, reducing unemployment there and leading to relative convergence in unemployment rates. Without these impediments and rigidities, labor outcomes across Cape Verde would tend toward integration, convergence and the emergence of one national labor market.

2.3 Trends and conditions of job flow rates and employment growth, nationally and across regions, can help identify possible rigidities in the Cape Verdean labor market. Trends and tendencies in the job flow rates—rates of job creation and destruction—across firms and islands are indicative of the demand-side dynamism of the labor market.[15] For these reasons, this section examines the nature and rates of job creation and job destruction across time, firm characteristics

[15] Net employment and job flow rates—differences between the rates of job creation and destruction—can be interpreted as indicators of labor market dynamics. For example, a net employment growth rate in Santo Antão that is -2 percent could be the result of a job creation rate of 1 percent and job destruction rate of 3 percent. Alternatively, this could be the result of a job creation rate of 10 percent and a job destruction rate of 12 percent. The latter suggest a much more dynamic labor market than the former.

nationally and across islands. This analysis also determines performance in terms of gross job creation, destruction and net employment[16] at the firm level.

NET EMPLOYMENT AND WORKER FLOWS

2.4 Estimates of high net employment growth based on INPS data mirror the nation's historically high economic growth rates and indicate that the demand side of the Cape Verdean labor market is relatively dynamic (see Table 2-1, below). Between 2003 and 2008, the average net growth rate of the formal private sector employment was brisk at an annual average of 8.1 percent. During the same period, the net growth rate of the formal private sector employment was also varied, ranging from a low of 4.5 percent annual growth in 2004 and a high of 11.3 percent in 2007. Net employment growth was higher from 1997-2002[17] than in the period 2003-2008, but the earlier data do not include Sal. Net growth was especially high in the period 1998-2000. But there is a noticeable decline in net employment growth by 2008 as the global crisis began to take hold.

TABLE 2-1: NATIONAL NET EMPLOYMENT GROWTH PERCENTAGES, 1997-2008

Year	Change in net employment
2003	5.44
2004	4.52
2005	9.14
2006	11.12
2007	11.34
2008	6.86
Average (2003-2008)	8.07

Notes: Author's calculations based on individual records from INPS. All changes are from December of the previous year to December of the current year. Only private sector firms were used in these calculations.

2.5 A disaggregated examination of these same data at the regional (by island) level also reflects dynamism across all islands. This examination also shows not only wide variation in net employment growth across islands but also across time in the same island. For example, in Santiago, São Vicente, and the rest of Cape Verde (not including Sal), these estimates of net employment growth indicate higher growth in the first five years than in the later period (see Table 2-2, below).[18] Average net growth percentages from 1997-2002 for Santiago, São Vicente, and the rest of the country were 12.3, 9.6, and 15.0 percent, respectively. While the time series is short,

[16] With gross job creation, it is mean the sum of all employment gains from expanding or newly created firms, while gross job destruction refers to the sum of all employment losses from firms that are contracting or closing down. The sum of these two measures gives a measure of net employment growth and reallocation.

[17] The earlier period of data do not include the island of Sal because these are unavailable for that period.

[18] Since there are relatively few observations in the smaller islands, Santo Antão, São Nicolau, Boa Vista, Brava, Fogo and Maio , data are aggregated for all islands other than the main three into one category.

correlations across islands in net employment rates are at times negative. For example, between 1997 and 2002, the net employment growth rate of Santiago and São Vicente is negatively related to the same rate in the rest of the country which includes the islands of Santo Antão, São Nicolau, Boa Vista, Brava, Fogo and Maio (column 4 – Rest of country). This negative correlation between net employment rates is only apparent between Sal and São Vicente in the second period of the data, between 2003 and 2008. Otherwise, correlations between net employment growth rates across islands throughout the two sets of time series data are sizeable and positive, as expected.

2.6 There are also sizeable differences in the year-to-year growth rates within island net employment growth rates as well. For example, in Santiago in 2003, net employment growth was at 4.7 percent but had reached a growth rate of 17.6 percent three years earlier in 2000. These large swings in net employment rates are not confined solely to the island of Santiago; in the year 2000, São Vicente net employment was more nearly 25 percent, but dropped to -1.6 percent five years later. In none of these series, is the previous year's growth rate a good predictor of the next year's rate of growth in net employment. Once again, however, it must be kept in mind that the series are very short, making statistical estimations less robust than a longer series would yield.

TABLE 2-2: REGIONAL NET EMPLOYMENT GROWTH PERCENTAGES, 1997-2008

Year	Santiago	São Vicente	Sal	Rest of country
1997	8.43	4.37	-	11.61
1998	14.42	6.63	-	25.37
1999	16.13	14.82	-	17.98
2000	17.55	24.98	-	5.90
2001	7.68	0.72	-	27.44
2002	9.38	6.15	-	1.83
Average (1997-2002)	12.27	9.61	-	15.02
2003	4.67	1.32	11.31	13.29
2004	7.10	-0.43	8.16	5.46
2005	11.33	-1.59	12.58	24.69
2006	11.09	4.40	20.56	12.99
2007	12.80	6.75	14.06	12.44
2008	7.23	5.07	10.33	4.22
Average (2003-2008)	9.04	2.59	12.83	12.18
Average (1997-2008)	10.65	6.10	-	13.60

Notes: Author's calculations based on individual records from INPS. All changes are from December of the previous year to December of the current year. Only private sector firms were used in these calculations.

2.7 An examination of net employment rates indicates that there is dynamism in the demand side of Cape Verde's labor market, however, calculations of net employment are the sum of rates of job creation and job destruction and therefore can provide only a general indication of these dynamics. To get a better view of the dynamics behind net employment rates, an examination of rates of job destruction and job creation, also referred to here as job flows, is required. The INPS

data allow calculations of job flows in Cape Verde. Job flows have four components; job created by entering firms, jobs created by firms already in the market, jobs eliminated or destroyed by exiting firms and jobs eliminated by firms already in the market.

2.8 From 2003-2008, job flow calculations[19] exhibit a substantial amount of churn both in job creation and destruction (see Table 2-3, below). In a typical year, 30.4 percent of the workers were employed in a different firm than one year earlier (new hires) and 22.3 percent of workers left their firm that employed them the previous year (separations). About 19.3 percent of jobs are created in a typical year and 11.2 percent of jobs are destroyed.

