

Economic Growth and Labor Market in Curaçao, 2013–2015

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Introduction

The association between economic growth and labor market represents a key to development. In Curaçao, this is of particular relevance in the economic context that the island has been experiencing in recent years. Economic growth is not a means to an end: it is expected to serve people, stimulate (human) development and reduce poverty. Economic growth can transform societies, can create jobs, and can improve education and health (DFID, n.d. & Easterly, 1999). There is usually less (infectious) diseases in wealthier countries (DFID, n.d. & UNDP, 2015). Hanushek and Wößmann (2010) found that the quality of education has powerful economic effects. Strong economic growth and employment opportunities can improve incentives for parents to invest in their children (DFID, n.d.). In other words, economic growth – in combination with e.g. factors of the labor market – can generate circles of prosperity and opportunity.

An important indicator of the economy is real GDP growth and for the labor market, important indicators are employment-to-population ratios (also called employment rates) and unemployment rates. The unemployment rate is widely used as an overall indicator of the current performance of a country's economy (Hussmanns, 2007). In Curaçao, the unemployment rate decreased in 2014 in comparison to 2013 and continued to decrease in 2015 (Jansen, CBS 2016). In particular, it is remarkable that in the past two years the unemployment rate dropped, in view of the estimated negative economic growth in 2013 and 2014 (-0.8% and -1.1%, respectively) and the estimated slight growth in 2015 (0.3%; CBS, 2016a). In addition, it is worth mentioning that there has been an increase of 4.3 percentage points in the employed population in 2015 in comparison to 2014, while the economy has been experiencing stagnation. In this article, the authors will explore several indicators of economic growth and labor market in Curaçao for the years 2013–2015, in order to illustrate the interrelations between these two entities.

First of all the theoretical framework, methodology and definitions will be described. Secondly, an overview of the historical developments in the labor market and economy will be given, followed by a presentation of the essentials of economy and labor market for 2013–2015. Finally, a discussion and conclusion about the topic will be presented.

Theoretical framework

Economic growth is the quantitative change or expansion of a country's economy and is usually measured as the percentage increase in Gross Domestic Product (GDP) or Gross National Product (GNP) during one year (World Bank Group, 2004). This increase in GDP or GNP implies there is an increase in

the value of national output or national expenditure. Labor market can serve as an effective mechanism for contributing to economic growth and for transmitting the gains from economic growth. Labor market is the structure that allocates labor to its most productive use and functions through the interaction of those who supply labor services (workers) and those who demand labor services (employers).

Labor represents the human factor in producing the goods and services of an economy. People provide their labor to businesses in exchange for wages and they trade their unpaid leisure time for paid work time to make a living and to be able to purchase goods and services. Businesses, in turn, use this labor to produce goods and services demanded by consumers. The total output (GDP) of an economy is shown as being produced by different factors of production, with capital and labor being the primary ones in modern economies (although land and natural resources can also be included).

An economy can either grow ‘extensively’ by using more resources (for example physical or human capital) or ‘intensively’ by using the same amount of resources more efficiently (productively). When economic growth is achieved through more productive use of all resources, including labor, it results in higher per capita income and improvement in people's average standard of living. It enables consumers to enjoy more goods and services. However, when an economy grows extensively, it does not by definition result in higher income per capita. It may well increase the employed population because companies tend to employ more workers creating more employment which is crucial for development.

A positive relationship – called employment elasticity – has been described between economic growth and employment, mainly in developed economies (Kapsos, 2005 & ILO, OECD, World Bank Group, IMF, 2015). Nevertheless, in developing economies, changes in informal employment could dampen the effect of growth cycles on formal employment (UNCTAD, 2012). An association between economic growth and unemployment has been also described. This relationship is called the Okun’s law (Okun, 1962 and Lee, 2000). The underlying principle behind this law is that economic growth and unemployment have a negative relationship.

Methodology

The interrelations between Curaçao’s economy and labor market in recent years will be explored by taking into account indicators of Curaçao’s demography, economy and labor market for the years 2013–2015. An overview of the indicators that will be used is presented in Table 1. In addition, historical developments between employment and real GDP growth on one hand and unemployment and real GDP growth on the other hand will be presented in order to visualize longitudinal patterns of these indicators.

Table 1. Indicators
Demography
- Inhabitants by gender and by age - Immigrants by country of previous residence and by country of birth
Economy
- GDP per capita - Nominal GDP growth - Inflation rate - Real GDP growth
Labor market
- Labor force participation rate - Unemployment rate - Youth unemployment rate - Employment-to-population ratio - Vacancies

Demographic indicators are derived by data obtained from the population registry database of the Registry office. Economic indicators are estimated on the basis of volume in the production process and economic development.¹² These economic indicators are statistics that indicate the current status of a country's economy, focusing on a particular area of the economy (such as industry, trade, etc.). Indicators of the labor market, describing the demand side and supply side of this market respectively, are measured through the yearly Labor Force Survey (LFS) and the 2014 Business Census.

Definitions

Employed population: all persons of 15 years and older who during the LFS had a job or have their own business; or who during the week preceding the research period performed any work for pay in cash or in kind, for 4 hours or more.

Employment-to-population ratio (employment rate): the proportion of a country's working-age population that is employed.

Foreign-born immigrant: a person who immigrated to Curaçao and whose place of birth is outside Curaçao.

