

SOCIAL WELFARE AND STRUCTURAL REFORMS IN CUBA, 2006–2017

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In 1989, before the collapse of the USSR and the socialist countries, Cuban social welfare indicators exceeded those in several of those countries and led most of Latin America: universal and free education and health care, low open or visible unemployment, relatively equal income distribution (although less than in 1980), 17% higher than the median real wage in the state sector in 1980, and distribution of rationed food at subsidized prices (but lower quantities than in 1980); only in housing did Cuba lag well behind. This was possible by the government commitment and the strong economic aid of the Soviet Union: US\$65 billion over the 30-year period 1960–1990. Out of the total aid, 60.5% was not repayable (donations, price subsidies, automatic credits to cover annual trade deficits) and only 39.5% were loans, of which Cuba paid only 1.9% (Mesa-Lago, 2003). I have periodically evaluated Cuba's evolution of social welfare in books and academic articles.²

Previously, I have sustained that Raúl Castro's structural economic reforms are the most important under the revolution and have moved the economy further toward the market than any previous changes. But the reforms are very slow, have not generated tangible economic results, and have faced stagnation or rollbacks since 2015. Furthermore, said reforms have generated adverse social reforms, aggravated by rapid population aging, economic decline in 2016

(mostly due to the crisis in Venezuela), and the damage inflicted by hurricane Irma in 2017.

This article analyzes the social situation in 2006–2017. It starts with an examination of the aging process; then analyzes several aspects of social welfare: (1) employment and unemployment; (2) wages; (3) income distribution; (4) taxes and social expenditures; (5) social security pensions; (6) health care; (7) education; (8) housing; and (9) poverty and social assistance; it ends with a summary of findings.

The article is based on a review of a comprehensive collection of Cuban official statistics, legislation, regional economic reports, academic essays by Cuban and foreign scholars, articles in the official local newspapers, as well as in semiofficial and independent blogs in the island through early October 2017.

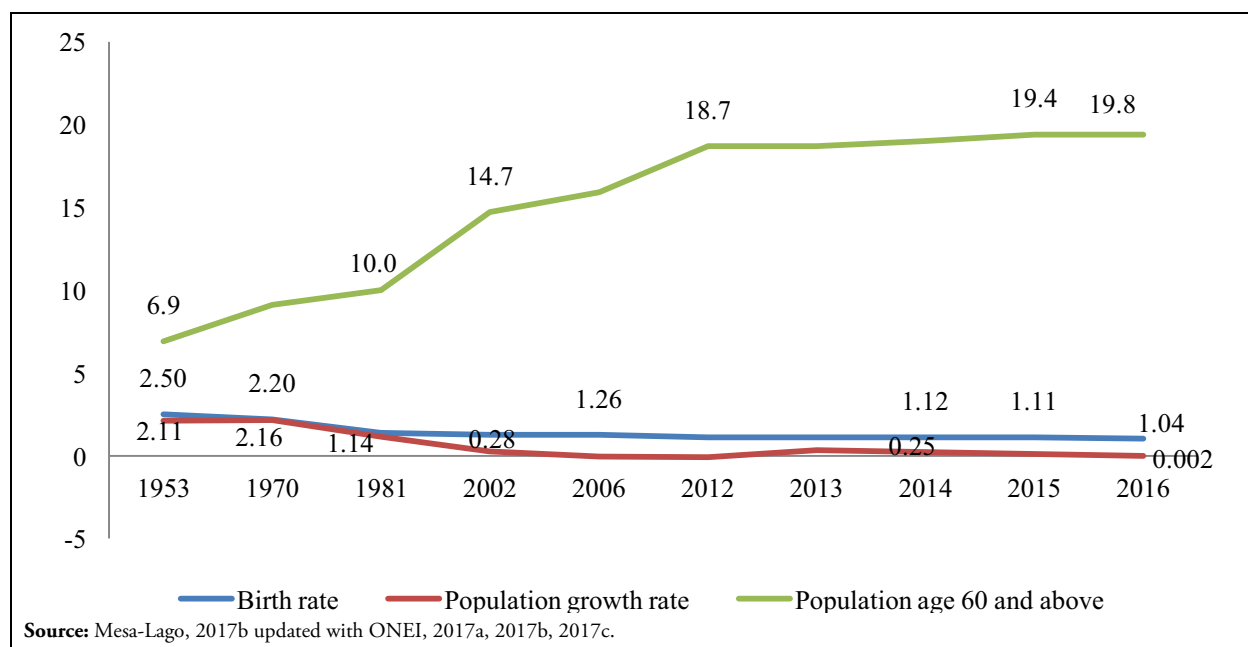
POPULATION AGING

In 2014 it was projected that by 2025, Cuba would match Uruguay as the oldest country in Latin America, but that already has occurred. Figure 1 shows the demographic changes that took place in 1953–2016.

The population growth rate fell 99% (from 2.1% in 1953 to 0.002% in 2016) for two reasons: Cuba has the lowest birthrate in the hemisphere (declining from 2.5 percent to 1.04 percent) and a very high and rising net emigration rate (a recent change in statistical methodology disguises this). The gross repro-

1. I am only responsible for this work but gratefully acknowledge a detailed revision and suggestions from Jorge Pérez-López.

2. Most recent works are Mesa-Lago, 2013, 2014, 2017b (the latter is the base for this English version, updated with new statistics and publications). See also Mesa-Lago and Pérez-López, 2013, chapter 4.

Figure 1. Demographic Trends in Cuba, 1953-2016

duction rate (daughters per woman in reproductive age) was 0.83% in 2015, below the rate of 2.1 children per woman required for replacement, hence the absolute population has declined over six years since 2006 (ONEI, 2017b; Aja, 2016). Contributing to this phenomenon are the extensive knowledge of the population about the reproductive system, the high participation of women in the labor force, the extensive use of contraceptives, the free availability of abortion (practiced by between 48% and 66% of women in fertile age), and the difficult life conditions (Diaz-Briquets, 2014).

Due to population aging, the proportion of the young cohort (0–14 years) decreased from 36.9% in 1970 to 16.3% in 2016 and is projected to be 15.5% by 2030; the old age cohort (60 years and over) has grown: 9.1% in 1970, 19.8% in 2016 and 30% by 2030. The productive-age cohort (15–59 years), crucial because it supports the other two cohorts, already begun to decrease: 64.8% in 2002, 63.9% in 2016 and 54.4% by 2030. Thus, the “dependency ratio”

(sum of the young and old cohorts, divided by the productive age cohort) has increased from 53% by 1990 to 56% in 2016 and is expected to reach 84% by 2030, a heavy and growing burden (ONEI, 2017a, 2017c).³

