

Carmelo Mesa-Lago, CUBAN SOCIAL SECURITY REFORMS COMPARED WITH LATIN AMERICA, CHINA AND VIETNAM

Cuba's social security system embraces three key programs: 1) social-insurance contributory pensions (old-age, disability, survivors), state managed and mainly financed by state enterprises and the government with small contributions from a minority of workers; 2) a public health care system that provides universal free services entirely financed by the state (there is no national health insurance); and 3) social assistance for vulnerable groups (mainly non-contributory pensions for the elderly in need) lacking social insurance coverage, also fully state-financed. There are neither unemployment insurance (a small benefit is paid to unneeded state employees being laid off) nor family allowances; employment injuries and children protection are not discussed herein due to space limitations. The chapter reviews Cuba's social security evolution, analyzes in detail its three main programs under the ongoing structural reforms of Raúl Castro, compares Cuban reforms with those in Latin America, China and Vietnam, evaluates social security costs and long-run financial sustainability, and provides suggestions for improvement.¹

Cuba's social security impressively progressed in 1959-1989. At the eve of the collapse of the USSR and the socialist camp (which provided most trade, oil, aid and price subsidies), Cuban social indicators led most of Latin America and socialist countries, the result of the government commitment to social security and the sizeable and munificent Soviet aid.² The severe crisis ("The Special Period in Time of Peace") badly affected social security in 1991-1995. The slow, partial recovery beginning in 1996 brought some relief but the huge social gap of the first half of the 1990s was expanded by the Great Recession that prompted a new deterioration. And yet, social security costs kept rising with a weak foundation (an inefficient economic system grounded on central planning and virtual state ownership of all means of production) and despite two crises that cut resources. In the first 47 years of the Revolution, serious economic and social problems accumulated. In 2006, Raúl received power from his brother Fidel due to his grave illness, and Raúl began to implement "structural reforms" in 2007, later endorsed by the VI Communist Party Congress of 2011, which include a reduction in social security expenditures to make them financially sustainable.³

I. CONTRIBUTORY PENSIONS

1. Evolution. In 1961-1963, the revolutionary government unified 54 standing social insurance pension schemes, standardized their entitlement conditions, appropriated their funds and centralized their management.⁴ Coverage rose from 63% of the labor force in 1958—one of the highest in the region—to 91%, the highest. Small private farmers, self-employed and unpaid family workers lacked mandatory coverage but could join voluntarily. In 1989, Cuba's pension

¹ The chapter significantly expands and updates to mid-2015 several author's works on the topic (Mesa-Lago, 2013, 2014a, 2015) and adds systematic comparisons; data without a source herein is from those works. Statistics mainly come from Cuba's National Office of Statistics and Information (ONEI) and focus on the 2006-2015 period under Raúl Castro. The author is only responsible for this chapter, but gratefully acknowledges Scott Morgenstern and Jose Pérez-López many useful comments; Mauricio De Miranda and Tanako Yamaoka interview of a high official in Hanoi; and Thomas Rawski for his guide on Chinese bibliography.

² The USSR granted US\$65 billion to Cuba in 1960-1990, 60.5% in donations and non-repayable price subsidies and 39.5% in loans, of which Cuba paid back only 0.7%.

³ For detailed analysis of Raúl's reforms see: Mesa-Lago, 2014a; Mesa-Lago and Pérez-López, 2013.

⁴ In January 1959, the author was appointed by the revolutionary government to reform the old pension system and unify the diverse schemes; aided by the ILO, the Cuban Institute of Social Insurance was established and the unification process began.

system was among the widest in coverage, most generous and costliest in Latin America: a) retirement ages were very low: 55 for men and 60 for women; b) average retirement spans were respectively 20 and 26 years, the longest in the region; c) state enterprises paid 12% of the salary and workers did not pay contributions; d) pensions were meager but supplemented by a social protection network.⁵ Armed forces and state-security personnel enjoy a separate, more generous pension scheme than the general pension system, basically state-financed;⁶ its cost in 1995 equaled the total deficit of the general pension system that covers most of the labor force.

The severe economic crisis of the 1990s undermined the positive features of the pension system. The number of private-sector workers jumped from 4% to 15% of the labor force in 1989-2001, expanding those not mandatory covered. Voluntarily-affiliated self-employed workers and small private farmers paid 10% of their earnings, twice of what 20% of wage earners contributed and a disincentive for affiliation. The 1994 tax law required workers to pay pension contributions; it was first suspended for socio-political reasons and then implemented gradually; only wage earners under the “Enterprise Improvement System” (*Sistema de Perfeccionamiento Empresarial*) operating in one fifth of state enterprises were withheld 5% of their wages.