¹² The data that are used for the years 2013–2015 are estimations; these data become fixed when the National Account report is publicized. The latest publication based on the System of National Accounts (SNA) relates to data of the year 2012.

GDP: gross domestic product is an aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production plus any taxes, and minus any subsidies, on products not included in the value of their outputs (United Nations, 2016).

GNP or GNI: gross national product is GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world (United Nations, 2016). Note that gross national income (GNI) is identical to GNP as previously used in national accounts.

Immigrant: any person, regardless of country of birth, who has changed his or her country of (usual) residence to Curaçao, meaning he or she has moved from abroad (including the islands that formerly constituted the Netherlands Antilles, other than Curaçao) to reside in Curaçao.

Labor force: the total number of persons who are employed added to the total number of persons who are unemployed.

Labor force participation rate: the number of persons in the labor force as a percentage of the working age population.

Unemployed population: all persons of 15 years and older who during the LFS did not have a job or a business of their own; and actively had been seeking work in the preceding month of the research period; and who were available to start working or start a business within two weeks.

Unemployment rate: the number of unemployed persons as a percentage of the labor force.

Youth unemployment rate: the unemployment rate in the age category of 15–24 years.

Historical developments in the labor market and economy

The historical developments in the labor market and economy are visualized in figure 1 and figure 2 for the years 1992–2015.¹³ Figure 1 shows the percentage change of employment-to-population ratios and real GDP growth rates.

A positive relationship between employment and economic growth was visible in some years (e.g. years 1994, 2006, 2007, 2015), whereas in other years this was not the case. There were years during which employment decreased, while a positive economic growth was measured (e.g. years 1998, 2001), but

¹³ In the year 1996 there has been a trend break in the real GDP growth due to the introduction of a new System of National Accounts, therefore no percentage change are presented for real GDP growth for the years 1996-1997. In the years 1999, 2010, and 2012 there has been no Labor Force Survey; mean values were imputed for unemployment rates in order to calculate percentage change for the corresponding years.

there were also years during which employment increased, while the country experienced negative economic growth (e.g. years 1992, 1993, 2003, 2008).

Figure 1. Percentage change in Curaçao's employment-to-population ratio and real GDP growth, 1992–2015

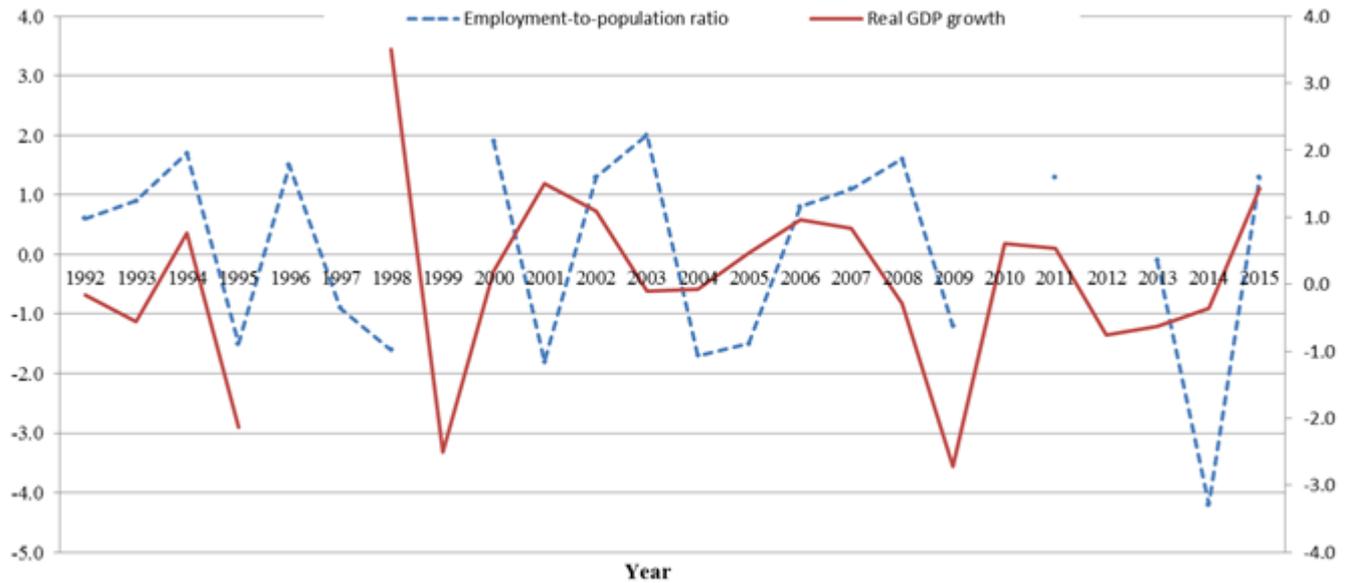
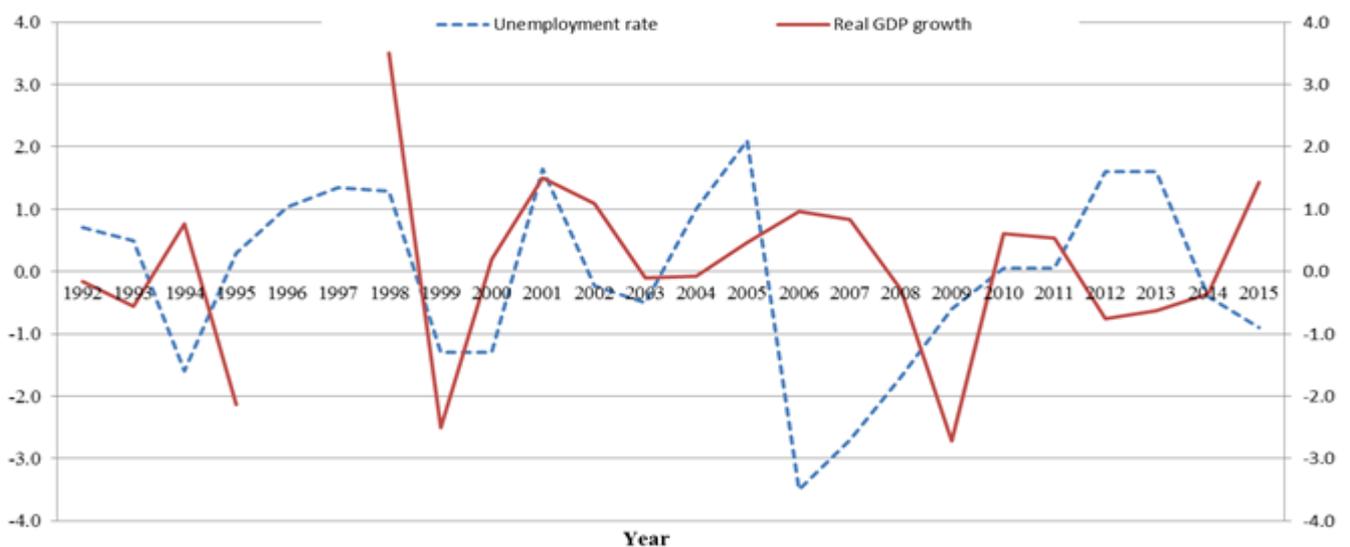