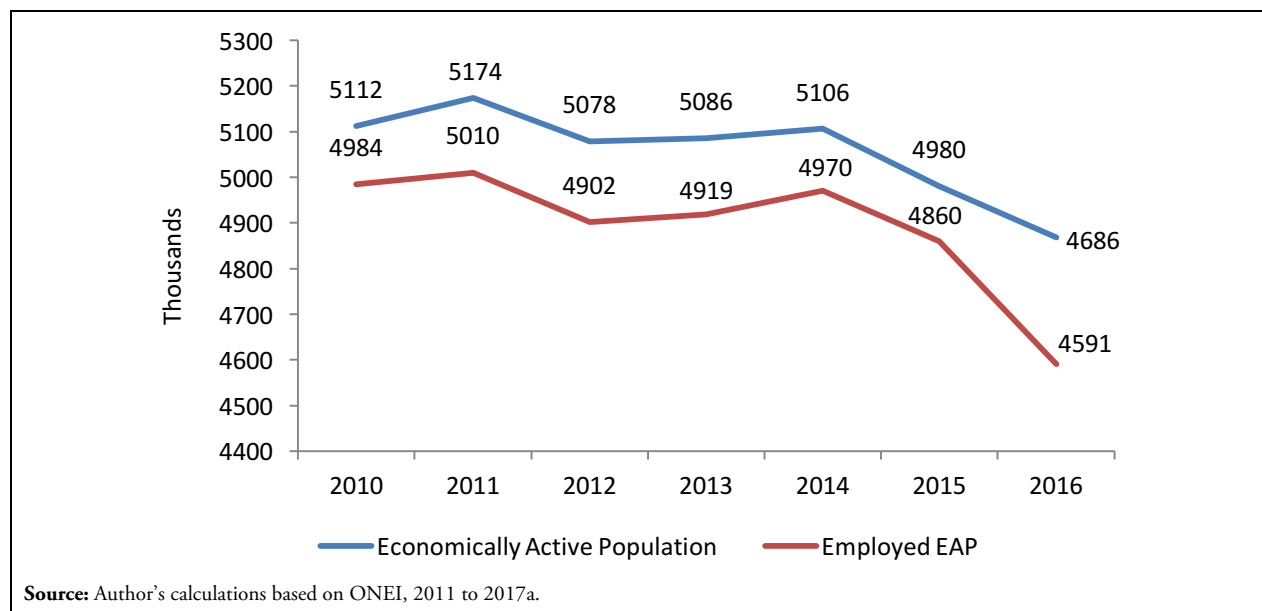
SOCIAL WELFARE ASPECTS

Employment and Unemployment

Population aging has led to a decrease in the economically active population (EAP): 488,000 persons and a decline of 9.4% in 2011–2016, while the employed PEA lost 419,000 jobs, a decline of 8.4% in that period. Both trends are likely to continue (Figure 2). In addition, in 2014–2016 the state sector lost 300,400 highly-skilled workers that emigrated or moved to the private sector (Rodríguez, 2017b).

Reduction of the EAP, particularly of young workers, will be a serious problem in the medium and, especially, in the long run, as there will be a labor shortage. The high emigration, of which 76.7% is in the productive cohort, aggravates this problem, especially in qualified activities (Aja, 2016). The ending by

3. New legislation was enacted in early 2017 to stimulate fertility: increase in the value of maternity leave and permission to allow its payment together with the salary for one year; reduction in the income tax of cuentapropistas with children, reduction in nursery fees for mothers with more than one child, and authorization for the payment of benefits to parents and grandparents who take care of children (García, 2017).

Figure 2. Evolution of EAP and Employed EAP, 2010-2016 (thousands)

President Barack Obama, at the close of his term, of the “dry foot, wet foot” policy has reduced emigration and President Donald Trump has maintained the policy change.

Elsewhere I have analyzed the evolution of open (visible) unemployment as well as underemployment or underutilization of labor (hidden unemployment) in Cuba between 1957 and 2010 (Mesa-Lago, 2017a). In 2010–2011, the government released data on unnecessary or redundant employment in the state sector (“inflated payrolls”) and announced that such surplus workers would be retrenched: 500,000 in 2010, one million in 2011 and a total of 1.8 million by 2015. Those retrenched were to find jobs in the expanding non-state sector or receive partial-temporary unemployment compensation. By the end of 2014 only 418,000 redundant state employees had been dismissed, and the termination of the dismissals was officially announced in 2016. Based on the 2015 goal, still 1.38 million unneeded state employees remain.⁴ The reason for the dismissals not to occur is that the non-state sector did not grow enough to cre-

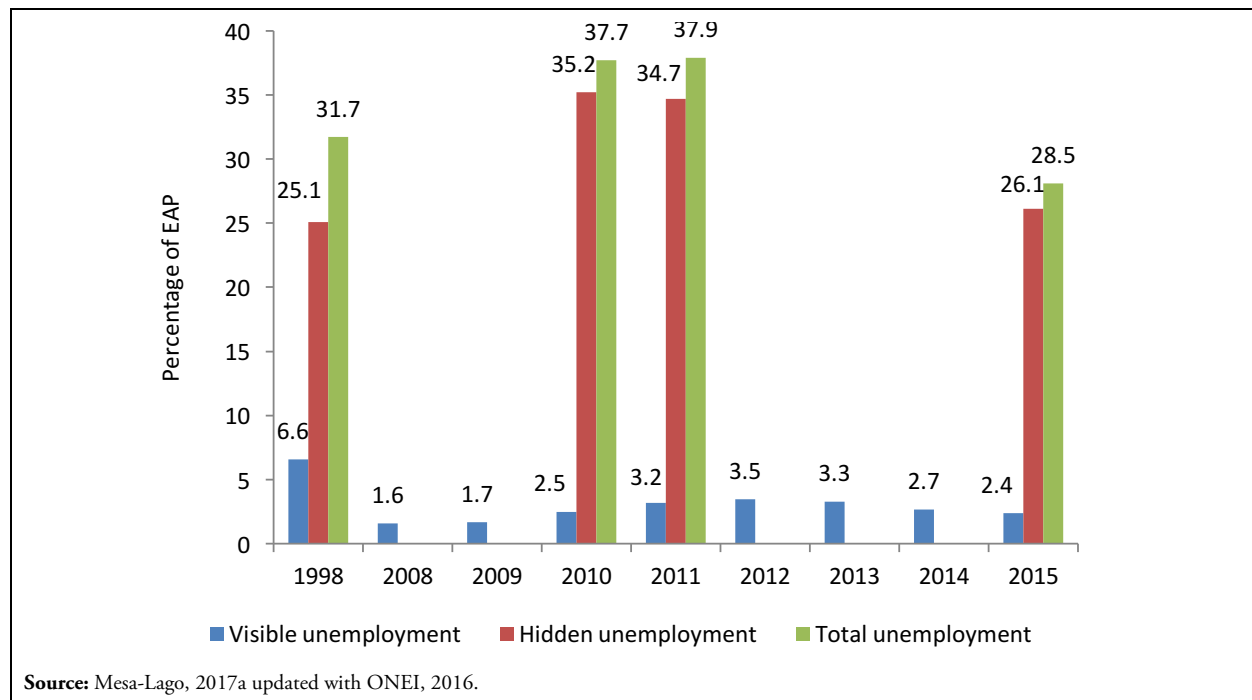
ate employment opportunities for the total number of dismissed workers.⁵ Figure 3 shows official figures on visible unemployment between 1998 and 2010–2015, my gross estimates of hidden unemployment, and the total combined visible and hidden unemployment.

Figures for 1998 come from ECLAC, which later discontinued their publication. Visible unemployment in 2008 was 1.6% of the EAP, probably the lowest in the world, but there were no estimates of hidden unemployment until they were given indirectly in 2010–2011. I estimated hidden unemployment at 35.2% in 2010, higher than in 1998; in 2011, it decreased to 34.7% and to 26.1% in 2015. Adding visible and hidden unemployment, the total in 2015 was 28.5%. When the layoffs started in 2010, open unemployment increased to 2.5% of the EAP and to 3.5% in 2012 but, after the end of the dismissals, it consistently declined to 2% in 2016 (ONEI, 2017d). However, 26% of the EAP still remained as hidden unemployment, an indicator of low productivity and high fiscal costs.

4. The former President of the state committee on labor and wages estimated in 2017 that, at least, one million state workers must be dismissed (Benavides, 2017).

5. The share of the non-state sector in the labor force grew from 16% in 2009 to 30% in 2016, but to absorb all the redundant state employment it had to increase by 38% (ONEI, 2017a; Mesa-Lago et al, 2018).

Figure 3. Total, Visible and Hidden Unemployment in Cuba, 1998 and 2008-2015 (% of EAP)



Wages

In previous publications, since 2003, I have calculated the real average monthly wage (adjusted for inflation) in the state sector. Figure 4 summarizes and updates such evolution for 1989–2016.

