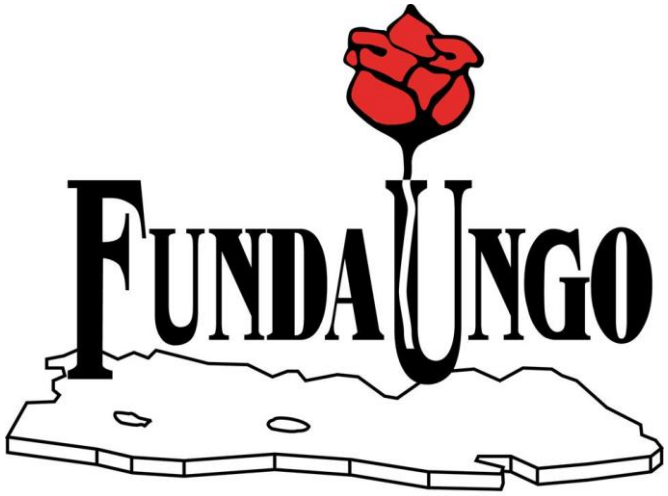


First demographic dividend and migration in El Salvador: How much have we lost?

November 2014

Content

1. Research question

Research questions

- What is the first demographic dividend contribution to El Salvador’s economic growth?

- What are the losses in the contribution of the first demographic dividend to El Salvador´s economic growth due to emigration of Salvadorans?

2. Objectives

Objectives

- Quantifying the contribution of the first demographic dividend to El Salvador´s economic growth in order to understand the role of the first demographic dividend in El Salvador´s economic performance

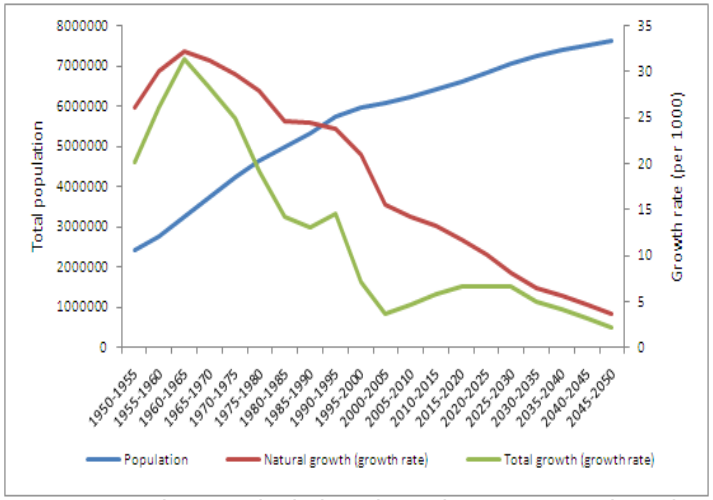
- Measuring the losses in the contribution of the first demographic dividend to El Salvador´s economic growth due to emigration of Salvadorans in the period 1970-2050.

3. Context

El Salvador demographic transition

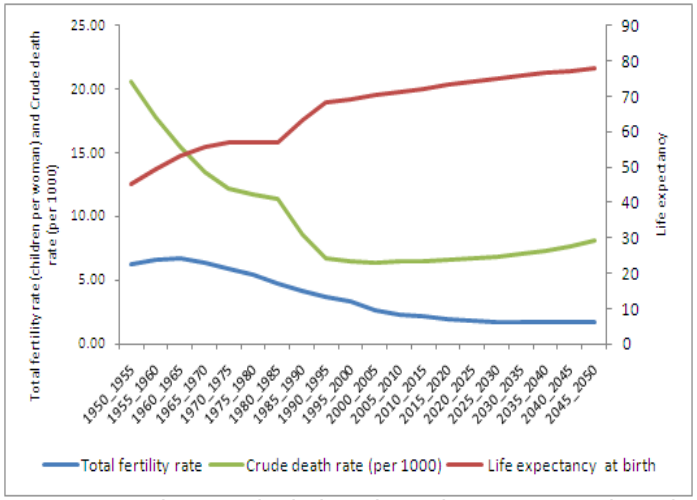
- in 1950 the total population was **1.85** million
- according to projections, population will reach **8.08** million by 2050
- Fertility: 1960-1965: **6.3**, 2005-2010: **2.35**, 2045-2050: **1.77**
- Mortality: 1950-1955: **20.56**, 2005-2010: **6.5**, 2045-2050: **8.13**
- Life expectancy at birth: 2005-2010: **71.28**, 2045-2050: **78.06**

Figure 1. El Salvador 1950-2050. Population natural growth and total population growth



Source: Author´s calculations based on CELADE (2014).