Figure 2 illustrates the percentage change in unemployment rates and real GDP growth rates. In certain years, a negative relationship between economic growth and unemployment was visible. For instance, in 1994 the real GDP growth increased in comparison to 1993 while the unemployment rate dropped in the same year. A comparable relationship was also visible in the years 2000, 2002, 2006, 2007 and 2015. However, there were years where both variables moved in the same direction (e.g. 2000–2001) showing no constant relationship between real GDP growth and unemployment.

Figure 2. Percentage change in Curaçao's unemployment rate and real GDP growth, 1992–2015



Demography

The population of Curaçao consisted of 152,798 persons per January 1, 2013 and grew by 2.7 percent in the following two years, registering a total of 156,971 persons as of January 1, 2015 (Table 2). The increase in the population was mainly due to an increase in the number of people of 25 years and older.

Table 2. Curaçao's demographic characteristics, 2013–2015						
	2013		2014		2015	
Total number of inhabitants per January 1	152,798		154,846		156,971	
	N	%	N	%	N	%
Number of inhabitants: men	69,860	45.7	70,824	45.7	71,713	45.7
Number of inhabitants: women	82,938	52.3	84,022	54.3	85,258	54.3
Number of inhabitants: 0 – 14 years	29,341	19.3	29,450	19.0	29,789	19.0
Number of inhabitants: 15 – 24 years	19,312	12.6	19,531	12.6	19,682	12.5
Number of inhabitants: 25 – 64 years	81,796	53.5	82,741	53.4	83,480	53.2
Number of inhabitants: 65+ years	22,349	14.6	23,124	14.9	24,020	15.3

In general, population growth is to a considerable extent determined by the difference in birth and death. However, population growth in Curaçao in the years 2013–2015 can be mainly attributed to an increase in the number of immigrants as the number of births, deaths, and the number of emigrants remained relatively stable during this period (CBS, 2016b). In fact, migration is a major factor contributing to changes in the size and composition of the population in Curaçao (ter Bals, CBS 2014). A growth in Curaçao's population usually has a direct effect on growth in the labor force. For the scope of this article we will focus only on the population who immigrated to Curaçao, as the information of the population who emigrated and their contribution to the Curaçao's economy is unavailable.

The influence of immigration on labor market depends strongly on the skills of the migrants, the skills of the current (local) workers in the country, and the characteristics of the country's economy (Ruhs & Vargas-Silva, 2015). In 2013–2015, a total of 11,724 persons (5,519 persons in 2013–2014 and 6,205 persons in 2014–2015) immigrated to Curaçao. Table 3 gives an overview of the country of previous residence and the country of birth of the persons who immigrated during the years 2013–2014 and 2014–2015

Table 3. Percentage of immigrants by country of previous residence and by country of birth