Wages in the state sector are set centrally. The law does not stipulate their adjustment to the consumer price index and grants wide discretion to the government to do so. In 1993, at the trough of the crisis of the 1990s (“The Special Period”), the real median wage was a tenth of the 1989 level; thereafter a gradual recovery ensued and, by 2016, the real median wage had risen to 39.3% of the pre-crisis level hence purchasing power that year was 60.7% lower than in 1989.⁶ Said wage, however, is underestimated as it excludes payments in convertible pesos (CUC) and

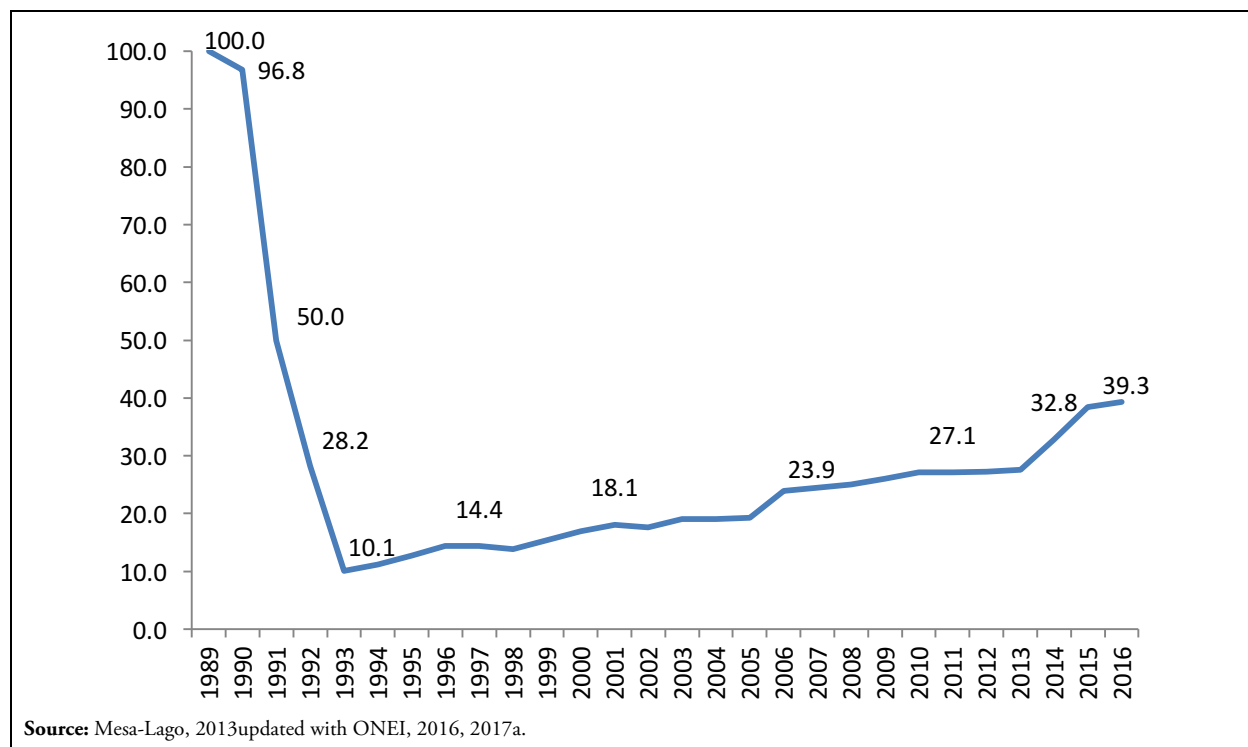
other extra disbursements (Herrera, 2015). However, inflation is also underestimated because it is based only on goods and services in national pesos (CUP), excluding outlays in CUC (Vidal, 2015). The necessary data are not available to do a more precise calculation to determine what the true real wage is.⁷

In 2016 the fiscal deficit was 7.1% of GDP; it is planned to rise to 12% in 2017 (Ley del Presupuesto, 2017), the highest since 1993 and with a cumulative increase of 20% in two years. An expansionist monetary policy to address the ongoing crisis would fuel inflation. If in 2017 the nominal wage is not increased in tandem with inflation (to 829 CUP), there will be a decline in wages in real terms.⁸ In the first half of 2007 the nominal median state wage fell

6. ECLAC (2016, Table A-21) begins the real wages series in 2007 with a jump of 15% in 2015 and 49.3% between 2007 and 2015, reportedly the largest in Latin America, but it would have been one of the smallest if 1989 had been used as the base year.

7. A comparison of the monthly disposable wage after taxes among 176 countries, ranked Cuba in the last place, but it excluded health care, education and price subsidies (NationMaster, 2015).

8. At the end of 2016, Raúl announced that unification of the two currencies in circulation would start in 2017, something that had not materialized by the beginning of October 2017, probably because inflation is a serious obstacle and the unification by itself would generate even more inflation.

Figure 4. Evolution of Median Real Salary in State Sector, 1989 and 2016 (1989=100)

1.2% (Rodríguez, 2017b), before hurricane Irma and Trump's measures against Cuba.

The median state monthly wage was 740 CUP in 2016, equivalent to US\$30, insufficient to meet basic needs (excluding health and education that are free for all Cubans), something that Raúl has stated repeatedly, as well as other Cuban authorities.⁹ Cuba has never release the official cost of the basket of basic goods. Based on a household basic-goods basket of 1,995 CUP per month derived from a household sample in the town of Santa Fé, Monreal (2017b) estimates that the monthly minimum wage of 225 CUP covers only 11% of said basket. The median state wage of 740 CUP therefore would cover 37% of the cost of the basket. Marino Murillo reported in 2015, that 75% of the income of the population is allocated to the purchase of food (*Juventud Rebelde*, 16 mayo 2015).

Table 1 lists the prices of food, alcoholic beverages, soft drinks and manufactures sold at TRDs and agricultural markets at the end of 2016. The median state salary is totally spent in buying various essential items; buying a pound of coffee and two rolls of toilet paper consumes the equivalent of the minimum wage. This without counting the price of clothing and shoes, and tariffs for transportation, electricity and water. Monreal (2017a) has proposed that the minimum wage should be raised to 2,000 CUP (equal to the basic basket cost), the median state wage to 2,800 CUP and the average pension to 1,000 CUP. Pérez (2017) has estimated that such increases would result in a wage bill tantamount to 100% to 150% percent of GDP.

Payment to workers based on their performance (results) was established in 2014; if the worker does not meet the planned target, payment is reduced to the minimum wage (Resolución, 2014). Interviews with

9. Ulises Guilarte de Nacimiento, secretary general of the workers confederation, recently stated that wages are insufficient to satisfy workers' needs (*Granma*, July 31, 2017). While recognizing this, *Granma* (June 29, 2017) tried to prove that there has been an increase in wages but relying in nominal rather than real data.

Table 1. Prices of Food, Beverages and Other Consumer Goods, End of 2016

State shops (TRD)	Prices CUP	Agricultural markets	Prices (CUP) ^a
Milk, fat free (liter)	50.00	Beef	28.00
Evaporated milk (can)	28.50	Meat scraps	25.00
Vegetable oil (liter)	60.00	Smoked ham	45.00
Tuna in oil (can)	81.25	Black beans	10.00
Potato chips (small pack)	87.50	Red beans	16.00
Carrots, sliced (jar)	112.50	Rice	4.00
Tomato sauce (can)	72.50	Okra	5.00
Mayonnaise (jar)	71.25	Tomatoes	4.50
Spaghetti (package)	21.25	Scallions, bunch	10.00
Cola soda (can)	15.00	Peppers	12.00
Coffee (pound)	165.00	Beans	5.00
Cocoa powder (can)	112.50	Onions	4.50
Soda crackers (pack)	37.50	Plantains (unit)	2.50
Toilet paper (one roll)	30.00	Sweet potatoes	2.00
Detergent (pack)	23.25	Eggplant	2.00
Red wine, low quality (bottle)	163.75	Cilantro (bunch)	2.50
Rum Havana Club, 3 years (bottle)	200.00	Tamarind pulp	20.00
Rum Havana Club, 7 years (bottle)	350.00	Ham/cheese sandwich (unit)	10.00
Johnny Walker Gold (bottle)	3,508.00	Plastic bag (unit)	10.00

Source: Direct observation, Havana City, December 28-29, 2016.

a. Price per pound except where specified.

20 officials from four ministries and the workers confederation (CTC) revealed multiple difficulties in the implementation of such measure: (a) lack of inputs, increase in prices of raw materials, technological obsolescence and other unforeseen events cause interruptions and affect productivity; these factors are not the responsibility of workers, but they penalize them; (b) production targets are based on the previous year's plan and do not include subsequent changes; (c) there are contradictions between such indicators and the autonomy of enterprises to design their payment systems, as well as ignorance of the legal rule; (d) to finance salary increases, sometimes essential services such as maintenance are sacrificed, which shortens the useful life of the equipment and affects productivity; (e) there are efficient companies that lack reserves and cannot afford to pay increases, while others that are inefficient inherited reserves and may be in a position do so; and (f) there is little difference between groups in the salary scale (egalitarianism), hence workers lack motivation to strive because the difference may be only 5 or 10 CUP. The consensus of interviewees was that: "the creation of wealth must be accompanied by the appropriate remuneration. A gap between productivity and wages may discourage workers, and affect GDP growth..." (Carro and Reyes, 2015). Vidal (2015) believes that

there is a "vicious circle of low productivity and low wages. As salaries are low, workers feel poorly motivated; as a result, productivity doesn't grow enough for the [government] to authorize increases."