Figure 2. El Salvador from 1950-2050. Total fertility rate, mortality rate and life expectancy at birth



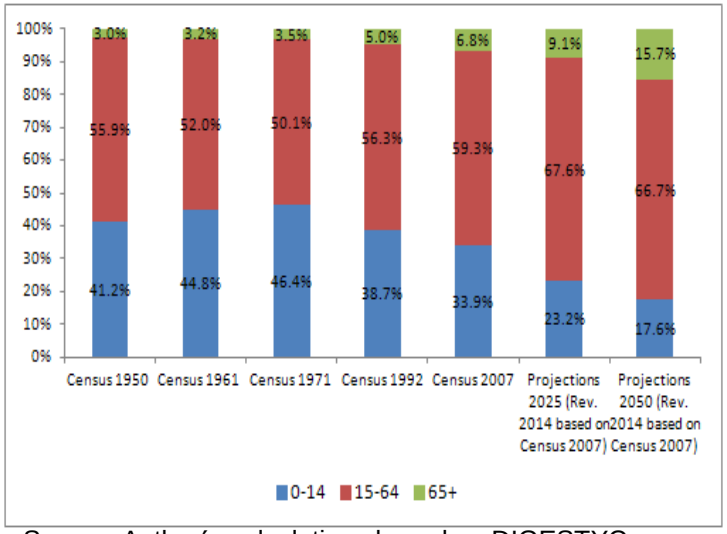
Source: Author´s calculations based on CELADE (2014).

3. Context

El Salvador demographic transition

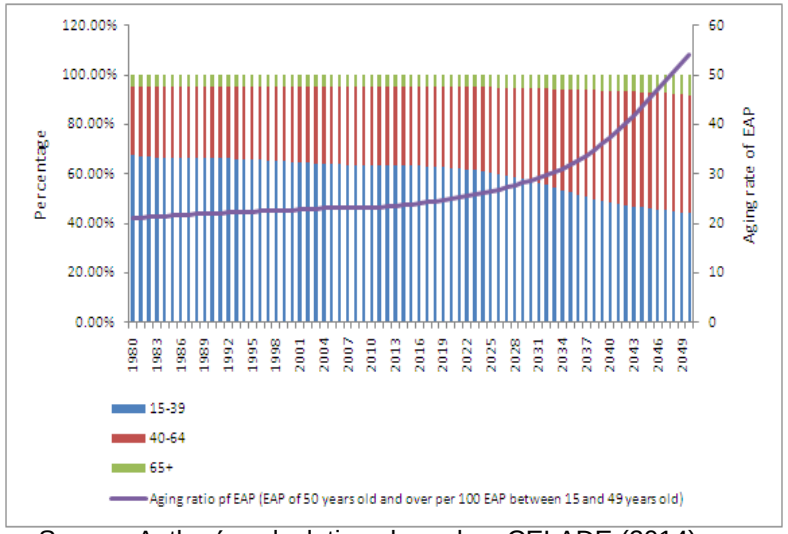
- In 2007 people over 64 years represented **6.8%** of the total population
- It is expected that by 2050, people over 64 years will represent **15.7%** of the total population
- Age groups older than 39 years of age will gain weight in the Economic Active Population, up to represent **52.22%** of it in 2050

Figure 3. El Salvador 1950-2050. Changes in age structure, census and projections (%)



Source: Author´s calculations based on DIGESTYC (2008).