Years: 2013–2014			
N = 5,519			
Country of previous residence		Country of birth	
Netherlands	63.5	Aruba, Bonaire, Curaçao, Saba, St. Eustatius, St. Maarten	43.7
Aruba, Bonaire, Saba, St. Eustatius, St. Maarten	6.6	Netherlands	27.2
Dominican republic	5.1	Dominican republic	5.7
Colombia	2.8	Colombia	3.2
Venezuela	2.7	Venezuela	2.7
United States	2.5	China	2.4
China	2.2	Haiti	1.9
Haiti	1.8	India	1.5
India	1.4	United States	1.3
Other	9.8	Other	10.3
Unknown	1.4	Unknown	0
Years: 2014–2015			
N = 6,205			
Country of previous residence		Country of birth	
Netherlands	56.7	Aruba, Bonaire, Curaçao, Saba, St. Eustatius, St. Maarten	35.5
Dominican republic	6.4	Netherlands	28.0
Venezuela	5.8	Dominican republic	7.1
Aruba, Bonaire, Saba, St. Eustatius, St. Maarten	5.7	Venezuela	5.7
Colombia	4.2	Colombia	4.6
China	2.9	China	3.1
United States	2.6	India	2.3
Haiti	2.1	Haiti	2.2
India	2.1	United States	1.6
Other	9.6	Other	9.9
Unknown	1.9	Unknown	0

The majority of the population who migrated to Curaçao departed from the Netherlands (63.5% in 2013–2014 and 56.7% in 2014–2015) and a large percentage of the population who immigrated had one island

of the former Netherlands Antilles including Aruba as their country of birth (43.7% in 2013–2014 and 35.5% in 2014–2015).

When analyzing the country of birth of the persons who migrated to Curaçao from the Netherlands (data not shown), 54.4 percent (2013–2014) and 48.7 percent (2014–2015) was born on an island of the former Netherlands Antilles including Aruba, but also a high percentage was born in the country where they departed from, being the Netherlands (40.6% in 2013–2014 and 46.4% in 2014–2015). These latter percentages of foreign-born immigrants could reflect family members of local persons who are migrating to the country of birth of their family, but it could also reflect migrants who have no historical bound or any relationship with Curaçao. In any case, movements in Curaçao's labor force not only involve local workers, but also immigrants. Especially as the median age of the immigrants who immigrated during 2013–2014 was 28 years (inter-quartile range (IQR) 17–41 years) and also 28 years (IQR 18–41) during 2014–2015. This median age is an age that people would likely be part of the labor force. In addition, the IQR reflect ages that people could be working or looking for a job.

The impact of immigration on employment of current workers in a country critically depends on whether and to what extents the skills of the immigrants is complementary or substitutional to the skills of the local workers (Ruhs and Vargas-Silva, 2015). In Curaçao, the Ministry of Social Development, Labor, and Welfare (SOAW) received about 4,000 applications from immigrants for work permits in 2015 (Ministry of SOAW, 2016). Their applications concentrated mainly on jobs requiring low educational level, which is the educational level of about half of the local unemployed workers who are looking for a job. In 2014 and 2015, 51.7 percent and 54.4 percent of the unemployed population respectively had a second level, first stage education or lower (meaning VSBO, HAVO year 1+2, VWO years 1+2 or equivalent) (Jansen, CBS 2016). In theory, this could lead to competition between immigrants and local workers on jobs requiring low educational levels

Economy and labor market

Economy

Table 4 provides an overview of different indicators of Curaçao's economy. The nominal GDP in Curaçao increased in 2014 in comparison to 2013 by 0.3 percent and when taking into account inflation, the real growth turned out to be negative (-1.1%). The real growth in 2013 was also negative (-0.8%). In 2015, the nominal GDP decreased by 0.2 percent in comparison to 2014 and when taking into account inflation, the economy showed a slight real growth of 0.3 percent. A negative inflation rate of -0.5 has been calculated for 2015. This is the first time, since the CBS has been calculating inflation in Curaçao (1970), that a negative inflation has been registered over a calendar year. A possible effect of negative inflation for the economy could be an increase in the purchasing power (Bomberg, 2016). This could lead to more financial capability to buy products and services. Nevertheless, it has to be taken into account that the GDP per capita (average income per person) decreased during 2013–2015 from ANG 36,628 to ANG

35,713. GDP per capita is a measure of economic activity and one of the core indicators of economic performance (OECD, 2015).

Table 4. Economic indicators, Curaçao 2013–2015			
	2013	2014	2015
Gross Domestic Product (GDP, ANG mln.) ¹	5,634	5,654	5,642
GDP per capita (ANG) ^{1*}	36,628	36,262	35,713
Nominal GDP growth (%) ¹	0.5	0.3	-0.2
Inflation rate (%) ¹	1.3	1.5	-0.5
Real GDP growth (%) ¹	-0.8	-1.1	0.3