TABLE 2-3: WORKER FLOWS AS PERCENT OF TOTAL EMPLOYMENT, 2003-2008

year	change in net employ-ment	new hires	separa-tions	jobs created by enterin g firms	jobs created by con-tinuing firms	total jobs created	jobs des-troyed by exiting firms	jobs des-troyed by con-tinuing firms	total jobs des-troyed
2003	5.44	27.09	21.65	6.46	9.50	15.97	5.03	5.49	10.52
2004	4.52	28.72	24.20	10.39	8.07	18.46	6.42	7.52	13.94
2005	9.14	30.65	21.50	9.85	11.33	21.18	4.63	7.40	12.03
2006	11.12	32.45	21.33	8.89	12.27	21.16	4.48	5.57	10.05
2007	11.34	33.16	21.82	9.26	11.31	20.58	2.44	6.80	9.24
2008	6.86	30.23	23.38	6.89	11.29	18.17	3.72	7.59	11.32
avg.	8.07	30.38	22.31	8.62	10.63	19.25	4.45	6.73	11.18

Notes: Author's calculations based on individual records from INPS. All changes are from December of the previous year to December of the current year. Only private sector firms were used in these calculations.

2.9 Churn of job flows is generated more by firms already in the market (continuing firms) than from entering and exiting firms. With respect to jobs created, 2004 was the only year in this series when entering firms created more jobs that continuing firms (10.4 vs. 8.1 percent of jobs created, respectively). In the average year, existing firms create a slightly greater proportion of all jobs when compared to entering firms (10.6 vs. 8.6 percent, respectively). The percent of jobs created by entering firms outside of the three main islands was 16.1 percent. The analogous figures for the islands of São Vicente, Santiago, and Sal, Santiago are 5.7, 7.8, and 10.0 percent, respectively. Job creation by new firms outside of the three main islands has declined sharply starting approximately in the year 2002. The peak of job creation by entering firms occurred in different years for different islands, but was quite low in 2007 and 2008 in each of the three main islands.

2.10 The levels of churning in Cape Verde, however, are not high by international standards. Inter-American Development Bank (2004) reports the sum of hiring and separation percentages for six countries: Brazil, Canada, Finland, Germany, Mexico, and the United States. The smallest value

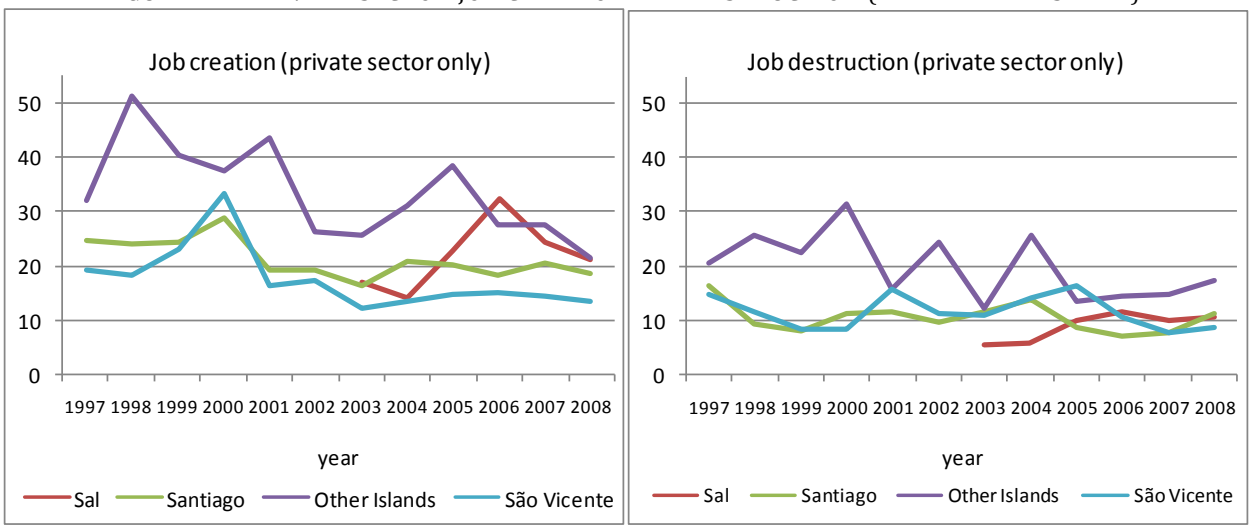
[19] The appendix to this chapter provides information as to how this calculation was made.

for this some was for Germany at slightly over 60 percent. In this sense, the average value of slightly less than 53 percent for Cape Verde represents a low level of employee rotation.

2.11 Conversely, with respect to job destruction, exiting firms destroy fewer jobs than by firms that are continuing operations but reducing the number of jobs; continuing firms reduce the number of jobs by 6.7 percent compared to firms closing down and exiting the market at 4.5 percent. The churn in job flows is mostly from firms changing the composition of their labor force and not one so much based on the entry or exit of firms in the market.

2.12 Geographic disaggregation of the data on rates of job creation and destruction, by island, indicates a subtle but distinct trend toward convergence across islands (see Figure 2-1, below). Compared to job creation, there is far less variability in the rate that jobs are destroyed across islands. While there is little variation in separations across islands between 2007 and 2008, time trends with respect to job destruction indicate that the nearly same rate of separations across islands is a relatively recent phenomenon. In the late 1990s the group of six less populated islands, experienced substantially higher rates of job destruction. By the year 2000, the rate reached 20 percent while leveling off to under 5 percent in the other islands. The proportion of workers who have been hired within the past year, which had been increasing steadily until 2007, has begun to decline in recent years. The result that separations are less volatile than hires is consistent with the results of Bosch and Maloney (2007) and Bosch et al (2007). Finally, while very preliminary, data from 2008 show that job destruction accelerated most in the small group of islands compared to other islands in Cape Verde. These data are the first indication of the effects on job destruction from the international financial crisis.

FIGURE 2-1: PRIVATE SECTOR JOB CREATION AND DESTRUCTION (BY YEAR AND ISLAND)



Source: INPS.

2.13 In order to determine the type of jobs being created, the following econometric models were tested. For firms with positive employment in the current year and the prior year, the net percent change in employment was regressed against the log of the average wage paid by the firm. The regressions were weighted by the average employment in the firm in the current and previous period. For the years 2003, 2006, and 2008 there were no significant results, suggesting that the employment creation process in these years was neither biased towards skill nor biased against

skilled jobs. For the year 2004, the statistical analysis indicated a negative and significant coefficient on the average log wage, suggesting that low wage firms disproportionately created jobs in 2004. The coefficient on the log of the average wage was positive and significant in the years 2005 and 2005 suggesting that high wage firms were disproportionately creating jobs in these years. The evidence regarding skill biased changes in productivity therefore appears to be mixed.

CONCLUSIONS

2.14 This chapter began with goal of examining labor market rigidities. It provided analysis of the extent of these rigidities by looking at demand side rigidities of the labor market by focusing on trends and conditions of net employment and the rate of job creation and destruction that comprise net employment. The data and analysis indicate that demand-side rigidities are not apparent. Net employment rates are high. Furthermore, the analysis presented evidence that net employment is high mostly because of high rates of job creation. Rates of job destruction are also high, supporting the conjecture job flows churning reflects demand-side labor market dynamism. This churn is mostly driven by existing firms who create the larger portion of the jobs and also destroy a large portion of these as well. Lastly, the analysis indicated a converging trend with respect to rates of job creation across islands. Islands with the highest unemployment rates were also those with the highest rates of job creation.