Income Distribution

Income inequality has grown in Cuba mostly due to the decline in real wages in the state sector, and the increase in private-sector income. The government has never published the Gini coefficient of inequality or the income of various population groups; but some estimates and documentation support the assertion made (Espina, 2015; Mesa-Lago, 2015). Against an eroded median state wage, income in the private sector—particularly among self-employed who rent houses and rooms to tourists in CUC as well as owners of paladares—grew noticeably, especially in 2016–2017 with the large flow of tourists. In 2015–2017, using as a base the median state wage (1.0), the average earnings of self-employed with relatively high-income was 5.3 times greater than the base, the owner of a lavish paladar 285 times higher and of a renter of a big mansion 424 times more. Conversely, compared to the average median state wage, the average social assistant benefit was 0.2, the minimum wage 0.3, the median pension 0.4 and the average remittance 1.3 (Table 2). A well-known official jour-

Table 2. Examples of Extreme Inequalities in Annual Income, 2016

Type of Annual Income by Sector	CUP	CUC	Coefficient ^a
State sector			
1. Average social welfare benefit	1,764	70	0.2
2. Minimum wage	2,700	108	0.3
3. Median pension	3,323	133	0.4
4. Median wage	8,880	355	1.0
Private sector			
5. Average remittances per capita		457	1.3
6. Self-employed (relatively high income) ^b	47,476	1,899	5.3
7. Luxury paladar		94,000	284.8
8. Large mansion rented to tourists		140,000	424.2

Source: Author's calculations: 1, 2, 3 and 4 from ONEI, 2017a; 5 based on the estimate of US\$3,445 million in cash sent in 2016 (Morales, 2017) divided by 65 percent of the total population that receives remittances; 6 from Monreal (2017a) who estimates a ratio of 5.76 but based on the median state wage of 2015; 7 and 8 are author's estimates based on direct observation of house renters and paladar owners in Havana City, December 27, 2016 to January 2, 2017.

a. Based on median wage=1.0.

b. Average income of 178,492 self-employed that paid annual income tax in 2016.

nalist called “millionaires” the owner of seven antique cars for tourist rental, and the manager of a pizza distribution chain with a dozen motorcycles (Terrero, 2017).

Monreal (2017a) “visualizes,” rather than validating with hard statistics that are unavailable, the income of eight groups: 67% has a median income lower than the state median wage (pensioners, state employees with wages below 500 CUP, administrative employees and defense personnel, and education personnel), whereas 33% earn above the state median wage (health, science and entrepreneurial employees, and self-employed with relatively high income—the latter account only for 3.9% of total employment).¹⁰ He concludes that the major cause of inequality is the extremely low wages paid in the state sector.

Taxes and Social Expenditures

One way to mitigate the “primary” inequality in national income is through progressive taxation combined with social spending focused on free and universal social services, as well as on lower income groups and the poor.¹¹ Despite the reform of 2012, the taxation system has grown more regressive: in

2010, 50.8% of tax revenue came from indirect taxes (on sales and public services) and 49.2% from direct taxes (on profits, income, payroll and others); in 2016, 53.6% of tax revenue came from indirect taxes and 47.4% from direct taxes (Mesa-Lago, 2015 updated with ONEI, 2017a).

Social spending is made up of health care, education, pensions, housing, and social assistance. Figure 5 shows that such expenditure reached its zenith in 2007–2008 when it amounted to 55.4% of the state budget and 36.6% of GDP. By 2015 social expenditures had shrunk to 47.3% and 28.2% respectively, a decline of 8.1 and 8.4 percentage points respectively. The conclusion is that both the tax system and social spending have worked against mitigating income inequality and providing social services to the population.¹²

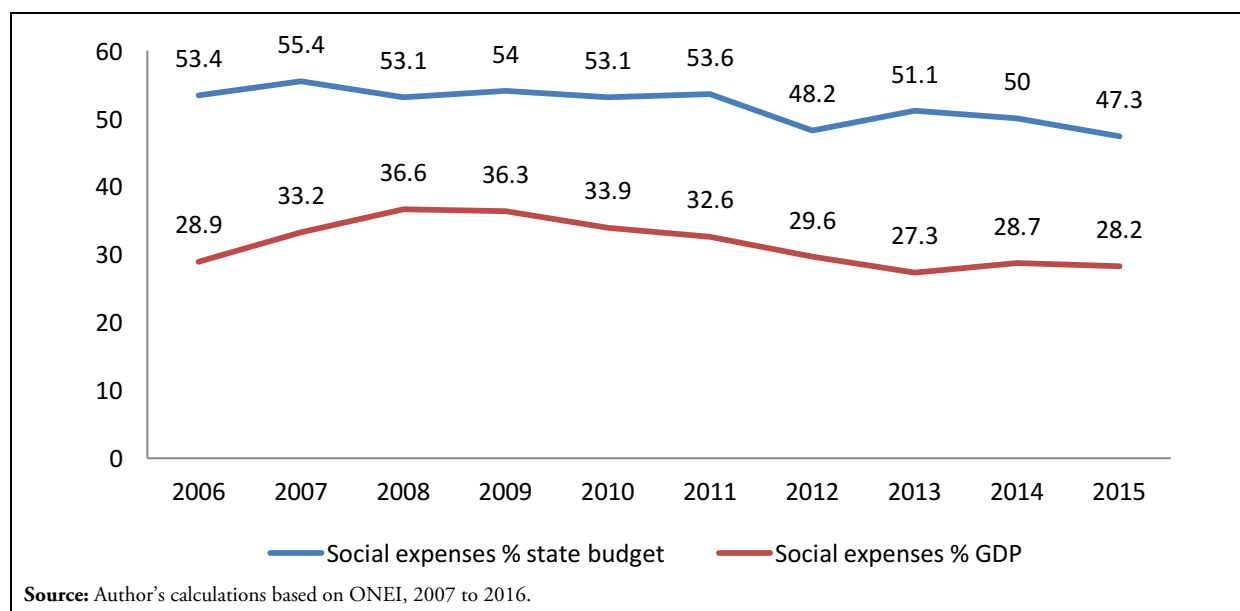
Social Security Pensions

The social security pension system covers virtually the entire EAP, the highest coverage in Latin America. But in 2008, a “parametric” reform had to be implemented, due to several factors: (a) very lax access conditions to benefits, for instance, retirement ages

10. Data are not available on income of cooperative members, owners of small private farms and their wage earners, self-employed workers, and so forth.

11. Monreal (2017a) argues that neither tax nor expenditure policies would reduce inequality but only a significant increase in state wages.

12. Data for 2016 shows that total social expenses further decreased to 47.1% (ONEI, 2017a).

Figure 5. Social Expenses as Percentage of State Budget Expenses and GDP, 2006-2015

of 55 for women and 60 for men were among the lowest in the region, despite Cuba's high life expectancy; (b) rapid population aging; (c) a low contribution of 10% charged to the employer (then basically the state);¹³ and (d) contribution by a very small share of workers. As a result, the cost of pensions as a share of the state budget and GDP was heavy and growing. The system is pay-as-you-go, without a contingency reserve (the government collects the contributions which are routed to the Treasury Department, who pays the pensions), which generated a deficit that reached 40.5% of total pension spending that is borne by the state and increasing. The reform raised retirement ages by five years for both sexes, meaning 60 for women and 65 for men (in a short period of four years); in addition, it raised the employers' contribution from 10% to 12% and stipulated that workers should pay a contribution of 5% when their salaries are increased (Mesa-Lago, 2013).