In 2008, the monthly average nominal pension was 235 pesos (CUP) tantamount to US\$9.40.⁷ The real value of such pension (adjusted to inflation) declined by 60% in 1989-2007 (see Figure 1) and the purchasing power loss was aggravated by other factors: state subsidized rationed food covered only the first seven to ten days of the month and cost 30 to 40 CUP; the monthly electricity tariff was 10 to 20 CUP, telephone and water from 8 to 10 CUP, and bus fares 12 to 20 CUP; although 85% of the population owned its dwelling, a minority paid an average rent of 33 CUP. All these expenses add up from 60 to 123 CUP and the remaining 112 to 175 CUP of the pension must meet food needs for the 20-23 days not supplied by rationing, bought in free agricultural markets and hard-currency state shops (TRD), at very high prices (Mesa-Lago and Pérez-López, 2013).⁸

The previous social protection network has deteriorated due to the decrease in goods supplied by rationing, reduction in access to and quality of health care services (see II), and increase in public utility tariffs. Therefore it is impossible for those that receive the minimum or average pension to survive if they do not get foreign remittances, family help or additional work income. Many pensioners are street vendors or carryout other activities to survive. One poll in Havana city taken in 2000 showed that the elderly were among the poorest groups: 88% lived in mediocre or bad housing, 78% considered their income insufficient to meet basic living expenses, and they complained about expensive transportation, difficult access to health care and lack of homes for the elderly (Espina, 2008; ONEI, 2008b, 2009b).

Due to generous entitlement conditions, maturity of the pension system, rapid aging of the population and insufficient financing, pension costs rose from 5.8% to 7.1% of GDP in 1989-2008 escalating the fiscal deficit from 38.2% to 40.5% of total pension expenditures. The ratio of

⁵ Subsidized prices for rationed goods, free health care services, owned or low-rented housing, and inexpensive public utilities.

⁶ A man who enters the army at age 17 can retire after 25 years of service, at age 42, and receive a pension equal to 100% of his last year salary during an average retirement period of 37 years.

⁷ Cuba has two currencies: the national peso (CUP) and the convertible peso (CUC), the latter equals 25 CUP; the CUC value is fairly close to the US dollar. Conversions of CUP to US dollar are based on the exchange rate 1US\$=25 CUP.

⁸ One pound of ham takes the entire minimum pension of 200 CUP (US\$8); an energy-saving light bulb is half of such pension.

active workers per pensioner shrank from 3.6 to 3.1 in that period (Table 2).

2. Reforms. The pension reform of 2008, confronted some but not all of the problems afflicting the pension system: 1) increased the retirement age by five years for both sexes (from 55 to 60 for women and from 60 to 65 for men), gradually, in a period of seven years⁹ (those who retire during this period with ages less than 60/65 will receive lower pensions); 2) calculated the pension based on the monthly average of five years of salary and applied to this average a replacement rate of 60% (instead of the previous 50%), and stepped up the number of required work years from 25 to 30; 3) raised the pension amount for each year that retirement is postponed; d) increased nominal pensions: the minimum by 22% and others from 10% to 20% (the higher the pension amount, the lower the increase), and; 4) imposed a wage contribution of 5% to workers, but gradually as their salaries are raised.

The reform measures were proper but insufficient as Cuba has tied with Uruguay as the most aged population in Latin America:¹⁰ its birth rate fell from 2.5% to 1% in 1953-2014 (the fertility rate has been below the replacement rate since 1978 and the lowest in the hemisphere), its net emigration rate rose from -0.06% to -0.1% in 1970-2012, the population growth rate shrank from 2.2% to -0.02% (in absolute terms, the population declined in 2007-2010).¹¹ The cohort age 60 and above jumped from 9% to 19% of the total population in 1970-2014 and is projected to reach 26% by 2025 (one elderly person for every four inhabitants). These changes have led to a rising mortality rate from 5.1% to 8.6% (Table 1). As population ages and the pension scheme matures, the ratio of active workers for one pensioner falls and eventually will force higher contributions/retirement ages, cut in the meager pensions or a combination of such policies.