Appendix – Calculation of job flows

The data from INPS allow separation of net changes in employment into a component that is derived from new hires and a component is derived from separations. A new hire is defined as someone who is working at a firm in the current year but was not working at that firm in the previous year. Conversely, a separation is defined to be a person who was working at a firm in the previous year and is not working at that same firm in the current year. Following the methodology of Kaplan (2009), and Davis and Haltiwanger (1990 and 1992), estimates are derived in the following way:

$$\textbf{Hire percentage} = \mathbf{200} * \frac{\textbf{new hires}}{\mathbf{empl_t} + \mathbf{empl_{t-1}}}$$

and

$$\textbf{Separation percentage} = \mathbf{200} * \frac{\textbf{separations}}{\mathbf{empl_t} + \mathbf{empl_{t-1}}}$$

where $\mathbf{empl_t}$ is the total employment in year *t*.

In addition, the data from INPS also allow calculation of jobs created and jobs destroyed. A job is created is indicated when a firm is employing one more person than in the previous year. For example, a firm has created one job if the firm hired 1 person and had zero separations since the previous year. Also, a firm created one job if the firm hired 10 people but experienced 9 separations in the previous period. Job destruction figures are calculated analogously for firms that decrease their levels of employment. Job creation and destruction percentages can be calculated using the following formulas:

$$\textbf{Creation percentage} = \mathbf{200} * \frac{\mathbf{max}[(\textbf{new hires} - \textbf{separations}), \mathbf{0}]}{(\mathbf{empl_t} + \mathbf{empl_{t-1}})}$$

and

$$\textbf{Destruction percentage} = \mathbf{200} * \frac{\mathbf{max}[(\textbf{separations} - \textbf{new hires}), \mathbf{0}]}{(\mathbf{empl_t} + \mathbf{empl_{t-1}})}.$$

It is also customary to separate jobs created into the component of job creation that comes from entering firms (those with zero employment in the previous year) and the component that comes from continuing firms (those with positive employment in the previous year. Similarly, it is customary to separate jobs destroyed into the component that comes from exiting firms (those with zero employment in the current year) and the component that comes from continuing firms (those with positive employment in the current year).

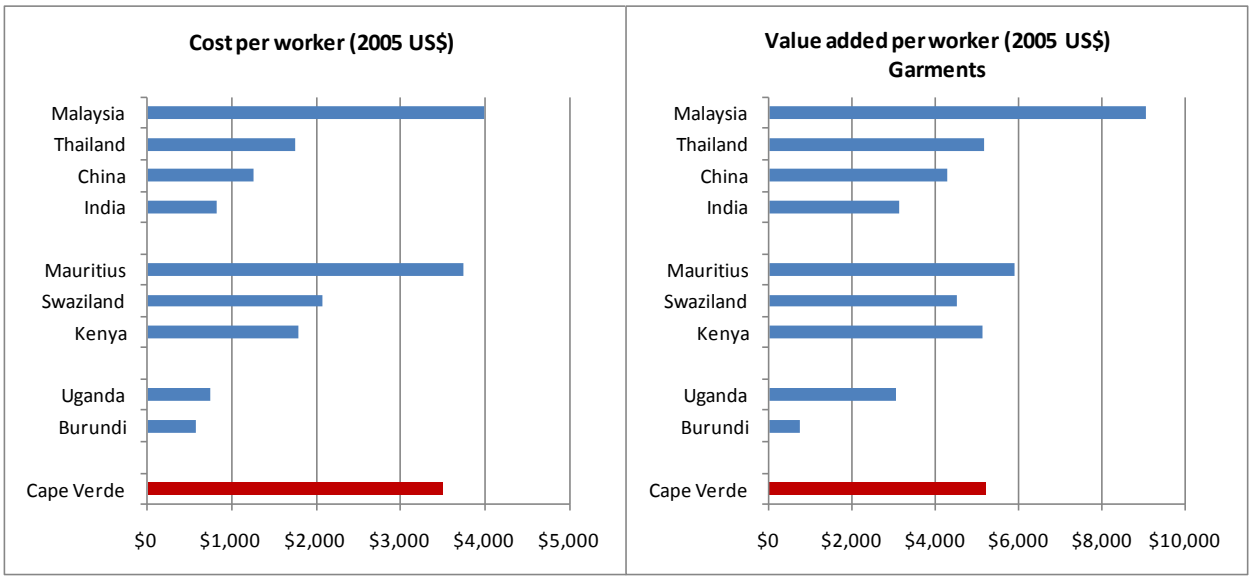
Chapter 3 –WAGES AND WORKER PRODUCTIVITY

Real wages have been increasing modestly in the formal sector of Cape Verde, but with considerable heterogeneity across islands. Real wages in the island of Sal had been increasing at a very high rate but have more recently fallen substantially. The public sector wage premium is high and generally been increasing over time, which may generate unemployment as workers queue for jobs in the public sector. The average productivity (or earnings ability) of private sector workers has been declining over time, which is consistent with complaints from entrepreneurs that they are unable to find workers with the skills they need. Finally, younger firms tend to employ younger workers, female workers, and less skilled workers, which may signal that these workers may have an increasingly difficult time finding formal sector jobs since the entry rate of new firms has plummeted since 2007.

3.1 This chapter examines the existence and effects of possible labor market rigidities using measures of wages and labor productivity. The previous chapter focused on the issue of labor market rigidities by examining rates of job creation, destruction and net employment growth. Based on these measures of demand-side labor market churn, the data pointed to a Cape Verdean labor market that seems relatively dynamic. This chapter looks to evidence of labor market dynamics by looking at wage and labor productivity data.

3.2 Wages are the result of forces from the supply and demand factors of the labor market. Wage levels are the result of a bargain between firms and workers. Workers and firms bargain over wages where their respective success in this bargain is a function of their negotiating strength. Relatively high and rising wages, usually signals inelasticity of the supply side and a comparatively more elastic demand side. As such, conditions and trends of wages provide the most direct assessment of supply-side labor market rigidities that INPS data allow.

FIGURE 3-1: COST PER WORKER AND VALUE ADDED PER WORKER (2005US$)



Source: Author's calculations based on Enterprise Survey data (www.enterprisesurveys.org)

3.3 Trends and tendencies in labor productivity can also be an indirect measure of supply side labor market rigidities when it is stagnate or falling. It is often the case, however, that firms may concede higher wages but in return expect higher productivity from their workers. While labor productivity is high in Cape Verde, the high costs of labor relative to the value of their output (see Figure 3-1, above). As a rough measure of the issue, there is approximately a 33 percent margin between per worker value added and per worker costs. Only Burundi, in this set of comparator countries, has a smaller margin at 21 percent. In Mauritius, where recent realization that rising wages in the garment sector will no longer make it internationally competitive, the same margin between per worker costs and value added is close to that of Cape Verde's at 37 percent. In addition, estimates presented here based on INPS data will indicate that labor productivity has been stagnant or falling as real wages have been rising markedly throughout the high growth period. These trends may indeed signal rigidities in Cape Verde's labor market may be originating from the supply side of the labor market.