Figure 6 shows the results of the reform. Keep in mind that the age increase delayed retirement at least

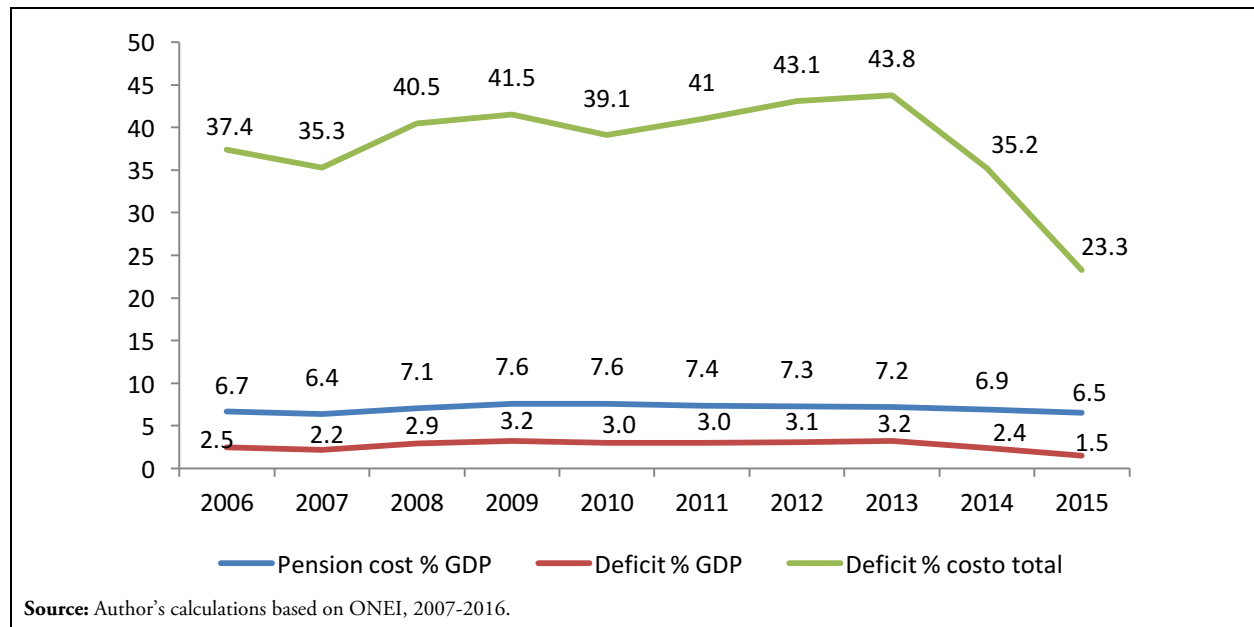
four years and the effects did not begin to be felt until 2014.

The deficit of the pension system (borne by the state) as a percentage of the total cost, continued to climb and peaked at 43.8% in 2013; then it fell to 23.3% in 2015 (lower than in 2006) and will probably decrease for the next three or four years.¹⁴ The state-financed deficit as a percentage of GDP ebbed from 3.2% to 1.5% in the same period. Finally, the proportion of total cost of pensions to GDP declined from 7.6% to 6.5% in 2010–2015. In the short-term, the 2008 reform succeeded in reducing both the cost of pensions and the deficit that had to be covered by the Treasury Department; however, in the medium- and long-term both variables will grow again due to the aging process and the still low retirement ages relative to the long life expectancy at the time of retirement: women 23.64 years and men 17.33 years, high by Latin American standards.¹⁵ In 2015 there were 1.7 million pensioners in Cuba and by 2030 it is projected that the population aged 60

13. In 2008 the contribution of the employer would have had to be 21% to finance the deficit only in that year, and then increased progressively each year.

14. Preliminary data for 2016 shows that the deficit further decreased to 18.8% of total cost (ONEI, 2017a).

15. Countries less developed than Cuba have the same retirement ages, for example Honduras, and higher retirement age for women in Peru.

Figure 6. Results of the 2008 Pension Reform, 2006–2015

years and above will exceed 3.3 million (ONEI, 2016; Aja, 2016). The ratio of active worker to pensioner was 3.6 in 1989 and 2.7 in 2016 despite the reform; although there are no projections for 2030, such ratio will probably be between 1.6 to 1.7, that is, fewer than two active workers for each passive worker (pensioner), unless there is another reform (author's calculations based on ONEI, 2017a).

Another way to reduce spending is to keep real pensions low. The law does not stipulate adjustment of pensions to account for changes in the consumer price index (one of only four countries in Latin America not to adjust for inflation) and, as in the case of wages, the government has broad discretion to do so. Figure 7 shows the evolution of the average pension adjusted for inflation in 1989–2016.

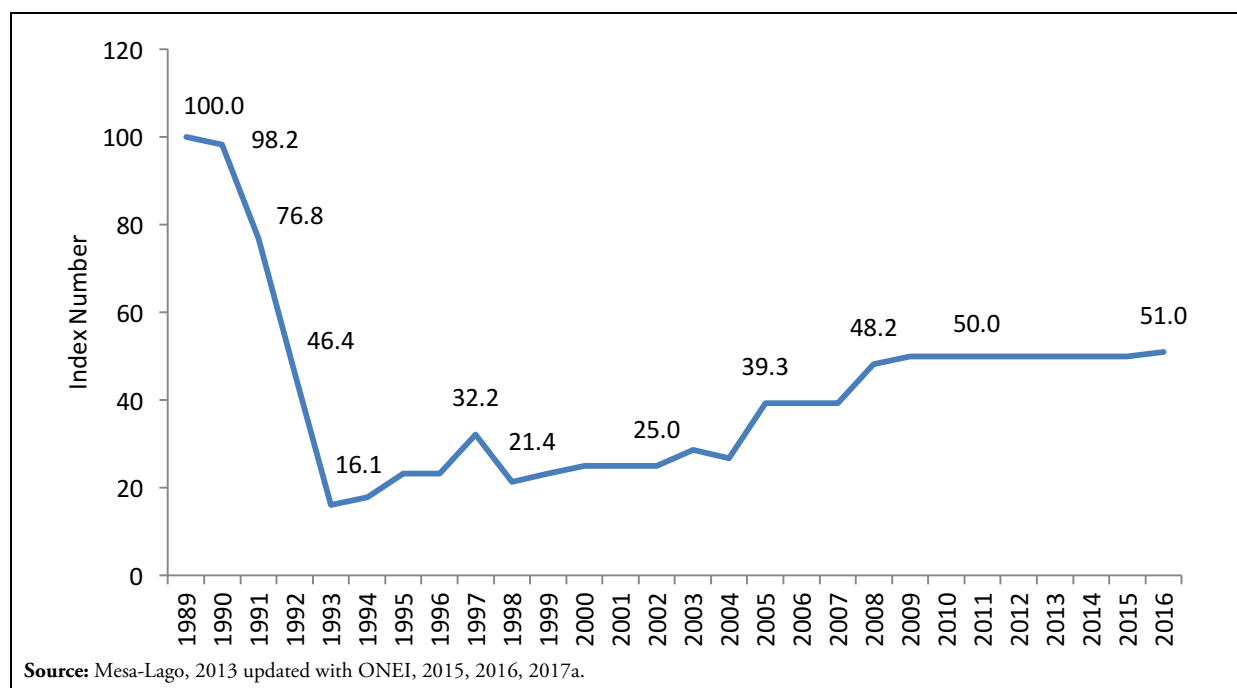
In 1993, the real pension was 16% of the 1989 level; 23 years later it stabilized at half of the pre-crisis level. The monthly nominal pension averaged 270 CUP in 2016 (ONEI, 2017a), equivalent to US\$10.80, covering only 16% of basic food needs. Pensioners are among the poorest groups in the population (Espina, 2008); in order to survive they must receive remittances, help from relatives or work as self-employed.

Health Care

Despite economic difficulties, Cuba maintains its universal and free health care system with some continued achievements, summarized below. Meanwhile, it has diminished access, facilities, personnel and the quality of health services. Aging increases health-care costs, as the older population grows and suffers high-cost terminal diseases. Table 3 summarizes the evolution of health indicators in 2007–2016, and calculates the percentage change between those two years.

Positive developments include a decrease of 19% in infant mortality to 4.3 per 1,000 births in 2016, the second lowest in the hemisphere; the reduction by 35% of the number of inhabitants per dentist in 2007–2016; and the increase of 11 types of vaccinations (although only a small fraction of the population is immunized, e.g., 1% for influenza). Out of 19 communicable diseases reported in the period, 15 were eradicated or had lower rates, while the rate grew for only 4 (ONEI, 2009, 2015, 2017a). Some advances in biotechnology continue.