Table 1. Population Aging in Cuba, 1953-2025 (per 100 inhabitants)

Years	Births ^a	Net Emigration	Pop. Growth	Age <60 ^b	Mortality
1953	2.50		2.11	6.9	
1970	2.20	-0.06	2.16	9.1	5.1
1981	1.40	-0.15	1.14	10.9	5.9
2002	1.26	-0.13	0.66	14.7	7.2
2012	1.13	-1.10	-0.02	18.7	8.0
2013	1.12	0.00	0.33	18.7	8.2
2014	1.09	0.02	0.25	19.0	8.6
2025 ^c			-0.20	25.9	

Note: Blank spaces: data not available. ^a In 2014 the range went from 0.9% in Havana City to 1.4% in Guantanamo, second poorest province. ^b Percent of total population. ^c Projection based on 2012 census. Sources: Author's elaboration based on ONEI, 2008a, 2015a, 2015b.

Despite the 2008 pension reform, the pension deficit financed by the state continued to climb in 2008-2013 from 40.5% to 43.8% of total expenses and from 2.9% to 3.2% of GDP (Table 2). The gradual increase in age to 60/65 (women/men) will be completed in 2015 and full effects will take longer. Due to the aging process, the productive age segment (15-60) will contract from 64.3% in 2014 to 57.7% in 2025 making it more difficult to finance pensions: the ratio of active

⁹ The author recommended a period from 10 to 20 years for the gradual increase in the retirement age, but Raúl Castro (2008) stated that the pension financing crisis required it to be done in just seven years.

¹⁰ It was projected that this would occur in 2015 but, in 2014 Cuba tied at 13.8% in age 65 and above (Lazo, 2014; ONEI, 2015).

¹¹ Contrary to the steady decline in the birth rate, official data shows 0.33% population growth in 2013 and 0.25% in 2014 resulting from zero net emigration in 2013 and a net positive of 0.02% in 2014; and yet those living the Island by boats and rafts have steadily increased; it seems that ONEI reports only emigrants who depart legally.

workers to pensioners fell from 3.1 to 2.9 in in 2008-2014. The worker contribution of 5% should be gradually imposed in tandem with wage increases but the real wage shrunk by 72% in 1989-2013. Furthermore, even if the entire labor force had paid the 5% contribution in 2013, the total contribution (jointly with 12% from enterprises) would be 17%, vis-à-vis an estimated 21% required to financially balance the system in that year, even more so in the long-run (Table 2).

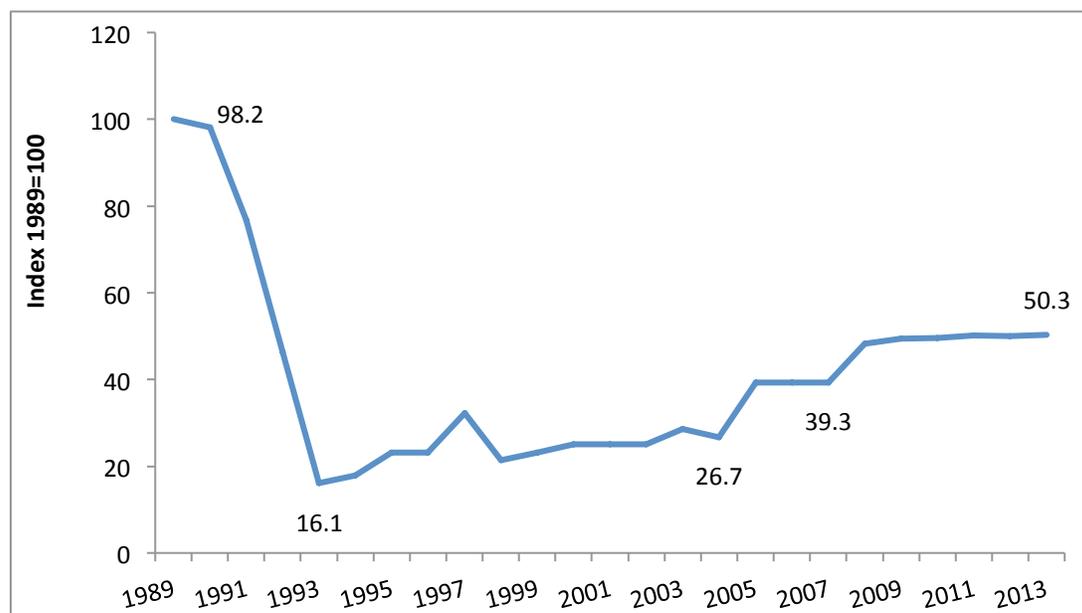
Table 2. Pension Financial Imbalance in Cuba, 1989 and 2006-2013

Indicators	1989	2008	2009	2010	2011	2012	2013
Pension cost (% GDP)	5.8	7.1	7.6	7.6	7.4	7.3	7.2
Pension deficit							
Financed by state (% expenses)	38.2	40.5	41.5	39.1	41.0	43.1	43.8
% of GDP	2.2	2.9	3.2	3.0	3.0	3.1	3.2
Employer contribution							
Current % of payroll	10.0	12.0	12.0	12.0	12.0	12.0	12.0
% needed to eliminate deficit	16.2	20.2	20.5	19.7	20.3	21.0	21.3
No. of active workers per pensioner	3.6	3.1	3.1	3.0	3.0	2.9	2.9

Sources: 1989 from Mesa-Lago and Pérez-López, 2013; rest author's estimates based on ONEI, 2009a to 2014.