WAGE CONDITIONS AND TRENDS

3.4 In December 2008, the average monthly wage for the 23,847 private sector workers registered with INPS was $41,082 Cape Verdean Escudos (CVE) per month. This is the equivalent of a monthly salary of approximately US$537.[20] Average monthly wages in São Vicente, Sal, and Santiago were $33,288, $42,259, and $49,984 escudos respectively. The average monthly wage outside of the three main islands was $27,800 escudos; a bit more than have the average salary found in Santiago.[21]

3.5 Between 2003 and up to 2008, wages have been increasing at a brisk pace. Since 2003, median monthly wages increased in real terms by 10 percent, while mean wages went up by 2 percent. This pattern of differential growth between average and median wage growth can be interpreted to imply that relatively more low wage earners were entering the labor pool than those workers earning above average wages, pulling the mean down relative to the median. Overall, however, the dramatic increase in net employment, demand for labor, may explain this significant increase in wages. During this period when wages were increasing dramatically, total employment expanded by about 54 percent from 2003 to 2008.

3.6 More recently, however, changes in wage growth took place at the beginning of the global recession, between 2007 and 2008. Among the three main islands, average and median wages decreased the most in Sal in that short one year period. The average (median) real wage in Sal fell by 6 percent (2%), which is substantially larger than the average (median) decrease of 4 percent (1%) observed in São Vicente and no average (median) decrease in real wages in Santiago.[22] Outside of the three large islands of São Vicente, Santiago and Sal, real average monthly wages increased from 2007 to 2008 by 5 percent while real median monthly wages increased by 9 percent.

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[20] This is based on an exchange rate of CVE 76.5 = US$ 1.

[21] All of these differences across gender and islands are statistically significant at conventional levels.

[22] These differences are also statistically significant.

3.7 Long-term trends in wage growth across islands are similar to trends evident with employment growth across islands, differing significantly across islands as well. Among the three main islands, average and median wages increased most rapidly in Sal from 2003-2007. Over this period, real average monthly wages increased by about 12 percent in the island of Sal. This increase dwarfs the 2 percent increase observed in São Vicente and the 1 percent decrease observed in Santiago. The differences between Sal and the other two main islands are statistically significant. The results using median wages reveal the same pattern. Real median wages rose 4 percent from 2003-2007 in Sal, compared to a 2 percent decrease in São Vicente and 1 percent increase in Santiago.[23]

3.8 In the long run, wage differentials across islands may be reduced through labor mobility. Labor exits markets with lower wages and enters markets with high wages, causing the wage differentials to level out. According to government statistics and analysis on migration, patterns of migration between islands in Cape Verde seem to indicate the predicted pattern of workers leaving depressed areas (Santo Antão, São Nicolau, Fogo and Brava) and moving to more economically vibrant islands (Sal, Santiago, São Vicente and more recently Boa Vista). Approximately 48 percent of workers from the Praia have come from other regions of the country. In the islands of Sal and São Vicente, 39 percent of workers are migrants. For example, of migrant workers that moved within Cape Verde, about 13,387 went Praia, the capital city and on the island of Santiago. Praia is the first most preferred destination for migrant workers, followed by São Vicente. While Praia has only 26 percent of the employed population, the municipality received about 56 percent of migrant workers. São Vicente has the second largest number of workers migrants (28%) which is approximately 12 percentage points above the proportion of the employed population of Cape Verde. Sal comes is the third place most preferred destination for migrants, with about 8 percent of all new migrants, almost double the contribution of the island for the employed population (5%). With respect to emigration, about 58 in every 100 workers who were born in Santo Antão left the island to find work outside on another island. In the island of Fogo, approximately 35 out of every 100 workers born there have left and the interior of Santiago the estimate is 28 out of 100 workers have migrated to another part of the country. In sum, there are broad patterns of inter-island migration that indicate that workers are responding to the incentives provided by a greater likelihood of productive employment. As this study does suggest, there seems to be convergence to an integrated labor market emerging and migration is one adjustment mechanism that is facilitating that integration. According to a study done by the Government of Cape Verde on the nation's labor markets, migration patterns have been more dynamic in 2006 than in 2000.[24]

3.9 In spite of all of this labor movement, wage differentials persist. A long-term persistence in wage differentials may result from barriers to mobility between markets. One barrier results from the cost acquiring skills to perform certain jobs. Another set of barriers results from various market imperfections such as a lack of knowledge of job opportunities and reluctance to leave familiar surroundings.

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[23] These differences are statistically significant.

[24] Ministério da Qualificação e Emprego (2008), Estudo/Diagonóstico sobre o mercado de emprego em Cabo Verde, page 122.