¹ Estimated by Central Bureau of Statistics, Curaçao

* Based on mid-year population

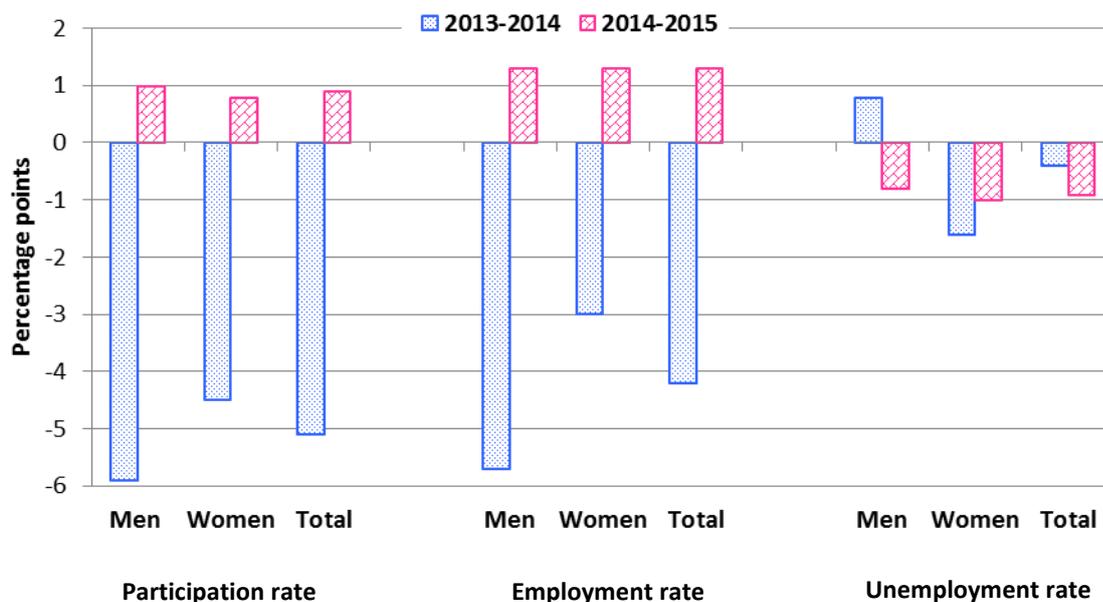
Labor market

The proportion of the population who were available to supply labor in Curaçao (labor force participation rate) decreased from 59.9 percent in 2013 to 54.8 percent in 2014 and increased to 55.7 percent in 2015 (Table 5).

Table 5. Percentage of labor force indicators, Curaçao 2013–2015			
	2013	2014	2015
Labor force participation rate	59.9	54.8	55.7
Unemployment rate	13.0	12.6	11.7
Youth (15–24 years) unemployment rate	37.2	33.2	29.7
Employment/ population 15+ years	52.1	47.9	49.2

The variation in labor force participation rate is visualized in Figure 3. Likewise, the variation in employment-to-population ratio and unemployment rate is pictured. Additional analysis, focusing on age groups, indicated that the direction of variance for the participation rate and the employment-to-population ratio were similar in the age groups between 15 years and 54 years. Thus, the participation rate and the employment-to-population ratio both dropped in 2014 in comparison to 2013 and increased again in 2015 in the age groups 15–24 years, 25–34 years, 35–44 years, and 45–54 years (data presented in reports of LFS 2013 and 2014–2015). Nevertheless, it has to be mentioned that the drop between 2013 and 2014 (for both indicators) was steeper in the age group 15–24 years in comparison to the other age groups.

Figure 3. Variation in labor force participation rate, employment-to-population ratio, and unemployment rate, by sex, 2013–2014 and 2014–2015



Also worth mentioning is the fact that from 2014 onwards the age groups 55–64 years and 65+ years are being presented for the first time due to changes in local policies regarding the age of retirement (retirement age changed from 60 years to 65 years). Therefore, caution should be taken when interpreting results in these age groups. For this reason, no comparison in the participation rate, employment-to-population ratio and unemployment rate for these age groups will be presented in this article.

Curaçao’s unemployment rate decreased slightly from 13.0 percent in 2013 to 12.6 percent in 2014 and continued to decrease to 11.7 percent in 2015 (Table 5). The majority of the unemployed persons were born in Curaçao (Table 6).

Table 6. Country of birth of unemployed persons, 2013–2015			
	2013	2014	2015
Number of unemployed persons (N)	9,512	8,555	8,198
Curaçao (%)	78.1	79.9	73.6
Aruba, Bonaire, Saba, St. Eustatius, St. Maarten (%)	1.0	2.0	0.8
Netherlands (%)	3.2	1.3	3.5
Other (%)	17.4	17.0	22.1
Unknown (%)	0.2	0.0	0.0

A breakdown by gender indicated that the direction of variance for unemployment rate in the years 2013–2015 was different for men and women (Figure 3). The subsequent drop in the unemployment rate occurred only among women (women unemployment rate 2013, 2014, and 2015: 15.4%, 13.8%, and 12.8% respectively). The unemployment rate among men increased slightly in 2014 in comparison to 2013 and decreased again in 2015 (men unemployment rate 2013, 2014, and 2015: 10.5%, 11.3%, and 10.5% respectively).

An analysis by age group indicated that the subsequent drop in unemployment rate occurred in the age groups 15–24 years and 25–34 years. The unemployment rate in age group 35–44 years increased in 2014 in comparison to 2013 and decreased again in 2015 (35–44 years unemployment rate 2013, 2014, and 2015: 10.5%, 13.1%, and 10.0% respectively). In age group 45–54 years, it remained relatively stable in 2014 in comparison to 2013 and increased in 2015 (45–54 years unemployment rate 2013, 2014, and 2015: 8.8%, 8.9%, and 9.7% respectively).

In 2014, a total of 1,050 jobs were available in Curaçao (Ministry of Economic Development, 2016). Most of the available jobs were in the industries: ‘wholesale and retail trade, repair of motor vehicles and motorcycles’; ‘accommodation and food service activities’; and ‘human health and social work activities’. As presented in table 7, most of the employed persons in 2014 were also working in these three industries. Besides, a large amount of the unemployed persons in 2014 (N=8,555) were looking for a job in these industries. Approximately, 9 percent of the unemployed population in 2014 reported ‘accommodation and food service activities’ as the industry where they would like to work. About 8 percent reported ‘wholesale and retail trade, repair of motor vehicles and motorcycles’, and around 4 percent want to work in the industry of ‘human health and social work activities’.