The non-state sector (self-employed, coop members and hired wage-earners) rose from 17% to 26% of the labor force in 2008-2013, which could jeopardize coverage by the pension system. And yet, legislation in 2013-2014 made coverage mandatory to part of the self-employed and members of new non-agricultural cooperatives hence approaching full coverage of the labor force. Despite nominal increases, the average pension in 2013 was US\$10, grossly insufficient to satisfy basic needs. Cuba is one of four countries in Latin America whose law does not mandate a yearly adjustment of pensions to the cost of living; annually adjusted to inflation, the pension in 2013 was half of the 1989 level and has been stagnant in the last five years (Figure 1).

Figure 1. Evolution of the Real Pension in Cuba, 1989-2013



Sources: Author's elaboration based on Mesa-Lago, 2014a updated with ONEI, 2014.

3. Comparisons. Latin American countries usually have social insurance for pensions, health

care and employment injury; most of them also have a public health system for the uninsured population; some have unemployment insurance. The Cuban pension system is unique in the region because it is fully managed and mostly financed by the state, lacking even a contingency reserve. The reform of 2008 was parametric and modest rather than structural. Conversely, eleven countries in Latin America fully or partially privatized social insurance pensions in 1981-2011 following three models: 1) fully replacing the pay-as-you-go (PAYG), defined benefit, publicly managed system with a fully funded, defined contribution, privately managed system (Chile, Bolivia, Dominican Rep., El Salvador and Mexico); 2) a mixed system with two pillars PAYG and individual accounts (Argentina, Costa Rica, Panama and Uruguay); and 3) a parallel model that kept the PAYG and added individual accounts, both competing (Colombia and Peru). The structural reforms improved efficiency, the relationship between contribution and pension levels, and capital accumulation. On the other hand, they failed to expand labor-force coverage, social solidarity was absent in the private system, gender inequality worsened, competition did not work in most cases, administrative charges were very high, and transition costs have been much greater and longer than initially projected. Re-reforms in Argentina and Chile in 2008 and in Bolivia in 2010, enlarged the state role in such pensions and improved social elements. Argentina and Bolivia closed the private system and moved all the insured and their funds to the public system, with important social progress but questionable financial sustainability. On the other hand, Chile kept the private system but improved it with better pensions, enhanced social solidarity, gender equity, and competition, while ensuring financial sustainability.¹² In half of the region with public pension systems, most face growing financial/actuarial deficit, inefficiencies, and low benefits (Mesa-Lago, 2012, 2014b, 2016b; Mesa-Lago and Bertranou, 2016).

Statistics on Cuban pension coverage of the labor force have never been released, but available data suggest that it is at similar levels to Argentina 90% and Uruguay 80%, and higher than Chile 65% and Costa Rica 64% (Lazo, 2014; CCSS, 2015; Bertranou et al, 2016; Mesa-Lago and Bertranou, 2016). Cuba also ranks high on social solidarity. Conversely, Cuba's pension average is among the lowest (save for least developed countries like Haiti, Bolivia, Honduras and Nicaragua), there is no benefit indexation as in most of the region, and its financial deficit is among the worst (Mesa-Lago, 2012, 2013). Cuba's legal replacement rate of 60% on the average five-year wages is relatively high but based on very low wages that lead to meager pensions.

China social security has the three key programs plus employment injury and unemployment insurance (absent in Cuba).¹³ Under Mao Zedong, pension and health systems were tied to large urban state enterprise units now largely decentralized, as well as rural communes now disbanded. China's pension reforms were influenced by the structural reforms in Latin America, specifically the mixed-model. The system is highly fragmented, exacerbates inequalities among groups and generates regressive effects: it rewards the privileged rather than the disadvantaged (Leung and Xu, 2015). There are four old-age pension schemes. 1) Mandatory pension for urban workers, the major scheme, has two pillars: PAYG entirely financed by employers' 20% contribution, and funded individual accounts wholly financed by employees' 8% contribution; it covers 62% of total insured. 2) Voluntary rural pension also has two pillars: a basic pension financed by local

¹² In 2014 President Michele Bachelet appointed a Presidential Commission on Pensions to assess the results of her first reform and recommend measures to correct the remaining flaws; the author was a member of such Commission that delivered its report in September 2015.