ECONOMETRIC RESULTS OF WAGE DETERMINATION AND PRODUCTIVITY

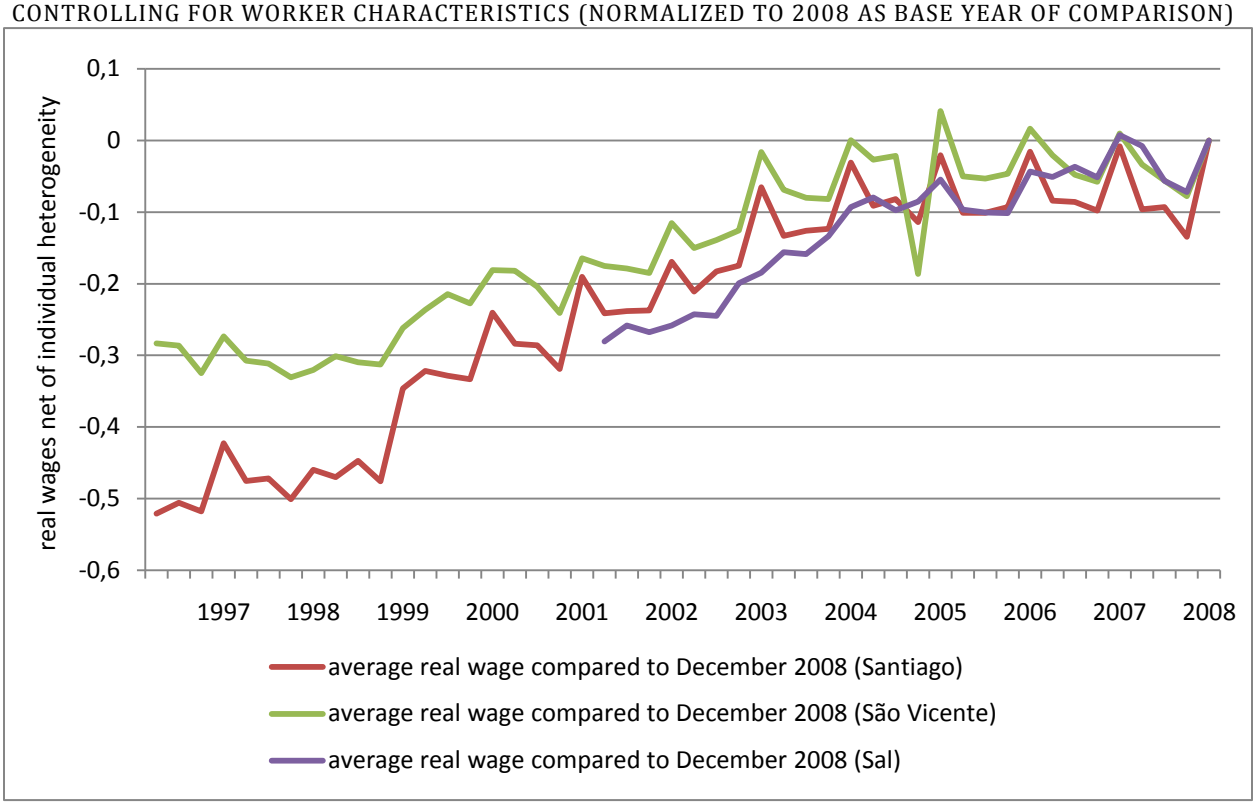
3.10 The dynamics of demand for labor and supply of labor play themselves out in the process of wage determination. In principle, labor productivity is the main determinant of labor compensation given that in a perfect competition market, it is rational for workers' wages to be equal to their productivity. However, there is close interdependence between quantity (jobs) and price (salary) on the labor market, with both having a mutual impact on each other. The labor market issue is often seen in terms of the opposing concerns of firms and workers, which stem, in part, from diverging motives. On the one hand, firms are interested in maximizing labor input, meaning, paying the least amount for the optimum yield. On the other hand, employees want to maximize their wages for the shortest work time possible. How wages are determined is based on the relative bargaining power of each side of the market. When jobs are scarce and workers plentiful, firms have the upper hand, when the situations are reverses, of course, labor can extract higher wages.

3.11 An econometric model of wage determination allows for examination as to the factors that associated with wage levels across groups, firms and geographic location, focusing on wage trends and productivity. While it is generally true that worker productivity aligns well with the wage rate, the supply and demand conditions will affect wage trends and levels. In order to understand the complete interaction of labor productivity, worker, firm, demand and supply conditions that are endemic to labor markets in particular locations a multivariate regression model is best designed to do this.

3.12 Distinct trends in rising wages, controlling for firm, individual and location characteristics is one of the most striking findings of this analysis (see Figure Figure 3-2, below).[25] The chart plots the point estimates of average wage rate, by island, based on a multivariate regression analysis that controls for worker characteristics and other factors such as firm age. The graphs represent average wage levels, by year, as compared to those levels in 2008. The reader should note that as point estimates, there are upper and lower bound confidence intervals that flatten the year-to-year movement in estimates. In other words, the year-to-year variation is likely to be less pronounced than the point estimates provided below. However, granted the year-to-year variation in point estimates, there is a distinct and significant upward trend in wage rates across all three islands. The trend is statistically significant from beginning to end of the series.

[25] Unfortunately, the data did not allow for disaggregation for other islands for Cape Verde, so the analysis is confined to Sal, Santiago and São Vicente.

FIGURE 3-2: SAL, SANTIAGO AND SÃO VICENTE WAGE TRENDS, CONTROLLING FOR WORKER CHARACTERISTICS (NORMALIZED TO 2008 AS BASE YEAR OF COMPARISON)



Source: Author's calculations based on INPS data

3.13 Declining or stagnant trends in worker productivity is another distinct finding in this analysis. Figure 3-3, below, displays evidence in support of the hypothesis that less productive workers have been entering the private sector over time The three charts show, for the period 1997-2008 in Santiago, São Vicente and Sal, the evolution of the average values of productivity in the public and private sectors have been declining in the private sector and remaining stagnant in the public sector. There is no statistically significant trend for the productivity of public sector workers, meaning that productivity of these workers has remained unchanged from the beginning to the end of the series. However, the average value of labor productivity in the private sector is falling significantly over time.[26]

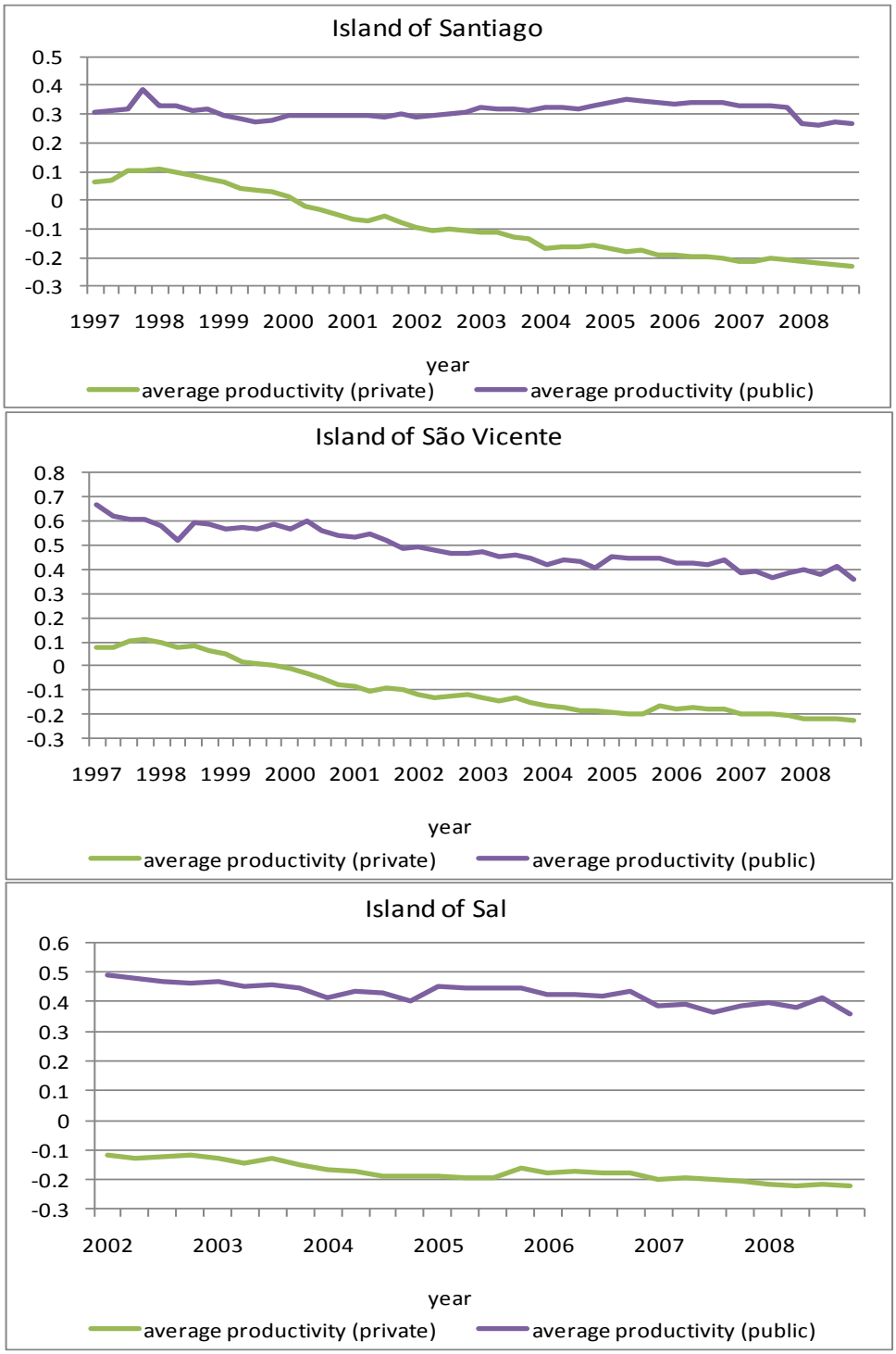
3.14 These trends in average worker productivity may explain the concern voiced by many Cape Verdean entrepreneurs that there is a shortage of workers with sufficient skills to fill some jobs.[27] It may not be a shortage in the classic sense—an insufficiency of workers skilled to fill particular positions that requires these skills—but rather a reflection of the observation that the last batch of workers hired may be increasingly less productive than the previous batch of workers. The graphs below are a visual depiction of what may be taking place in Cape Verde; the supply side of the labor