In contrast, maternal mortality rose 34% in the period; the number of hospitals fell 32% and of polyclinics 8%; all rural hospitals and rural/urban health posts were shut down in 2011, patients are now re-

Figure 7. Evolution of Median Real Pension, 1989–2016 (1989=100)**Table 3. General Health Indicators, 2007–2016**

Indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change ^a
Infant mortality ^b	5.3	4.7	4.8	4.5	4.9	4.6	4.2	4.2	4.3	4.3	-19
Maternal mortality ^c	31.1	46.5	46.9	43.1	40.6	33.4	38.9	35.1	41.6	41.9	34
No. of hospitals	222	217	219	215	161	152	152	152	151	150	-32
Of which rural	21	17	17	16	0	0	0	0	0	0	
Polyclinics	491	499	498	488	452	452	451	451	451	^d	-8
No. rural/urban posts	138	120	127	134	0	0	0	0	0	0	
Hospital beds ^e	4.0	3.9	3.8	3.8	3.7	3.6	3.5	3.6	3.6	3.5	-12

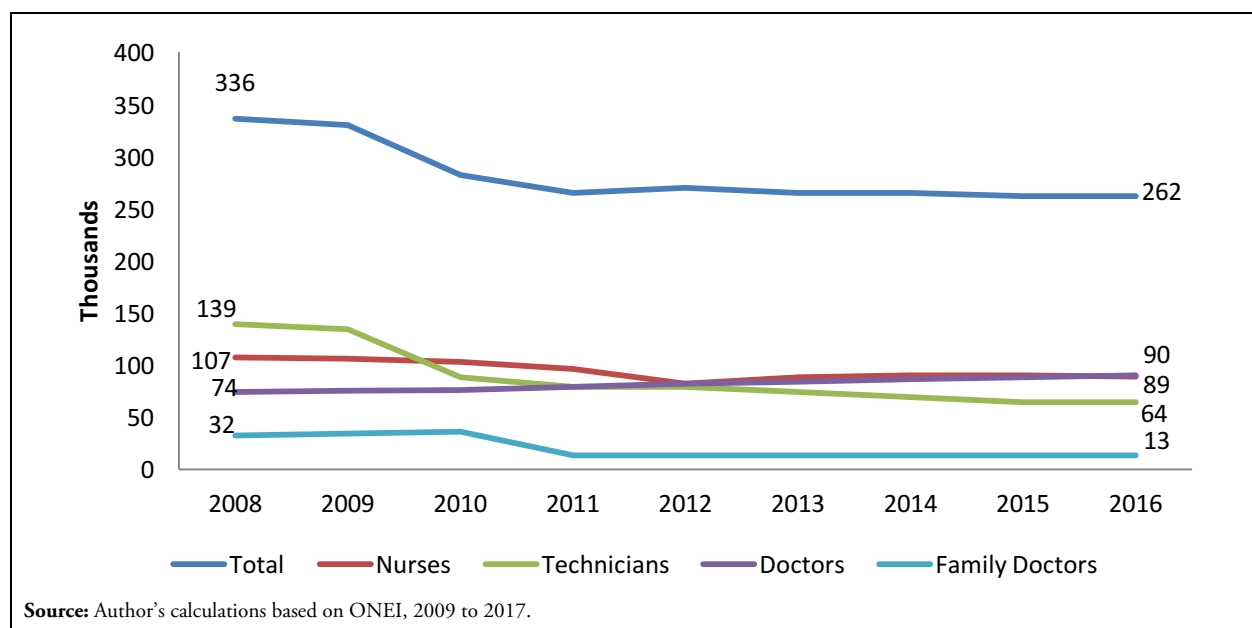
Source: Author's calculations based on ONEI, 2009, 2015, 2016, 2017a.

- Percentage difference between 2016 and 2007.
- Per 1,000 born alive.
- Per 100,000 births.
- Average real beds per 1,000.
- This series was changed in 2016, substantially increasing the figures since 2011.

ferred to regional hospitals, but both time and transport cost increase and emergencies are riskier. Hospital beds in use shrank by 12%. Physical plant and equipment have deteriorated whereas expensive diagnostics and testing have been cut. There is a severe shortage of medicines (7.7% of basic prescriptions; Rodríguez, 2017a) and hospital patients often have to provide supplies for surgery, sheets, pillows and other needs (Fuente, 2017). The government attempts to offset some of these gaps with acupuncture, traditional and herbal medicine.

Figure 8 shows changes in health personnel in 2008–

2016. Total personnel fell by 22%, technicians by 54% and nurses by 17%. In contrast, the number of doctors increased 21% and set a new record in 2016 with 90,161, but about 40,000 work abroad so that, instead of having 125 inhabitants per doctor, in reality there were 224, a level similar to 1993, the worst year of the economic crisis (ONEI, 2017a). This is compounded in the specialties in which there is a high proportion of personnel working abroad and long queues for services in Cuba. Family doctors, a very successful program created in the 1980s, dwindled 59% in the period. Family doctors play a crucial role in Cuba, providing primary and solving most

Figure 8. Evolution of Health Personnel, 2008–2016 (Thousands)

health problems; the cut has bad effects, for instance, acute respiratory diseases grew 31% in 2006–2016. The export of health professionals generates an income of some 8 billion dollars annually (the principal source of foreign currency), but reduces access to medical services in Cuba.

Education

Cuba continues to have a universal and free education system. Population aging and the consequent contraction of the young cohort, reduced enrollment at the primary level and then at the secondary level. Declines were strongest in pre-university education, rural versus urban, and among workers and peasants (Table 4). Comparisons are done between the peak year and 2016/17, except when specified.

Total enrollment shrank 34% while that of teachers only 13%; at the primary level dips were only 19% and 7%, respectively. These figures indicate that elementary schools and staff were kept on payrolls despite not being needed, given the contraction of the young cohort and the teachers' shortage. Reductions did occur in secondary education, because it involves an older school cohort: 17% and 9%, respectively. The decline was much higher at the pre-university

level, 34% and 29%, respectively, due to the collapse in university enrollment (see below).

Cuts in rural school enrollment have been deeper than the overall averages: 27% and 19% at the primary, 68% and 17% at the secondary, and 88% and 34% at the pre-university levels.¹⁶ Similar cuts took place among rural teachers. Worker and peasant education in three programs were trimmed from 28% to 76% (staff from 67% to 88%). Schools for social workers, created during the “Battle of Ideas” launched by Fidel Castro that peaked at 8,356 students, were closed in 2009–2010 (ONEI, 2010). These reductions could have been prompted by financial constraints or inefficiency regardless their social and political value; a case in point are social workers, who were assigned to control sales of gasoline at state stations. But it is odd that also 38% of technical and professional enrollment as well as 78% of the staff were cropped; on the other hand, the training of skilled workers rose three times.

The most notable changes were made in higher education (Table 5), due to the “Battle of Ideas” efforts to attain universal coverage at that level; for that purpose, 3,000 municipal higher education campuses

16. The government shut down secondary and pre-university schools in the countryside.

Table 4. Total Enrollment and Personnel in Educational Sectors, Peak and 2016/17

Total and Sectors	Enrollment (000)		Change %	Personnel (000)		Change %
	Peak ^a	2016/17		Peak ^b	2016/17	
Total	3081	2030	-34	316	275 ^c	-13
Primary	844	685	-19	115	106	-7
Rural	203	152	-27	37	36	0
Secondary	445	380	-17	46	41	-9
In the countryside	88	30	-68	9	4	-56
Pre-university	221	150	-34	24	16	-29
In the countryside	88	16	-88	12	3	-83
Technical & Professional	315	198	-38	32	25	-78
Skilled blue collar	26	79	165			
Workers and peasants	18	13	-28	0.3	0.1	-67
Secondary, workers and farmers	33	8	-76	0.8	0.1	-88
Higher, workers and farmers	275	77	-72	9	4	-67

Source: Author's calculations based on ONEI, 2010, 2016, 2017a.

a. The year that the peak was reached, between 2005/06 and 2008/09.

b. Between 2007/08 and 2010/11.

c. In ONEI 2016, this series was changed raising it by 9% vis-à-vis the 2015 edition, hence the latter figure was used.