¹³ The most important social welfare component is education that takes almost half of total expenditures.

and central government and individual accounts; affiliates select among five contribution scales and local governments are urged to match; it covers 27% of total insured.¹⁴ 3) Mandatory pension for civil servants (including armed forces) and public service units, on PAYG provides the most generous entitlement conditions and benefits,¹⁵ entirely financed by public funds, it covers 11% of total insured; since 2008 the central government has tried to align this costly and unequal scheme with the rest, but resistance of powerful affiliates have impeded it. 4) Voluntary urban resident pension, with a similar structure of the rural scheme, geared to those who are either unemployed and don't qualify for the urban employee scheme or informal workers; no data are available for its coverage. In addition, there is a third voluntary supplementary pillar, funded and defined contribution, for private employees but this has not been very successful (Fang, 2014; Leung and Xu, 2015). Estimates of coverage of the total labor force in 2010-2011 are diverse: Fang, excluding voluntary urban residents, gives 39%; adding the excluded scheme the author's estimates 55%, the ILO (2014) calculates 74%, and Leung and Xu (2015) separates urban coverage 70% and rural 4%; all are lower than Cuba's. Those excluded are half of the rural labor force, rural-to-urban migrant workers,¹⁶ the self-employed and other informal workers; the target of 95% coverage in 2020 will be quite difficult to meet. Expanding coverage is difficult because one third of the labor force in six urban areas is informal and much higher nationally (ILO/WIEGO, 2013). Retirement ages are 60 for men and 55 for women (as in Cuba before 2008) plus 15 years of contributions. The basic monthly public pension averaged US\$266 in the mandatory scheme (only \$11.43 in the voluntary schemes, a huge gap), plus the pension from individual accounts (Leung and Xu, 2015), whereas Cuba's average pension was US\$10 (as in Cuba, pensions are not indexed to inflation). The cost of social insurance (not only pensions) was 3% in 2011, 40% of Cuba. Opposite to Cuba, China has notably reduced poverty (Gao, 2013).

Vietnam has the same social security schemes than China. The current social insurance¹⁷ law was enacted in 2006 with two schemes: compulsory for public-sector (including the armed forces and the party) and salaried-private and coop workers (excluding workers with less than a three-month contract); and voluntary for non-salaried, e.g., workers with contracts under three months, the self-employed, and workers without wages (National Assembly, 2006). Contributions to the compulsory scheme in 2014 were 14% employers and 8% workers; voluntary affiliates pay 22%, a heavy burden. A new supplementary pension fund for large enterprises is apparently financed by employers and employees. Compulsory coverage is 20% of the labor force, much less than China's and even more so than Cuba's; voluntary coverage is low: 0.25% of the target group. The informal sector in Vietnam is 44% on the non-agricultural labor force, higher than China and even more than Cuba (ILO/WIEGO, 2013). As in China, Vietnam has attained sizeable reduction in poverty, contrary to Cuba's increasing trend. Ages of retirement are the same as in China. The average replacement rate in 2013 was 45% based on 15 years of contributions; additional years get 2% to men and 3% to women with a maximum of 75%. The monthly pension in the compulsory scheme was US\$123 in 2012, 12-fold the Cuban pension (Huõng et al, 2013). The cost of pensions was 3.1% of GDP in 2010, 43% of Cuba's (ILO, 2014).

II. HEALTH CARE

¹⁴ In Latin America the administration is private in the funded system/pillar; in China it is public, managed by local governments.

¹⁵ Pensions of this scheme average two to three times those of employees in the private sector (Fang, 2014).

¹⁶ A special national scheme was created for this group with a combination of PAYG and individual accounts, enterprises contribute 12% (but 86% evade) and workers from 4% to 8% (Leung and Xu, 2015).

¹⁷ Social insurance provides old-age /survivors pensions (the main component), sickness-maternity and employment- risks.