[26] The time trend for the average level of $\boldsymbol{\alpha_i}$ in the public sector minus the average level of $\boldsymbol{\alpha_i}$ in the private sector is positive and statistically significant.

[27] Cape Verde Investment Climate Assessment, World Bank (2006).

market tightening forces firms to hire less experienced and less qualified, and therefore less productive workers than in previous periods.

FIGURE 3-3: AVERAGE PRIVATE AND PUBLIC SECTOR WORKER PRODUCTIVITY IN SANTIAGO, SÃO VICENTE, AND SAL



Source: Author's calculations based on INPS data

3.15 An explanation of tightening supply of labor is consistent with the worker productivity and wage trend data, but inconsistent with the fact that unemployment remains persistently high across these islands. To reconcile these, tight labor supply for skilled workers, explaining why real wages are rising while average productivity is generally declining or stagnant, and a slack in supply for unskilled workers explaining the persistence and high levels of unemployed workers.

3.16 Tightness in supply of high skilled labor may be exacerbated by trends and levels of public sector wages. In many countries the public sector offers a level of job security and fringe benefits[28] that cannot be matched in the private sector. Given this greater job security, it can be expected that the public sector should pay wages that are substantially lower than the wages paid in the private sector. This is not always the case. Even in cases where public wages are not higher than those in the private sector, economists argue that there still may be a public sector wages premium because public sector wages should be significantly lower since lower wages are compensated with comparatively more job security than what is generally found in the private sector. The public wage premium may be especially binding for in a small economy such as Cape Verde since its skilled labor pool is relatively small.

3.17 Economist's interest in the public wage premium is based on minimizing distortion that this premium may have on private sector wages. When the premium is high, public and private employers will be bidding up wages of workers in efforts to recruit them. This raises costs for private businesses directly and indirectly raises costs through the higher taxes businesses have to pay for the higher public sector wages. In Cape Verde may be a good case of this, the market for skilled labor is small and the public sector can easily bid up wages in demand for this labor.

3.18 Preliminary econometric evidence indicates that there is a sizeable public sector wage premium. [29] If a high public sector wage premium does exist, it may explain some portion of the high rates of unemployment. In the island of Santiago, where the public sector is quite large, workers may earn more than they would earn in the private sector. This premium for government jobs generates a substantial incentive for these workers to reject job offers from the private sector and to queue for jobs in the public sector. Admittedly, none of the evidence presented in this study indicate that a high public sector wage premium is part of the explanation for high rates of unemployment. However, this study does show these questions would be fruitful avenues to pursue in future studies that might be able to address the issue directly.[30]

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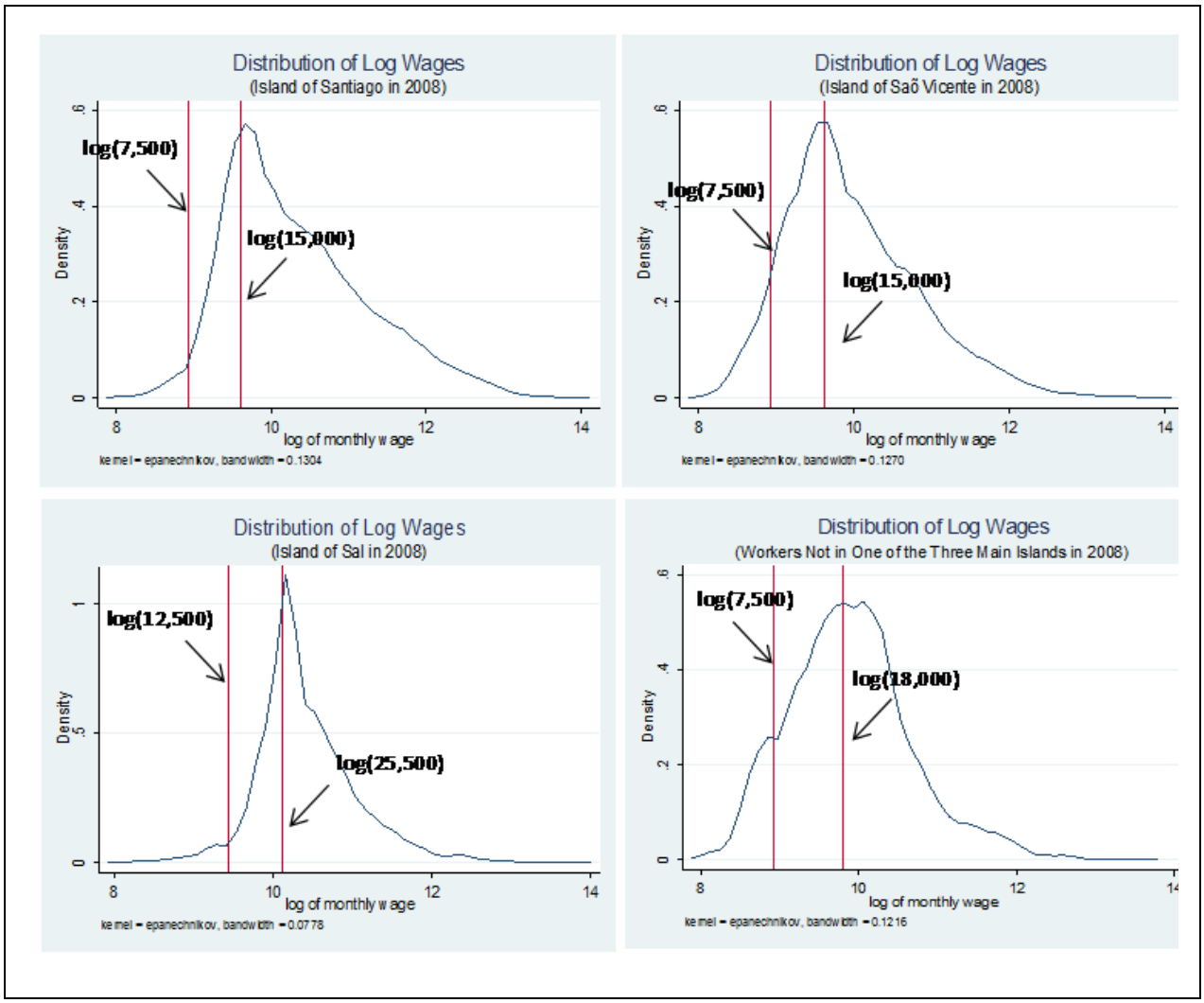
[28] Bellante and Long (1981) and Poterba and Rueben (1998).