Table 7. Percentage of economic activity of employed population, 2013–2015

	2013	2014	2015
	<i>ISIC rev. 3</i>	<i>ISIC rev. 4</i>	<i>ISIC rev. 4</i>
Agriculture, forestry, fishing, mining, and quarrying	0.4	0.6	0.2
Manufacturing	6.2	7.2	6.1
<i>Electricity, gas and water supply (utility)¹</i>	1.9	1.9*	2.3*
Electricity, gas, steam and air-conditioning supply		0.7	1.2
Water supply; sewerage, waste management and remediation activities		1.2	1.1
Construction	7.5	6.6	6.5
Wholesale and retail trade; repair of motor vehicles and motorcycles	18.9	16.8	17.4
<i>Transport, storage & communication¹</i>	8.0	8.5*	8.1*
Transportation and storage		5.3	5.3
Information and communication		3.2	2.8
Accommodation and food service activities	9.6	8.9	8.4
Financial and insurance activities	7.1	7.1	7.5
<i>Real estate, renting and business activities¹</i>	10.4	10.0*	10.5*
Real estate activities		0.7	0.6
Professional, scientific and technical activities		3.7	3.4
Administrative and support service activities		5.6	6.5
Public administration and defense; compulsory social security	7.4	8.4	6.6
Education	5.5	4.9	4.3
Human health and social work activities	8.4	9.7	9.7
<i>Other community, social and personal service activities¹</i>	4.4	4.8*	5.2*
Arts, entertainment and recreation		2.5	2.5
Other service activities		2.3	2.7
Activities of households as employers; undifferentiated goods- and services producing activities of households for own use	3.3	2.9	3.3
Activities of extraterritorial organizations and bodies	0.2	0.4	0.3
Unknown/ not reported	0.8	1.3	3.7

¹ *International Standard Industrial Classification (ISIC) rev. 3 for 2013, 2014 and 2015*

* *Combination of economic activities based on ISIC rev. 4 is used in order to make comparability with ISIC rev.3*

Of the available jobs in 2014 (N=1,050), about 20 percent were new jobs openings in that year (Ministry of Economic Development, 2016). The greater proportions of new jobs openings were in the industries: ‘wholesale and retail trade, repair of motor vehicles and motorcycles’ and ‘accommodation and food service activities’. As there was no research on the number of job availability in 2013 and 2015, it is not possible to evaluate this development over time.

Employment and economic activities in sector and industries

When analyzing the labor market it is important to look at the industries and sectors where the employed population works. There are industries and sectors which require a large amount of workers in order to produce goods or services (for instance ‘accommodation and food service’), while other industries and sectors do not require a large amount of personnel. The interrelation between employment and economic activities in sectors and industries will be explored to see if economic progress or decline in a sector or industry has influenced the employment share in those sector and industries in the years 2013–2015. An analysis of a select amount of industries and sectors will be taken into account by observing the change in the percentage contribution to the total GDP per industry.

Agriculture, fishing and mining

The developments in the industry of agriculture, fishing and mining in Curaçao are mainly measured on the basis of the production of sand and blocks, thus mining. The participation of agriculture and fishing are of less impact. The overall contribution of these industries to the GDP decreased by 4 percent in 2013 and by 4.1 percent in 2014, but increased by 4.5 percent in 2015 (Table 8).

Table 8. Percentage real change in estimated Gross Domestic Product (GDP) by sector and industry, 2013–2015

	2013	2014	2015
Non-financial corporations			
A+B+			
C Agriculture, fishing and mining	-4.0	-4.1	4.5
D Manufacturing	0.8	-0.9	-4.0
E Electricity, gas and water supply	-3.4	-2.4	-5.1
F Construction	-1.0	-2.8	9.0
G Wholesale and retail trade; repair of motor vehicles and motorcycles	-8.6	-3.2	-2.0
H Hotels and restaurants	1.6	5.4	-2.7
I Transport, storage and communications	3.4	-2.8	-7.4
K Real estate, renting and business activities	0.7	-2.3	4.9
M Education private	-6.3	2.2	1.8
N Health and social work	-1.1	1.5	-0.2
O Other community, social and personal service activities	-0.8	-0.6	6.3
Financial corporations			
J Financial intermediation	-0.6	-2.1	0.7
Government			
	-1.3	-3.6	3.9
Households & Non-profit institutions serving households			
	-7.7	1.7	1.8
Total value added gross, market prices			
	-0.3	0.2	-0.5
Plus taxes less subsidies on products	8.7	-0.6	1.0
minus FISIM	4.3	-9.6	-5.9
Domestic product gross, market prices (nominal)			
	0.5	0.3	-0.2
Inflation			
	1.3	1.5	-0.5
Real GDP growth			
	-0.8	-1.1	0.3

The developments in sand and blocks run mostly parallel with developments in the construction industry (Table 8). Though, the production of these mining products is not totally dependent on the local market, but also depends on export to other countries. The share of the employed population in this industry has been fluctuating from 0.4 percent in 2013 to 0.6 percent in 2014 and to 0.2 percent in 2015 (Table 7). Therefore, an increase in the added value of this industry in 2013–2015 did not mean an increase in the share of the employed population.