1. Evolution. Prior to the Revolution, Cuba lacked a national social insurance health-care scheme, as was usual in Latin America. Urban areas relied on a public health system fairly developed and virtually free, joined by a network of health-care cooperatives and mutual-aid societies that charged low premiums, which partly explains why Cuban health indicators were among the best in Latin America. Conversely, rural public health facilities and indicators were notably inferior. In 1961, the state expropriated all health-care cooperatives, mutual-aid societies and private facilities, and prohibited medicine private practice. A national unified public health system with universal and free access was created that significantly reduced the urban-rural gap in facilities, personnel and quality of services.¹⁸ The government built a large number of hospitals especially in the countryside,¹⁹ launched an immunization campaign for contagious diseases, and trained a vast number of physicians and other health-care professionals at free public universities and with scholarships including lodging and food for students without resources. The public system, however, was capital intensive as it emphasized hospitals, equipment and physicians. The innovative family doctor program established in 1984 provided patients with greater local access to primary care but was also quite expensive.²⁰ The new health policy was a success for three decades: in 1959-1989, the ratio of physicians jumped from 9.2 to 33 per 10,000 inhabitants, hospital beds from 4.2 to 5.1 per 1,000 inhabitants, and real expenses per inhabitant by 162%. Infant mortality fell from 33.4 to 11.1 per 1,000 children born alive, maternal mortality ebbed from 125.3 to 29.2 per 100,000 births, and mortality of the cohort aged 65 and above receded from 52.9 to 46.3 per 1,000. Most contagious diseases were eradicated (e.g., diphtheria, measles, paratyphoid, poliomyelitis, whooping cough), but the incidence of chickenpox, venereal diseases (including AIDS) and hepatitis, as well as diarrheic and acute reparatory diseases increased.

The crisis of the first half of the 1990s virtually halted imports of medical supplies, medicine, spare parts and other inputs from the USSR and the socialist camp, inducing severe shortages, and real health expenditures per capita shrunk 75%. Therefore, maternal mortality rose from 29.2 to 65.2 and elderly mortality from 46.3 to 55.7. Conversely, the ratio of physicians climbed from 33 to 52 (the highest in Latin America) and hospital beds from 5.1 to 6 whereas infant mortality shrank from 11.1 to 9.4 (lowest in the region). The latter accomplishments, however, were paired with an irrationally allocation of scarce resources. The costly training of physicians continued even though many doctors abandoned the profession. Hospital beds kept raising, but their occupation average fell from 83.9% to 71.3% (even lower in pediatric and neonatal hospitals), while the already high average days of hospital stay ascended from 9.9 to 10.4. The struggle to reduce the low infant mortality persisted with the government investing scarce resources²¹ desperately required to meet more urgent needs, such as overhauling the severely deteriorated potable water-sewerage infrastructure, and immunization of the population (which had dangerously decreased).²² Eradicated diseases did not reappear, save for tuberculosis, but those

¹⁸ Exempted from the unified system are armed force, state security, top government and communist-party officials, which have a different health-care network. In the 1990s, another separate program was set to serve foreigners paying in hard currency. Both programs enjoy higher quality services than the general health care system available to the population.

¹⁹ In 1959-1989, rural hospitals rose from 1 to 70 and the total number of hospitals from 230 to 264.

²⁰ Every several urban blocks, a dwelling was built with facilities in the ground floor, staffed by a physician and a nurse.

²¹ As infant mortality shrinks, it becomes more difficult and costly to reduce it, requiring sonograms to detect congenital problems, special care of pregnant women, and performance of abortion when the fetus faces serious risks. Cuba has the highest abortion rate in the region.

²² In 1989-1995, the immunized population fell 56% for tuberculosis, 50% for tetanus, 45% for typhoid and 27% for polio.

previously showing a growing trend increased notably. The lack of prophylactics and rise in prostitution boosted venereal diseases, the cut in immunization swelled chickenpox and tuberculosis, contaminated water prompted hepatitis and acute diarrhea; acute respiratory diseases also increased. Food shortages expanded malnutrition from 5% to 13% of the population; the lack of vitamins caused a blindness epidemic, and family doctors lacked vital medicines.

During the recovery, infant mortality continued its decline to 5.3 in 2006 (the lowest in the hemisphere after Canada) but maternal mortality peaked at 51.4 and the ratio of hospital beds fell to 4.1. The ratio of physicians rose from 54.6 to 63.6 in 1996-2006 leading the region and among the highest in the world (UNDP 2007); but one-third of the physicians worked abroad. These factors resulted in a shortage of doctors, a decrease in the people's access to services, and long waiting lists for surgery. Immunization declined, especially in the triple vaccine and tuberculosis. And yet, apart from the eradicated diseases, in 1996-2005, reported rates showed more infectious diseases falling than rising. On the other hand, there were 23,000 foreign students on scholarship for health careers in Cuba, which cost around US\$300 million annually.