Figure 4. El Salvador 1980-2050. EAP per groups of age and rate of aging of the EAP



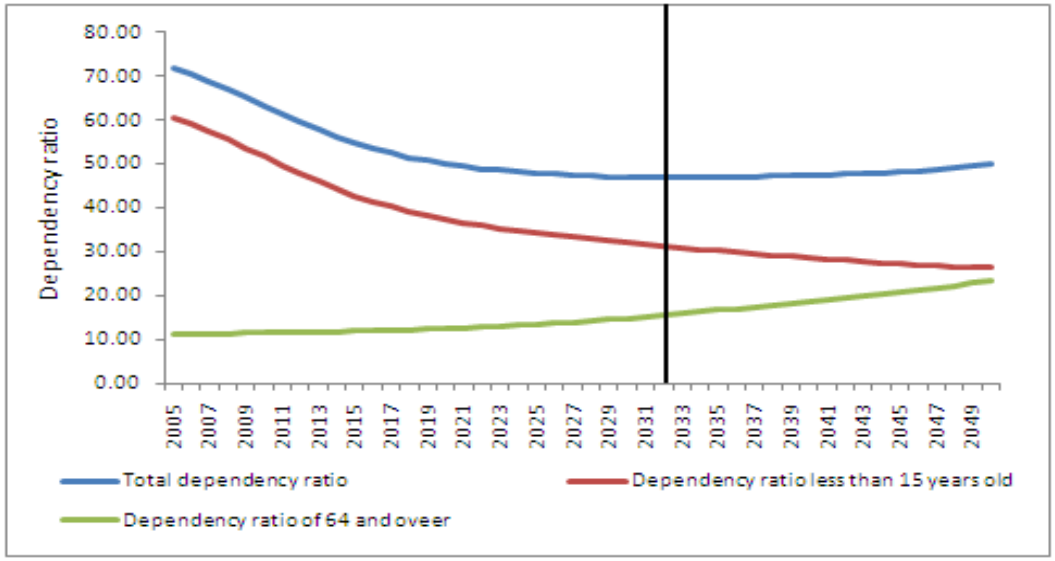
Source: Author´s calculations based on CELADE (2014).

3. Context

El Salvador demographic transition

- Since 2033 the dependency ratio will reverse its decline
- The main reason for this lies in the growth of the dependency ratio of people over 64, which is steadily growing, even it is expected to surpass the dependency ratio of young to mid decade of 2050s.

Figure 5. El Salvador 2005-2050. Total and age groups dependency ratios



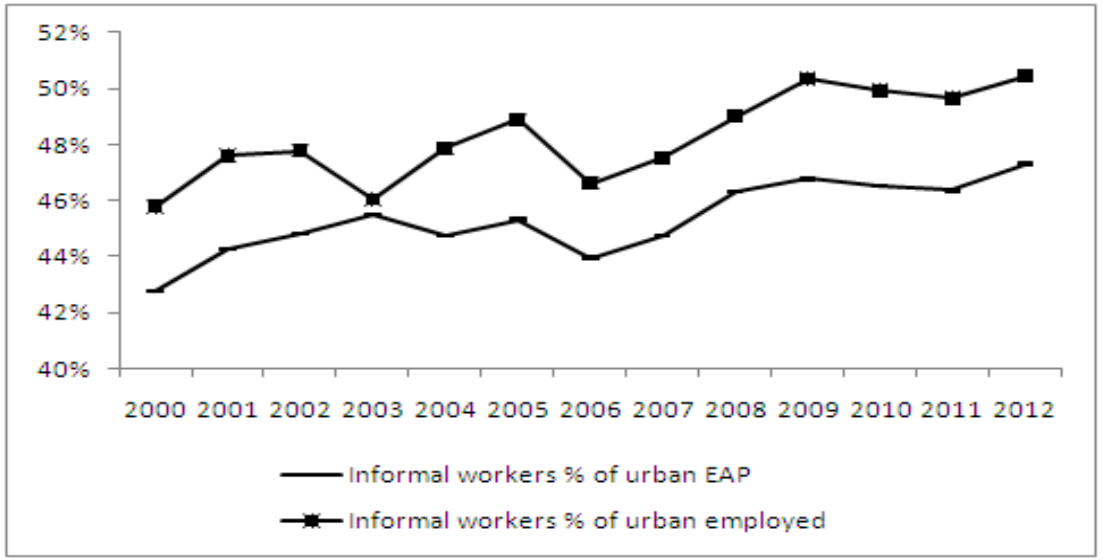
Source: Author´s calculations based on DIGESTYC (2014).