Table 5. Changes in Enrollment in Higher Education, 1989–2007 and 2007–2016

Disciplines	Change (%)	Change (%)	Enrollment (000)		Percentage of total	
	1989/2007	2007/2016	2007	2016	2007	2016
Total	208	-71	744	218	100.0	100.0
Humanities and social sciences	3943	-90	206	21	27.7	9.7
Medicine	403	-59	188	76	25.3	34.9
Economics	396	-81	93	18	12.5	8.2
Physical education	381	-83	68	11	9.1	5.2
Technical sciences	43	-26	42	31	5.6	14.1
Agricultural sciences	38	-38	16	10	2.2	4.5
Education	8	-64	125	45	16.8	20.8
Natural sciences and math	-39	0	4	4	0.5	2.0
Art	-38	-50	2	1	0.3	0.6

Source: Author's calculations based on ONEI, 2008, 2017a.

were created in three years. Such policy faced two problems: getting qualified higher education professors to cover a threefold enrollment jump, and obtaining jobs for the graduates. Between the 1989/90 and 2007/08 school years, when the peak was reached, overall enrollment grew 208%, and in the humanities and social sciences it jumped 3,943%; in contrast, enrollment in essential careers for development experienced declines or slower growth: technical sciences dropped 43%, agricultural sciences 38%, and natural sciences and mathematics 39%. Structural reforms reduced total enrollment by 71% between 2007/08 and 2016/17; major cuts were in the hypertrophied humanities and social sciences (90%), physical education (83%), economics (81%) and pedagogy (64%), but there were also reductions in agricultural sciences (36%) and technical sciences

(26%), whereas natural sciences and mathematics were stagnant. A comparison of the percentage distribution of enrollment between 2007/08 and 2016/17, shows positive changes: medicine rose from second to first (export of doctors generates huge profits for the state), technical sciences rose from sixth to second place, while the humanities and social sciences fell from first to fourth place. But some irrationalities persist: agricultural sciences continue in seventh place, while natural and mathematical sciences stagnate in eighth place, both below physical education (sixth place). Spending in scientific development fell from 1% of GDP at the start of the 1990s to 0.4% in 2016; some measures were taken to reverse this trend in 2017 (Rodríguez, 2017a, 2017b).

Due to the sharp decrease in enrollment, the number of graduates dwindled by 73% between 2011/12 and

2016/17, with the biggest plunges in pedagogy (84%), humanities and social sciences (82%), economics (81%) and agricultural sciences (74%); the latter is dramatic in view of the poor agricultural performance of the country. Somewhat encouraging is that graduates in natural sciences and mathematics grew 6%, but those in technical sciences fell 21%. Participation in postgraduate programs decreased 37% between 2009/10 and 2014/15, master's degrees and specialties fell 68%, but doctorates grew 23%. The share of females among graduates is higher than for males, although it fell from 68% in 2009/10 to 55% in 2014/15; it remains at 56% in post-graduate programs. Boarding students in higher education dwindled 23% between 2009/10 and 2016/17. Because of the discussed cuts, educational expenses relative to GDP shrank from 14.1% to 9.5% in 2008–2015 (ONEI, 2009, 2016).

Low wages in education stimulate the transfer of instructors to the non-state sector and to emigrate. Although university graduates are banned from working as self-employed in their profession, they may do so in the 201 approved occupations. This brain drain causes a waste of considerable investment from the Cuban state to train a work force that is the most qualified of the region. Teachers and university professors dissatisfied with their state salaries serve as student tutors (*repasadores*) preparing students for their exams and charging CUC for their services, which introduces an income stratification in education. At the start, the practice of tutor was officially criticized but, eventually, it was included in the list of approved occupations.

Housing

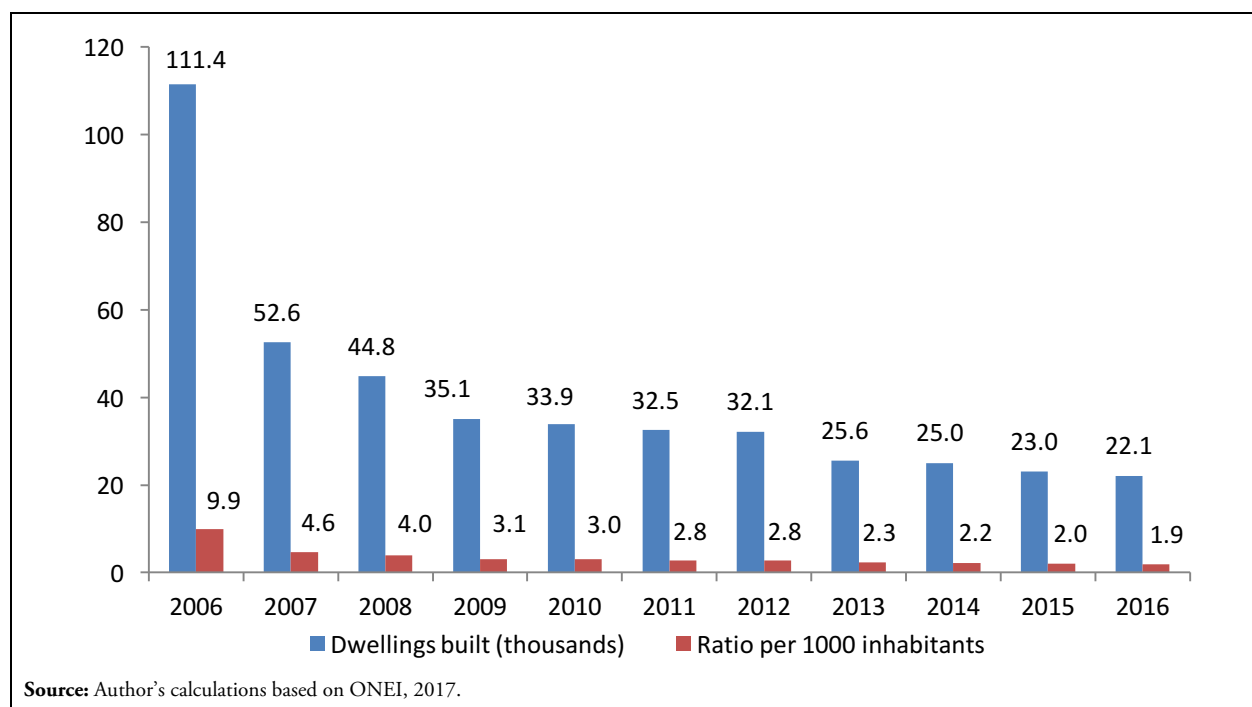
Undoubtedly, a social advance of the revolution was to grant tenants the right to continue to live in expropriated private housing while paying rent to the state; after 20 years of rent payments to the state, the former tenant became owner, hence resulting in 85% of the population owning a home. Having said that, housing has always lagged behind, compared with other social services, due to several reasons: the deterioration of the housing stock caused by lack of home maintenance and of construction materials for many years; the gross inefficiency of the public agency in

charge of repairs; multiple hurricanes that destroyed or damaged hundreds of thousands of homes; dwelling construction done virtually alone by the state for decades—construction by the private sector was banned—insufficient to compensate for the above and the population increase; and the obstacles faced by people to build or repair their homes until a few years ago (Mesa-Lago, 2013). Early in the century, the housing deficit was officially estimated at 600,000, but raised to 883,000 in 2017; this author estimates the deficit at one million units or more. Figure 9 shows that housing construction peaked at 111,400 in 2006 and then declined steadily to 22,100 in 2016; based on units per 1,000 inhabitants, it fell from 9.9 to 1.9 in the period. Between 2011 and 2016, the proportion of dwellings built by the state tumbled from 70% to 42%, while dwellings built by the population increased from 27% to 58% (ONEI, 2009, 2015, 2016).

A key structural reform under Raúl Castro authorized the sale and buying of dwellings, forbidden since 1960, as well as owning a second home in the beach or in the countryside, therefore freeing capital that was frozen for half a century and creating a real estate market. In addition, the reform allowed the free purchase of building materials (although they are very scarce), granted state microcredit for the building or repair of houses, as well as price subsidies to needy owners whose homes were damaged by hurricanes. Several web sites (including www.revolico.com) and the “weekly package” advertise homes for sale or purchase. A 4% tax is imposed on the sale of a dwelling but values are often under-declared to pay less taxes. Finally, mortgages on the main dwelling are banned, there is no housing financing bank, and lean state wages are insufficient to buy a home (Mesa-Lago et al, 2018).