[29] Using an econometric model to the data to detect if a public sector wage premium exists in Cape Verde, the econometric results support the hypothesis that there is a public sector wage premium and that it is significant. Holding all factors constant, between 1997 and 2007, public sector workers in Santiago earn on average about 51 percent more than they would earn in the private sector. For the same period of time, in São Vicente, public sector workers earn about 39 percent more on average than they would earn in the private sector. Finally, public sector workers in Sal earn on average approximately 53 percent more than they would earn in the private sector. It is important to note that the public sector has a minimum wage, which may contribute to the public sector wage premium.

[30] Controlling for the log of the number of workers had little effect on the results related to worker productivity or the public sector premium. The coefficients for this variable were 0.015 for Santiago, 0.068 for São Vicente, and 0.056 for Sal. It is also worth individual fixed effects, so our estimates of the public sector wage premium can be interpreted as the differences in pay for the same person. It is also worth emphasizing that the models control for individual fixed effects, so

FIGURE 3-4: DISTRIBUTION OF WAGES IN SANTIAGO, SÃO VICENTE, AND SAL AND OTHER ISLANDS (2008)



Source: Author's calculations based on 2008 INPS data.

3.19 There are very preliminary indications of the existence of a reservation wage in Cape Verde. One way to explain this reservation wage, a wage below which few or no worker would work, is through the public sector wage premium; these public sector jobs are essentially rationed and all a worker has to do is wait his or her turn. If any other employer offers a wage sufficiently below the public sector wage, the worker would rather invest in trying to get that public sector job than make him or herself available for the alternative option. Emigration to Portugal, the United States or Brazil may also create a reservation wage. A domestic wage sufficiently low enough will induce emigration and there will be no takers for these jobs. Cape Verde has a long history of sizeable

estimates of the public sector wage premium can be interpreted as the differences in pay for the same person. As a way to understand the magnitude of these estimates, we note that Braga et al (2008) finds a public sector premium of 22 percent in a simple regression that controls for basic characteristics such as education but does not contain individual fixed effects. For this reason the estimates of Braga et al are likely biased upward.

migrations to these countries, among others, so it is reasonable to ask whether there may be a reservation wage, a floor, under which few Cape Verdeans are willing to accept formal employment. Examining the distribution of wages to detect if there is a sharp and dramatic drop, a truncation, at the lower end of the distribution is one way to view if there is apparent wage floor, reservation wage, under which few Cape Verdeans are willing to accept formal employment.. Figure 3-4, above, displays these wage distributions and they are plotted, by island, using a kernel density technique. It is not clear that floor exists. While the distribution of Sal does have an apparent sharp drop, it is unclear that the distribution is truncated. In Santiago, the upper left-hand panel, the distribution is most similar to a truncated distribution. Interestingly, it is in Santiago where the public sector is most predominant. The apparent truncation in wage distribution may be the result of a reservation wage that is a function of the apparent public sector wage premium. However, these results are indicative, not conclusive, and a more complete investigation of a more complete data set is required to support this hypothesis.

CONCLUSIONS

3.20 This chapter analyzed two empirical findings; a general trend of rising real wages and declining or stagnant worker productivity. These findings support the conclusion that labor market rigidities may be relatively more binding in the supply side of the Cape Verdean labor market than in the demand side where the previous chapter presented evidence of dynamism.

3.21 The average private sector worker in the formal sector is in fact becoming less productive over time. This decline is almost certainly due to the fact that the employment in private firms in the formal sector has been expanding at an impressive rate. The average net percentage change in employment in Santiago from 1997-2008, for example, was 10.7 percent per year. Unless the supply of skilled workers can keep up with the ever increasing demand for skill, formal sector firms will be forced to hire less and less qualified workers over time.

The results on worker productivity in formal private firms, combined with the relatively high growth rates of employment, calls into question the claim that there is a problem of "skills mismatch" in Cape Verde. The skills mismatch hypothesis states that workers do not have for some reason acquired human capital appropriate to meet the demands of employers. A simpler hypothesis that the demand for general skill has increased substantially and that the supply of skills has not kept pace explains the data equally well.

Appendix to Chapter 3

Consider the following model of wage determination:

$$\boldsymbol{ln(w_{it}) = \alpha_i + \gamma_m + \sum_t \delta_t D_t + \sum_t \theta_t P_t D_t + \varepsilon_{it},}$$

where $\boldsymbol{ln(w_{it})}$ is the log of the monthly wage for person *i* in period *t,* $\boldsymbol{D_t}$ is a dummy variable for period *t*, and $\boldsymbol{P_t}$ is a dummy variable that equals one if the worker is in the public sector in period *t*. Although we do not observe any measures of worker skill such as education, we can estimate a fixed effect $\boldsymbol{\alpha_i}$ for each worker, which could be interpreted as the worker's skill, productivity, or earnings power. The parameters $\boldsymbol{\delta_t}$ capture how wages are evolving over time in the private sector. The parameters $\boldsymbol{\theta_t}$ capture the way that the public sector wage premium is evolving over time. Finally, $\boldsymbol{\gamma_m}$ are fixed effects for each municipality.