3. Context

El Salvador labor market and productivity

- For the period 2000-2012 the informal sector represented, on average, about 45% of the EAP in the urban area and 48% of total urban employed.
- In 2013 27.7% of urban employed were underemployed
- As an example, in Mexico it was estimated that if producers are assigned with the same amounts of capital and labor, the enterprises in the informal sector tend to be 50% less productive than those in the formal sector

Figure 6. El Salvador 2005-2050. Total and age groups dependency ratios



Source: Author´s calculations based on EHPM (various years).

3. Context

El Salvador emigration to United States

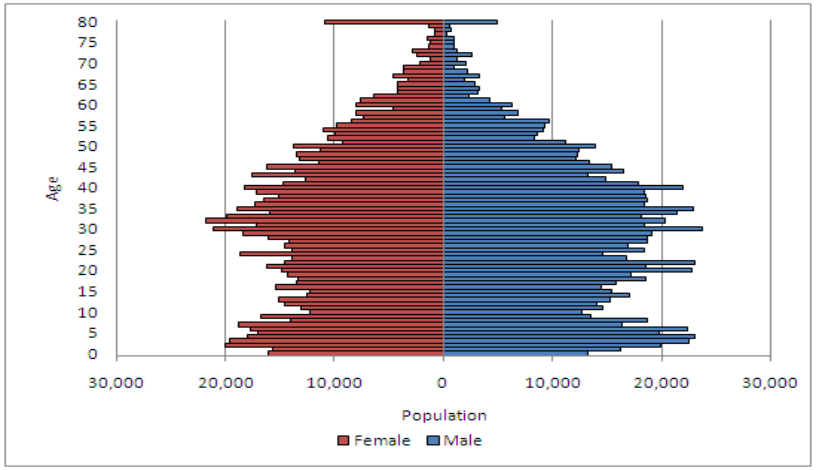
•In 2012 Salvadorans in the US has grown to **1, 969.495**, representing **31.3%** of the total population of El Salvador in 2012 (Ruggles et al, 2010 and DIGESTYC, 2014).
• In 2012, 7 out of 10 Salvadorans were between 15 and 64 years

Table 1. Number of Salvadorans abroad by region and country (*) Only takes into account Salvadorans born in El Salvador.

Región/país	Rondas censales 2010	
	Conteo	%
América Latina	25,214	2.06%
Canadá	42,780	3.50%
España	8,784	0.72%
Estados Unidos	1, 146,688	93.72%
Total	1, 223,466	100.00%

Source: Author´s calculations based on Pizarro et al (2014),

Figure 10. Salvadoran population in the United States in 2012



Source: Author´s calculations based on Ruggles et al (2010).

4. Methodology

- To estimate the impact of the first demographic dividend on the economic growth and the losses in its contribution due to the emigration of Salvadorans, this study will use the methodology suggested by Mason (2005) and Mason (2007) and the practical studies conducted by Mason (2007), Mejía et al (2010), Mejía and Murguía (2012) and Rosero and Robles (2008).

The production per effective consumer is defined as follows:

$$\frac{Y_t}{N_t} \equiv \frac{L_t}{N_t}\frac{Y_t}{L_t} \quad (1)$$

Support ratio

L_t is the effective number of workers

N_t is the number of effective consumers

4. Methodology

The effective number of workers and consumers can be defined as follows:

$$L_t = \sum_{x=0}^{w} \gamma(x) P_t(x) \; y \; N_t = \sum_{x=0}^{w} \varphi(x) P_t(x) \quad (2)$$

$$\frac{\dot{L_t}}{L_t} - \frac{\dot{N_t}}{N_t} \quad (3)$$

Basically, the expression 3 tells us that when the growth of labor income (controlled by the change in the age structure over time) compensates for the increase in consumption (controlled by the change in the age structure over time) it would obtain a positive demographic dividend (Mejia et al, 2010).