2. Reforms. Raúl's structural reforms aim to reduce health-care cost and enhance efficiency. Health expenses were cut by 2 percentage points of GDP in 2006-2013, and the number of hospitals by 37%; all rural hospitals and health posts were closed (Table 1). Since 2011, rural hospitals/posts have been classified as policlinics but the latter number actually fell in that year and then stagnated (ONEI, 2015a). The hospital infrastructure worsened, and relatives of patients must provide them with sheets, cases, pillows, medicine and food. Due to poor asepsis (e.g., insufficient sterile gloves, soap), 55,000 hospital infections were reported in 2014, one-third life threatening (*Cubanet*, Havana, 3-12-2014). The ratio of hospital beds decreased from 4.1 to 3.6, far below 5.1 in 1989 (Table 3). There is a severe scarcity of medicine, most of which are only available at high prices at the TRD.

Health professionals steadily shrank in 2008-2014: 21% overall personnel, 50% technicians and 16% nurses (Figure 2). The number of physicians step up 16% but an increasing number have been sent abroad to earn hard currency for the government: US\$8.2 billion in 2014, tantamount to 40% of all exports (*Granma*, Havana, 3-21-2014; Frank, 2014). Out of a total 83,698 physicians in 2013, about 40,000 worked mainly in Venezuela (25,000) but also Brazil (14,456), Ecuador, Angola and 60 other countries (*Juventud Rebelde*, Havana, 6-9-2013).²³ Subtracting those abroad, the ratio of physicians halved from 74.7 to 35.7, without counting doctors that swung to occupations in the expanding private sector, which pays higher salaries than the state. Family doctors dropped 62% significantly reducing access to primary care.²⁴

The water system is between 50 and 100 years old and, due to leaks, half of the pumped water is lost; 58% in Havana (*Juventud Rebelde*, Havana, 1-24-2013). Sewage pipes leaks into potable water pipes; the latter bursts and trickles in streets creating pools where mosquitoes porting illnesses incubate.²⁵ Garbage is accumulated in the streets due to insufficient collection trucks

²³ Data from Venezuela given by President Nicolás Maduro (www.noticierodigital.com, Caracas, 2-28-2014) and from Brazil by AP, 11-4-2014.

²⁴ After a cut in the number of graduates in schools of medicine, a sharp increase has occurred since 2008/09 (ONEI, 2014).

²⁵ An important advance was the renovation in 2014 of the aqueduct in Santiago de Cuba.

and dumpers to deposit it, as well as bulldozers; 20,000 metric tons of garbage is daily accumulated in Havana but only 40% are collected; rats and insects thrive generating health risks (*Bohemia*, Havana, 8-23-2012; *Cubanet*, Havana, 8-29-2014).

Diseases eradicated did not reappeared in the period, but out of the 14 remaining infectious diseases, seven declined (e.g., hepatitis, gonorrhoea, chicken pox, acute diarrhea) whereas seven others rose (e.g., acute respiratory, scarlet fever, syphilis, bacterial meningoenzephalitis) or were stagnant (ONEI, 2012, 2014, 2015a). Scarcity of vitamins causes optical neuritis. There have been recurrent epidemics of dengue fever and cholera the latter not occurring since the end of the 19th century. In 2013, the Ministry of Public Health identified 51 cases of cholera in various Havana municipalities and referred to previous outbreaks in other regions (MINSAP, 2013). Similar outbreaks were reported in the province of Guantanamo due to contaminated waters, as well as in Manzanillo, Camagüey, Ciego de Avila and Santiago de Cuba (*El Médico*, 7-29/31, 2013; *Venceremos*, Guantánamo, 10-31-2013). The Panamerican Health Organization confirmed that Cuba had exported cases of cholera to three foreign countries and reported 163 domestic cases (PAHO, 2013a, 2013b). The outbreak reappeared in 2014 in Villaclara where 55% of the province had cases, as well as in Camagüey and Artemisa (*Diario de Cuba*, Santa Clara, 7-9-2014). After 15 years without cases of dengue (caused by the mosquito *Aedes aegyti*), an epidemic struck in 1997, transmitted endogenously and including the hemorrhagic brand; outbreaks followed almost annually; the one in 2006 took place in 11 out of the 14 provinces; the latest being in 2013-2014. A Cuban expert, in an article published in the Island principal public-health journal, judged the disease “a grave epidemiological problem in Cuba,” and referred to a dengue “epidemiological silence,” due to lack of official reports or not as frequent as needed, which “neither contributes to the control of suspicious cases and infected people nor to a real perception of the potential danger of the disease and the need to eliminate the transmission agent” (Suárez, 2013). In 2014, the Municipal Director of Hygiene and Epidemiology of Cienfuegos reported 3,500 cases of dengue in the city (*Nuevo Herald*, Miami, 5-11-2014).