We estimate the above equation separately for each of the three main islands: Santiago, Sao Vicente, and Sal. We use data from the last month of each quarter (March, June, September, and December). For the islands of Santiago and Sao Vicente, we use data from 1997-2008. For the island of Sal, we use data from 2002-2008.[31]

The public sector wage premium is high. Recall that $\boldsymbol{\delta_t}$ from our wage equation tells us the wage premium offered to public sector workers in period *t*. It is important to stress that the model controls for unobserved worker heterogeneity, so $\boldsymbol{\delta_t}$ in tells us what the same worker would earn if he or she worked in the public sector. The average value of $\boldsymbol{\delta_t}$ from 1997-2007 in Santiago was 0.41, which means that public sector workers earn about 51% more than they would earn in the private sector. The average value of $\boldsymbol{\delta_t}$ from 1997-2007 in Sao Vicente was 0.33, which means that public sector workers earn about 39% more than they would earn in the private sector. Finally, the average value of $\boldsymbol{\delta_t}$ from 2002-2007 in Sao Vicente was 0.43, which means that public sector workers earn about 53% more than they would earn in the private sector.

The public sector wage premium has been rising in Santiago and in Sao Vicente. Figure 13 shows the values of $\boldsymbol{\delta_t}$ for the three main islands. In the cases of the islands of Santiago and Sao Vicente, the upward trend in the public wage premium is statistically significant. The evidence presented in figure 13 is strongly suggestive that high public sector wages may make it difficult for private sector firms to attract workers. In particular, the high and rising wages in the public sector in the islands of Santiago and Sao Vicente may represent an important constraint for private firms.

We also estimate an econometric model of wage determination that will allow us to examine differences in the types of workers that enter young firms, as well as their wages. In particular, consider the following model of wage determination estimated for the entire country using data from private firms from December of each year from 2002-2008:

$$\boldsymbol{ln(w_{it}) = \alpha_i + \gamma_m + \beta log(firm\ age)_{it} + \sum_t \delta_t D_t + \varepsilon_{it}}$$

[31] The dependent variable is "windsorize". In each month we set equal to the first percentile all wage observations below the first percentile. Similarly, we set equal to the 99th percentile all observations that are greater than the 99th percentile.

where all variables are defined as they were in the previous wage model and $\boldsymbol{log(firm\ age)_{it}}$ is the natural log of the number of years since the firm first started hiring workers.32 As was the case in our earlier wage model, $\boldsymbol{\alpha_i}$ can be interpreted as worker i's skill or productivity. The parameter $\boldsymbol{\beta}$ is measures the percent increase in wages given a one percent increase in firm age, controlling for the worker's productivity or human capital.[33]

The estimated value of $\boldsymbol{\alpha_i}$ for each person, which we denote as $\boldsymbol{\hat{\alpha}_i}$. In order to learn about the types of workers who work in younger and older firms, we estimate the following regression model:

$$\boldsymbol{\hat{\alpha}_i = \gamma_m + \varphi log(firm\ age)_{it} + \sum_t \delta_t D_t + \varepsilon_{it}.}$$

A positive value for $\boldsymbol{\varphi}$ would indicate that people with higher productivity higher skills tend to work in older firms. A negative value for $\boldsymbol{\varphi}$ would indicate that people with higher productivity or higher skills tend to work in younger firms.

[32] A firm is one year old in the first year it hires a worker.

[33] Standard errors are calculated allowing for arbitrary heteroscedasticity and for arbitrary correlations of the error terms across observations that come from the same firm, whether these observations come from the same year or not.

Data appendix- Description of data set from the Instituto Nacional de Previdência Social (INPS)

Cape Verdean employers are required by law to register their workers with the *Instituto Nacional de Previdência Social* (INPS). Registration with INPS implies the payment of social security taxes and affords pension and health care benefits to the registered workers. All employers are required to report information about monthly wages and employment status of each worker to INPS. INPS need this information in order to track eligibility for INPS provided healthcare as well as pensions to retired workers. Of course, the majority of workers are not registered in spite of the legal requirement. Data for the Island of Sal are available from 2002 on. Data for the rest of the country are available from 1996 onward.

For those workers who are registered, however, useful data can be obtained about employment and wages. Firms report monthly information about their registered employees to INPS. Among the variables available from INPS are the monthly wage of the worker, gender, age, the worker's social security number which is consistently coded over time, and the firm's identification number which is also consistently coded over time. The data also include information on the city in which the firm is located.

Data from INPS have numerous advantages. Since the data constitute a census of private workers in the formal sector, the data set is quite large (about 20,000 workers in recent years). The data set is also a panel both of workers and of firms, which allows for at least two types of analyses that have previously been impossible in Cape Verde. First, calculations of worker flows (hires versus separations at the firm level) can be calculated. Second, econometric models that control for worker heterogeneity through the estimation of fixed effects are possible with INPS data.

INPS data do, however, have several limitations that will limit the scope of the analysis. The main limitation is that no information is available about workers when the leave the formal sector. It is not possible, for example, to distinguish between a worker who fell into unemployment and a worker who accepted a job in the informal sector. The data also do not have many of the variables that would be considered standard in most household data sets, with education being the most glaring example. The data also lack basic information about firms such as the firm's industry. One can, however, calculate the number of registered employees in each firm as a measure of firm size.

Attrition is a concern in the data set. In a typical year, about 70 to 80 percent of workers observed in the data set are also observed in the following year. Although this attrition may generate biases in some of our econometric models due to sample selection, we will not be able to control for these biases.

INPS employees themselves began to be incorporated into the data set in 2006. For purposes of comparability over time, these observations are excluded from most of the analyses. INPS workers observations are used only for the purpose of calculating the size of the formal sector in recent years.

For almost all of the country, information could be provided in electronic format from 1996 through 2008. The only exception was that information from the island of Sal could only be provided in electronic from 2002-2008.

One of the files provided by INPS contained information on workers. This file generated on October 13, 2009. That is a sufficient amount of time for INPS to have received almost all of the information of workers through December of 2008. If INPS were to generate the data set again at a later date, however, the data set would change slightly. INPS data can always be corrected if errors or missing information are uncovered.

The unit of observation from the worker file is of course the worker. The variables on the worker file are as follows:

- Year of observation
- Month of observation
- The worker's social security number
- The firm's identification number
- Number of days worked
- Gender of worker
- Age of worker

A worker may have multiple records for a given month and year of observation for two reasons. First, a worker may have two jobs, although less than 0.3% of workers in the data set have multiple jobs. The other reason why a worker might have two records for the same period of observation is that a bonus payment generates a separate record in the database. In our processing of the data, the monthly wages of the two records are added together to get a measure of total compensation for the month.

The other file provided by INPS contained data on firms. The variables on the file with information on firms were:

- Year.
- Month.
- Firm identifier (Part of the firm identifier is the island in which the firm operates).
- Municipality where the firm operates.
- Total contributions paid to INPS.
- Date when the firm started operations.
- Date when the firm started hiring workers.

The files can be merged together because the firm identifier appears as a variable on both data sets. Once the files are merged together, we are left with a matched employer-employee data set from which the calculations in the paper can be made.

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