4. Methodology

To simulate the demographic dividend that the country would have in the hypothetical case of no migration abroad (mainly towards US) we must add Salvadoran effective consumers and Salvadoran effective producers living in the U.S. This implies to define the two concepts as follows:

$$L_t = L_{tes} + L_{tes-us} \qquad N_t = N_{tes} + N_{tes-us} \quad (4)$$

Where, L_{tes-us} and N_{tes-us} are defined as follows:

$$L_{tes-us} = \sum_{x=0}^{w} \gamma(x) P_{tes-us}(x) \; y \; N_t = \sum_{x=0}^{w} \varphi(x) P_{tes-us}(x) \quad (5)$$

The demographic dividend is obtained by considering both cases, with and without migration of Salvadorans to the United States:

$$\left[\frac{\dot{L_{t,S}}}{L_t} - \frac{\dot{N_{t,S}}}{N_t}\right] + \left[\frac{\dot{L_{t,M}}}{L_t} - \frac{\dot{N_{t,M}}}{N_t}\right] \quad (6)$$

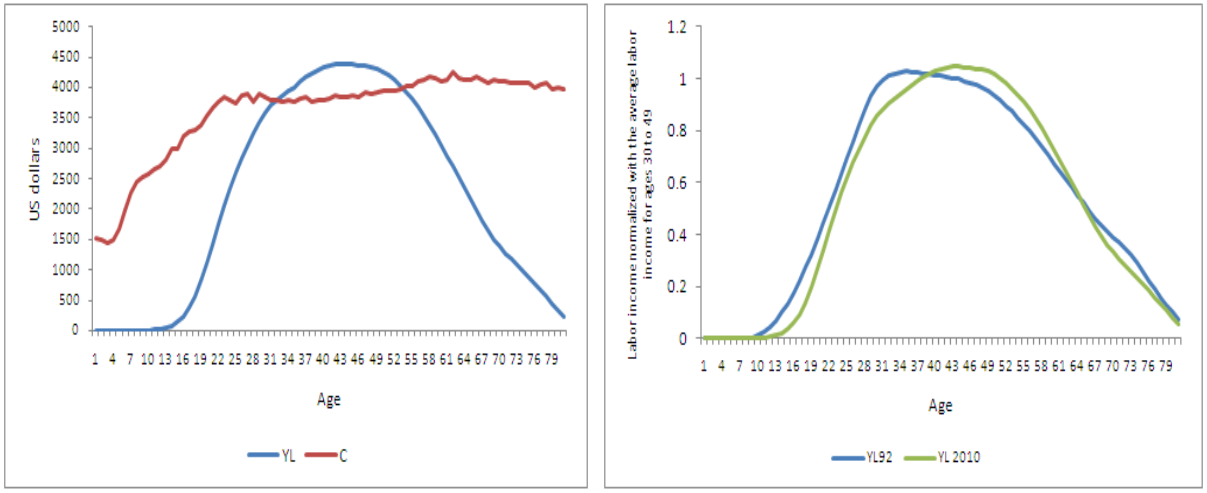
4. Methodology

Data and assumptions:

The method requires: i) the historical series of the age profile of average earnings ii) the historical series of per capita consumption by age and iii) the historical series of the age structure of the population.

- Estimates of the lifecycle deficit for 2010 developed by Córdova et al (2014) for the case of El Salvador are available.
- About this, Mason (2007, cited in Mejía et al, 2010) has proposed to use the life cycle deficit of a specific year and assume that its age structure is maintained during the demographic transition.

Figure 11. Life cycle deficit 2010 and labor income profile 1992 and 2010



Source: Author´s calculations based on Córdova et al (2014).