Manufacturing

The contribution of the manufacturing industry to the GDP has decreased by 4 percent in 2015. This decrease is mainly attributed to the decline in refining production. Other indicators in this industry such as ship repair and other small manufacturers indicated an increase, but the drop in refining had a dominant impact on the overall industry. The employment shares for the years 2013 to 2015 remained almost at the same level with respectively 6.2 percent, 7.2 percent, and 6.1 percent of the employed population.

Electricity, gas and water supply

The overall utility production showed a negative economic growth rate in the years 2013 through 2015 (Table 8). Hereby, the production of water (measured by cubic meters) and electricity (measured by kilowatt/ hours) are taken into account. The volume of electricity generation in 2015 has decreased with about 6 percent compared to the 2014 levels, while water production showed a decrease of about 3 percent (data not shown). Regarding employment, the employment share remained the same for 2013 and 2014 with 1.9 percent, while in 2015 it increased to 2.3 percent (Table 7). Basically, there was a decrease in utility production (possibly due to alternative energy), while the share of workers in this sector has increased.

Construction

In this industry a substantial change has been observed in the economic parameters in the years 2013–2015. There were increases in the investment of finished works and there were still construction in ongoing projects for 2015. The activities in the industry of construction have increased with 9 percent in 2015 (Table 8). However, this was not the case for the prior years. In 2013 and 2014, there was a decrease of 1 percent and approximately 3 percent respectively. In other developments in this industry it is viewed that the employment share decreased in this industry. In 2013, 7.5 percent of the employed population was working in this industry, while in 2014 and 2015 this figure was respectively 6.6 percent and 6.5 percent (Table 7).

Wholesale and retail trade; repair of motor vehicles and motorcycles

The main indicator for trade is the development in the import of merchandise. This industry has experienced a decline in the activities of 8.6 percent in 2013 (Table 8) and a decline was also a fact in 2014 (-3.2%) and in 2015 (-2.0%). The trade industry has the largest share of the employed population in Curaçao; it ranges from almost 19 percent in 2013 to around 17 percent in 2015 (Table 7). This shows that the economic activities in this industry moved in the same direction as the employment population in this industry in the period 2013–2015; both declined in the aforementioned period.

Hotels and restaurants

The output of hotels and restaurants industry has been on a positive note in 2013 (1.6%) and 2014 (5.4%), but decreased with 2.7 percent in 2015 (Table 8). The main indicator in this industry is ‘stay over nights’, which are used to measure the developments. The Curaçao tourism industry has experienced a steady growth in stay over nights up to 2015. The amount of stay over nights by tourists in hotels was 3,739,158 nights in 2013 and increased to 3,971,630 nights in 2014 (about 6% increases). In 2015 however, the stay over nights experienced a decline that amounted to 3,854,404 nights, which is about 3 percent drop

compared to 2014. The results in activities of hotels and restaurants industry over the subsequent years do not correlate completely with the movements in employment in this industry. Employment share in this industry has experienced a minor fall from 2013 to 2015 from respectively 9.6 percent to 8.9 percent, to 8.4 percent (Table 7). This may be due to the uncertain nature of this industry which is heavily dependent on international developments.

Transport, storage and communication

Transport, storage and communication have a significant decrease in the economy of 7.4% in 2015. This is mainly observed in the diminished activities in the harbor. The share of the employed population remained fairly constant through 2013 to 2015 and was about 8 percent through the years (Table 7). This shows a certain degree of stability through the years of which fluctuations have been kept to a minimum.

Health and social work

In the industry of health care there has been a slight shrinkage in activity of 0.2 percent in 2015. This decrease was due to negative business revenue. In the years before, there has been a decline of around 1 percent in 2013 and an increase of 1.5 percent in 2014 (Table 8). Health and social work is in the top three ranking where the greatest share of people is employed. Regarding labor, the employment share that has been observed in this industry was about 10 percent for 2014 and 2015; in 2013 it was about 8 percent (Table 7). This shows that the economic activities not necessarily influenced the employment availability in this industry in the period 2013–2015.

Financial intermediation

In the industry of financial intermediation there has been a positive development (0.7%) for 2015, after two years of steady decline (Table 8). A weighted financial index consisting of the balance of the off-shore commerce operation remainder (the inflow export services minus outflow import services) and the supplied loans by the commercial banks is used as indicator for this industry. In the years 2013–2015, the share of employed persons in this industry remained almost stable at around 7 percent.

Government

The major indicators for this institutional sector are the amount of civil servants and other government indicators such as government consumption and investment in the different government industries. After a decline in the output of the government sector in 2013 and 2014 (-1.3% and -3.6%, respectively), an increase of almost 4 percent has been viewed in 2015 (Table 8). The share of the employed population in this industry has been fluctuating through 2013 to 2015. It has increased from about 7 percent in 2013 to 8 percent in 2014, followed by a decline reaching almost 7 percent in 2015 (Table 7). The latter is most likely influenced by the general hiring freeze that is in effect in this sector.

Households & Non-profit institutions serving households

This institutional sector has shown a positive growth of about 2 percent in 2014 and 2015. In 2013, there was a sharp decline of 7.7 percent in the economic output. In this sector all small activity businesses are included with the nonprofit organizations. The share of the employed population in this industry has been fluctuating around 3 percent in the years 2013–2015.