Poverty and Social Assistance

The Cuban government has never published official figures on poverty. A survey in 2000 indicated that 20% of Havana's population was poor and, probably, that figure was higher in the rest of the country. The poorest population was mostly composed of retired elders, women heads of households and single mothers, Afro-Cubans, migrants from the eastern

Figure 9. Dwelling Construction, 2006–2016

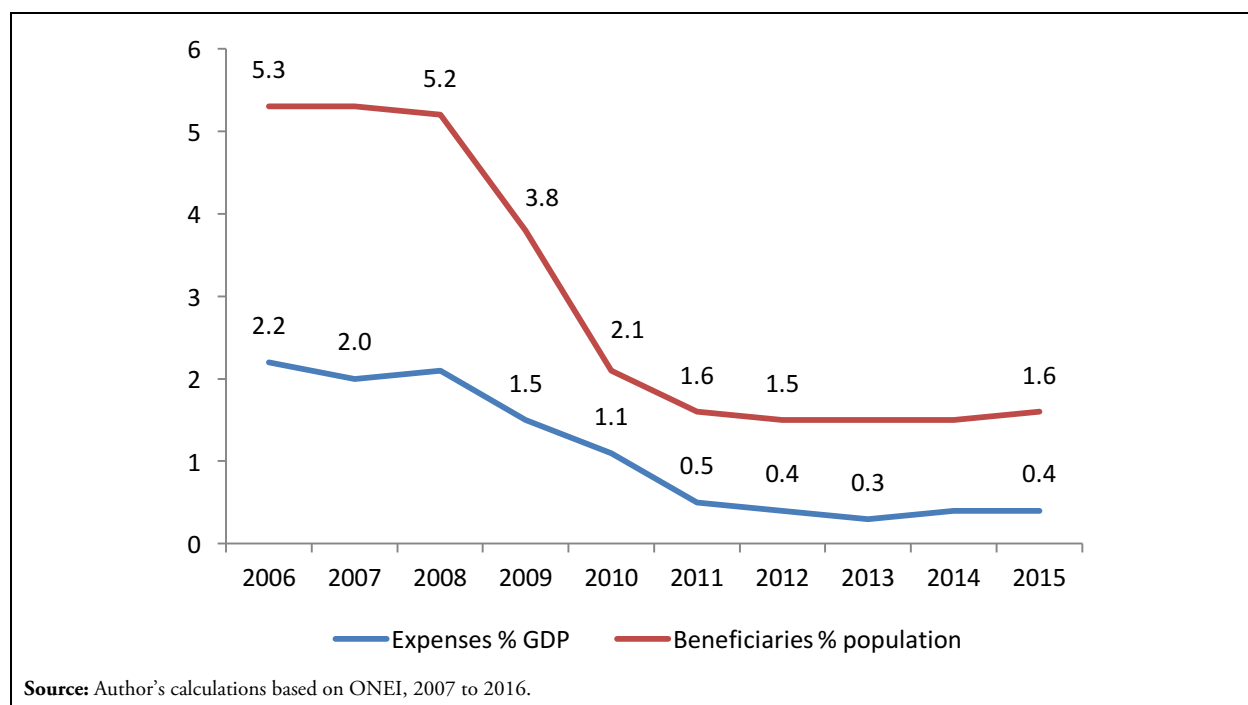
provinces, those with only primary education or living in homes with six or more persons, residents in marginal neighborhoods and those that do not receive remittances (Espina, 2008). Poverty has grown in the last decade for several reasons: the real median state wage has fallen substantially and is insufficient to meet basic needs; the average pension does not satisfy basic food requirements; rationing is being reduced by removing from the rationing booklet goods formerly sold at subsidized prices that are then re-tailed in the market at prices two or three times higher; the price increase in the TRD having around 200% gain (recently had a modest reduction); the increase in the price of public utilities (electricity, water, gas, transport); the termination of subsidized meals at workers cafeterias (they currently receive an insufficient sum to buy lunch); and the deterioration in the access and quality of health services (Mesa-Lago, 2014).

In view of the above, social assistance should have been expanded in order to protect the vulnerable

population against the adverse effects of the structural reforms. And yet, the opposite occurred as Figure 10 shows.

In 2006–2015, budget expenditures assigned to social assistance contracted to one sixth, from 2.2% to 0.4% of GDP, whereas the number of beneficiaries as a proportion of the population sank to one third, from 5.3% to 1.6%.¹⁷ This is partly explained by an approved “guideline” at the sixth Congress of the CCP in 2011 that ended welfare benefits to persons with a family able to help them. Identifying and eliminating assistance to those who do not need it is a universal policy, but in the Cuban context of growing poverty and a generalized level of need, this policy does not seem reasonable. Other cuts in social assistance in 2007–2016 are shown in Table 6. Assistance to the elderly and disabled adults declined by 62%, to mothers with disabled children by 51%, and to those who need care at home by 65%.

17. The proper estimate should be in relation to the poor or vulnerable population, but that data is unavailable. Social assistance figures for 2016 are not available because they have been merged with health care.

Figure 10. Social Assistance Expenses and Beneficiaries, 2006–2015^a

a. Social assistance expenses are now merged with health care and it's impossible to disaggregate them; the ratio of beneficiaries per 1,000 inhabitants stagnated at 0.6.

Table 6. Other Social Assistance Indicators, 2007–2016 (thousands)

Beneficiaries	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Change ^a
Elderly	145.3	145.2	118.7	71.0	63.3	54.1	52.7	52.6	53.6	54.9	-62
Disabled	98.7	109.7	71.1	46.9	42.1	41.8	39.6	40.1	36.7	37.5	-62
Mothers of disabled children	7.8	7.6	7.6	6.3	5.4	4.3	4.2	4.0	3.9	3.8	-51
Home assistance	16.1	17.3	13.1	5.7	4.5	4.3	4.4	4.7	5.1	5.6	-65

Source: Author's calculations based on ONEI, 2008 to 2017a.

a. Percentage change between 2007 and 2016.

FINDINGS

The previous assessment indicates there has been a deterioration of social welfare in Cuba in the last decade. Contributing factors have been: the aging of the population (the oldest in the region), the structural reforms (that have not yet had tangible effects) and the deterioration in the country's economy, especially in the last two years.

The economically active population (total and employed) dwindled by 8% in 2011–2016, and the trend will continue making heavier the load on the productive cohort of the population.

Unemployment (visible plus hidden) is equivalent to 28% of the economically active population; about a million redundant state employees remain on the

state payroll because although the non-state sector has expanded, it has not expanded enough to give them work.

Although the median nominal wage in the state sector has grown, the real wage (inflation-adjusted) in 2016 was 61% below 1989, and does not satisfy the basic needs.

Income inequality has expanded with the structural reforms; average income of self-employed is six times the median state wage and the gap is greater with occupations such as renting dwellings to tourists and restaurants.

Despite the tax reform of 2012, taxes became more regressive by 2016.

The high-level and cost of social spending made it financially unsustainable, and in 2007–2015 was cut by 8 percentage points, both with respect to the state budget and GDP.

The pension reform of 2008 managed, starting in 2013, to reduce short-term cost of pensions and the state-financed pension deficit; however, this trend will reverse in about three or four years due to aging and relatively-low retirement ages.

The nominal median pension has risen, but adjusted for inflation, it decreased by half in 1989–2016 and covers only a fraction of basic food needs.

A universal and free health-care system continues, and so do advances in certain health indicators, but access, facilities, personnel and the quality of health services have diminished, while population aging demands more and costlier services for the elderly.

Equally maintained is the system of universal and free education, but partly due to aging, overall enrollment has fallen by 34% whereas the staff has dropped by 13%, affecting particularly rural and worker/peasant education.

Enrollment in higher education sank 71% in 2007–2016 due to the massive and inefficient expansion in 1989–2007. Humanities, social sciences and physical

education showed the largest jump and subsequent cuts; enrollment in careers essential for development have grown, especially technical sciences, but in absolute terms in 2016/17 they were still below the 2007/08 levels.

About 85% of the population owns its home, the reforms have re-authorized selling/buying of dwellings and 58% of houses are constructed by individuals, but the number of houses constructed plunged 80% in 2006–2016.

Although there are no statistics, poverty has increased in the last decade, making it necessary to expand social welfare, but in 2006–2015 social welfare expenditures contracted to a sixth with respect to GDP and the number of beneficiaries to one-third.

In conclusion, to further reduce social welfare and spending, it is essential to increase production, which requires an acceleration and deepening of the structural reforms. Such action, in turn, would attain higher and sustained economic growth and the needed resources to finance appropriate social policies to confront current challenges. Failure to follow this path would aggravate the deterioration in social welfare.

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