4. Methodology

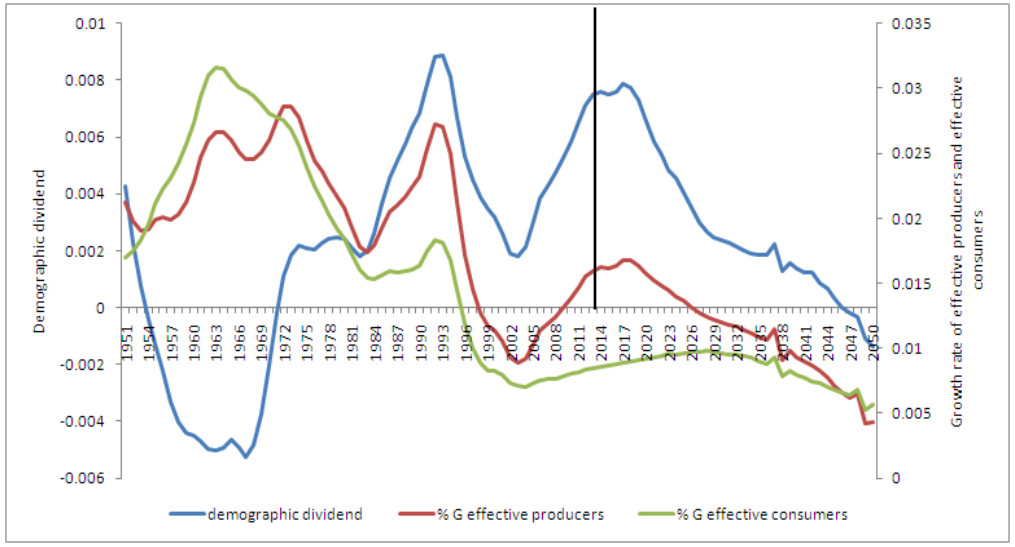
Data and assumptions:

- The estimated flows of Salvadorans migrants to the United States since 1970 is obtained from the American Community Survey of 2012 (Ruggles et al, 2010)
- A linear projection for each age was used to project the flows of Salvadoran emigrants from 2011 to 2050
- it is also assumed that the number of births of Salvadorans in the United States will present the same behavior as the growth rate of the projections of the number of births of Hispanics population in the United States
- It will be assumed that Salvadorans in the United States would have the same profile of labor income and consumption than the average Salvadoran.

5. Results

- The accumulated demographic dividend between 1951 and 1969 was -5.8%, with a negative annual average contribution of -0.294%
- From 1991 to 2013 the cumulative contribution of the demographic dividend to the growth of income per effective consumer was 11.74%, growing at an annual average rate of 0.51%
- From 1970 to 2033, the cumulative contribution of dividend reaches 27.21%, with an average annual growth rate of 0.43%.

Figure 12. El Salvador 1951-2050. Demographic dividend and growth rates of effective producers and consumers



Source: Author´s calculations based on Córdova et al (2014) and DIGESTYC (2010).