The interrelation between employment and economic activities in some sectors and industries showed that economic progress or decline in these sectors or industries have influenced the employment share in those sector and industries in the years 2013–2015. However, in some industries and sectors, economic activities did not correlate with movements in the employed population in this industries or sectors.

Discussion and conclusion

In the last two years, the Curaçao's total unemployment rate decreased in view of the estimated negative economic growth in 2013 and 2014 and the low rate of economic growth in 2015. Similar to the unemployment rate, both the labor force participation rate as well as the employment-to-population ratio dropped – a steeper drop than the unemployment rate – between 2013 and 2014. Between 2014 and 2015, a small increase in both indicators (labor force participation rate and employment-to-population ratio) has been registered. In 2014, about 20% newly jobs have been created in Curaçao and the employed

population increased by 4.3 percentage points in 2015 in comparison to 2014. The fall in the unemployment rate from 13.0 percent in 2013 to 11.7 percent in 2015 is probable not completely the result of job creation in 2014, but principally due to lesser people participating in the labor force. The

development of decreasing unemployment rate and decreasing labor force participation rate and employment-to-population ratio in recent years have also been registered in other parts of the Caribbean and Latin America (ECLAC & ILO, 2016).

Generally, a falling labor force participation rate is not per se good news and a decreasing trend cannot be sustained over time. Nevertheless, it tends to be less disadvantageous for a country when it occurs mainly among young people, provided that they are staying longer in education (ECLAC & ILO, 2016). As indicated in this article, the drop in the labor force participation rate between 2013 and 2014 was steeper in the age group 15–24 years in comparison to the other age groups. In addition, additional results of the LFS indicated that a higher percentage of the unemployed youngsters in 2015 (about 20%) attended a daytime education in comparison to the unemployed youngsters in 2014 (about 12%).

In a period of two years, a total of 11,724 persons immigrated to Curaçao. In establishing the interrelation between immigration and economic- and labor market outcomes is the fact that immigrants may be disproportionately attracted to countries with strong economic performance. This may not be the case for Curaçao, which has a negative and low economic output for 2013-2015, but perception wise Curaçao may be better than their personal situation. Hence, Curaçao's labor force not only comprises local workers, but also immigrants. Given that the skills of these immigrants replace the skills of local workers, immigration can be expected to increase competition in the labor market and possibly downgrade salaries (Ruhs and Vargas-Silva, 2015). On the other hand, if the skills of the immigrants and local workers combine in such a way they enhance or emphasize the qualities of each other (complementary), productivity in the country will increase which can be expected to lead to a rise in the salaries of all workers.

As described in the results, the majority of the job applications of immigrants in Curaçao in 2015 were jobs requiring low educational levels, which represent the education level of half of the unemployed population in Curaçao. Therefore, competition on the labor market between local workers and immigrants could be possible. In addition, these immigrants could accept jobs at lower wages, thus creating stagnant wages for locals. However, whether and to what extent decreasing salaries increase unemployment among existing local workers depends on their willingness to accept new lower salaries (Ruhs and Vargas-Silva, 2015).

Eustatius (2015) found that the Curaçao's labor productivity declined in the years 2010 and 2011 and the International Monetary Funds (IMF) projected a declining trend in our labor productivity for the years 2012 to 2016 (IMF, 2014). By taking into account the declining labor productivity, the decreasing GDP per capita in the years 2013–2015, and the increase in the employment-to-population ratio in 2015, it is probable that the estimated slight growth in Curaçao's economy in 2015 is an 'extensive' growth. An economy that grows extensively does not result in higher income per capita and productivity, but may increase the employed population (World Bank Group, 2004).

In terms of employment, both the decrease in the employed population in 2014 in comparison to 2013 and the increase in 2015 in the LFS were visible in other statistics. Information from the Ministry of SOAW concerning application for work permits as well as information on the amount of workers reported by businesspersons in the Business Cycle ('conjunctuurenquête, CE') showed comparable patterns as observed in the LFS. Nevertheless, it has to be taken into account that countries with high level of informality can have difficulties to measure the exact size of their employed population through a LFS (ECLAC and ILO, 2016). Movements in and out of informal, low-quality employment could diminish employment in the formal economy as captured in official statistics. At present, it is unknown what the size of informality is in Curaçao, making it sometimes difficult to understand the real association between economy and labor market. Consequently, there were interrelation between the economic growth and the employment share in some sectors and industries. However, this was not the case in all sectors and industries.

In order to better understand the dynamics of labor market in combination with economic growth, it is necessary to analyze the amount of the employed population by economic activity for the years 2014 onwards. This will give a broad insight on the changes in the employed population in each economic activity. Furthermore, it is utmost necessary to investigate results of the LFS in combination with the results of the National Accounts in order to get more insight in the relation between labor market and economy.

In summary, a stagnant economic growth in Curaçao in the last few years together with labor market dynamics that has experienced changes is certainly a challenge. For a turnaround it is desirable to enforce the declining unemployment rate and foster economic growth that will serve the society as a whole. Moreover, it is desirable to take measurements that will fortify labor productivity and further

increase the labor force participation rate. Nevertheless, it should be kept in mind that the International Labor Organization warns for increasing unemployment in the coming years, as the global economy has entered a new period combining slower growth, widening inequalities and turbulence (ILO, 2016).

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