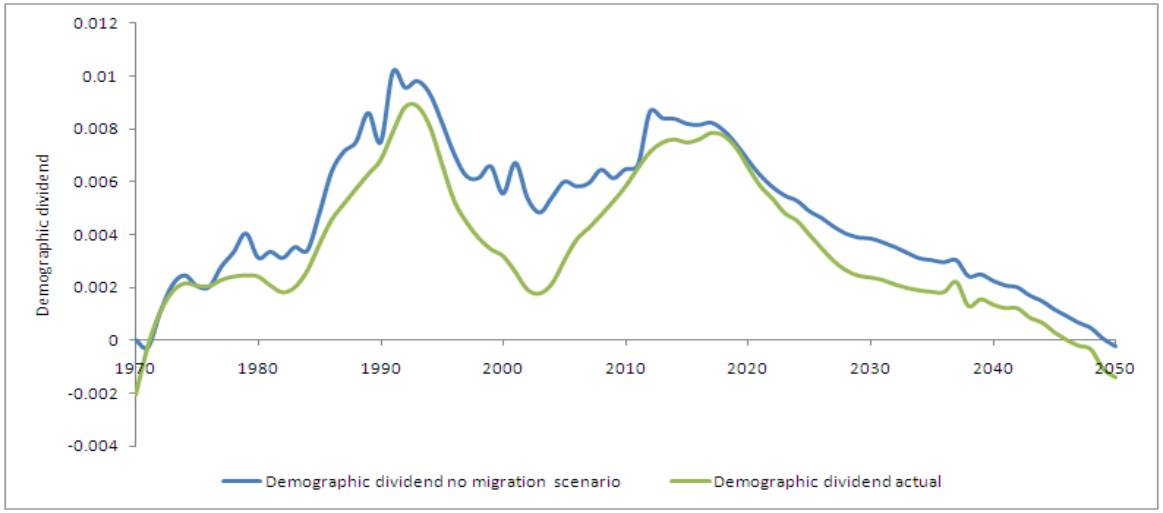
5. Results

- in 1993 was registered the greatest contribution of the dividend in the period 1951 to 2050 (0.89%)
- The demographic dividend will disappear between 2046-2047.
- It lasted for 78 years (1969-2047), as a country we only have 33 years to take advantage of it.
- Mason (2005) estimated that the dividend for Latin America will last an average of 47.9 years
- In comparison, the accumulated contribution of the first mexican demographic dividend to growth in income per effective consumer was 28% in the 1974-2008 period, result higher than the one observed in El Salvador in the period 1991-2013 (33.83%) and Brazil (28.72%) in the period 1970-2010 (Turra and Queiroz, 2010).

5. Results

- The first conclusion is that the contribution of the demographic dividend to the growth in income per effective consumer is greater in the hypothetical scenario of no migration for the entire period of the demographic transition of El Salvador.

Figure 12. El Salvador 1970-2050. Demographic dividend and growth rates of effective producer and consumer in scenarios without emigration and with emigration



Source: Author´s calculations based on Córdova et al (2014), DIGESTYC (2010) and Ruggles et al (2010).

5. Results

Table 3. El Salvador 1991-2050. Growth rates of demographic dividend and GDP per effective consumer with emigration and the hypothetical case of no emigration (%)

Period	Cumulative demographic dividend (actual)	Cumulative demographic dividend (No emigration)	Contribution to GDP per effective consumer (actual)	Contribution to GDP per effective consumer (No emigration)
1991-2013	11.741	16.144	33.826	101.967
2014-2033	9.725	11.399	24.836	44.17
2034-2050	1.337	2.943	2.861	7.98

Source: Author´s calculations based on Córdova et al (2014), DIGESTYC (2010), Ruggles et al (2010), ECLAC (2008), IMF (2014) and Mejía et al (2010).

5. Results

- In the period 1970-2033 the average annual contribution to the growth of output per effective consumer would be 0.561% instead of 0.425% for the same period.

- The cumulative contribution of the demographic dividend to growth could have been 35.331% instead of 27.21%.

6. Conclusions

- The demographic moment that El Salvador is currently facing is favorable to economic growth and development.
- Since 1970 the dependency ratio has declined steadily as a result of a greater proportion of population in potentially productive ages.
- It is estimated that this rate will begin to grow from 2033, so the demographic window of opportunity will begin to close
- This phenomenon has as a consequence that the country enjoys a demographic dividend. Estimates presented in this paper suggest that the demographic dividend will be positive until 2047

6. Conclusions

- As shown, the context to exploit the demographic dividend was not the ideal to take advantage of it
- High degree of informality and underemployment in the labor maket; low increases in productivity and low economic growth; low investment in human capital (Education and health)
- Emigration of Salvadorans to US.
- As shown, the average profile of the Salvadoran emigrant is a person under 35 years old and with greater average schooling than the country´s average
- That is, Salvadoran emigrants are people with an average productivity and in productive ages
- The migration of Salvadorans in productive ages to the United States, ceteris paribus, has undermined the possibilities of increasing the benefits of the demographic dividend.

7. Recommendations

- The adoption of macroeconomic policies that encourage productive investment, increase employment opportunities and promote a stable social and economic environment, conducive to the achievement of sustainable development (ECLAC, 2008: 37).

- Make substantial investments in human capital, especially in young people; also it will be required to respond, in particular, to the labor supply of an active and growing population and simultaneously, diminish the insecurity, precariousness and the typically informality in labor markets (ECLAC, 2008: 37).

- Employment policies will be appropriate as long as possible that "(...) All persons who are in working ages (PET) can be integrated into the labor market with a formal employment that guarantees them a salary and benefits relating to health, social security and pensions" (Rincón, 2010).