Despite the above analysis, infant mortality officially continued its decline from 5.3 in 2006 to 4.2 in 2014, now reportedly the lowest in the western hemisphere (*Granma*, Havana, 1-2-2014; see below), whereas maternal mortality dwindled from 51.5 to 35.1, but still above 29.2 in 1989. Recent data/research offer new light on these figures. A ground-breaking study proves that the infant mortality rate (IMR) reported by Cuba is misleading; after exploring the sharp discrepancy between late fetal and early neonatal deaths, a method for adjusting the IMR reveals that the rate is twice the one reported officially hence rejecting the common view that Cuba’s IMR is comparable to that of developed countries, albeit lower than in the region (Gonzalez, 2015). The latest national survey of fertility found that 21% of women of ages 15-54 have had at least one abortion, and the average was 1.6 abortions per woman (ONEI, 2010b). Dr. Jorge Peláez, gynecologist at the Ministry of Public Health acknowledged that such procedure is common due to insufficient prophylactics; he also noted that some of his patients had as manyh as six abortions (García, 2014). Most maternal deaths occur during child birth or in the subsequent 48 hours due to uterine hemorrhages or postpartum infections. Complications arising from abortions and their after effects increase the mortality rate (Mesa-Lago and Pérez-López, 2013).

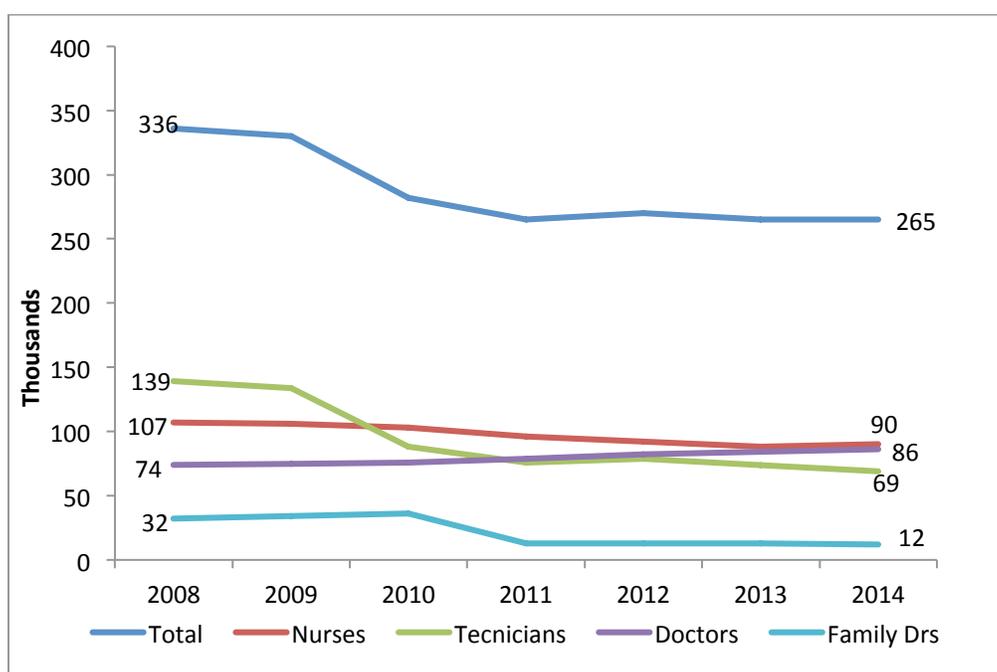
THERE IS A PROBLEM TO MOVE THIS TABLE, SEE IF SOMEBODY CAN SOLVE IT

Table 3. Health Care Indicators in Cuba, 1989 and 2006-2014

Note: Peak year in dark font. ^a Difference between two years. ^b Per 1,000 born alive. ^c Per 100,000 births. ^d Average real beds per 1,000 inhabitants. ^e 2005. ^f Underestimated ratio due to the exclusion of category “others.”
 Source: 1989 from CCE, 1991; rest from ONEI, 2012, 2014, 2015a.

Indicators	1989	2006	2007	2008	2009	2010	2011	2012	2013	2014	Change (%) ^a	
											2014/1989	2014/2006
Infant mortality ^b	11.1	5.3	5.3	4.7	4.8	4.5	4.9	4.6	4.2	4.2	-7	-1
Maternal mortality ^c	29.2	51.4^e	31.1 ^f	46.5	46.9	43.1	40.6	33.4	38.9	35.1	6	-16
No. of hospitals	265	243	222	217	219	215	161	152	152	152	-113	-91
Of which rural	66	38	21	17	17	16	0	0	0	0	-66	-38
No. rural posts	229	138	138	120	127	134	0	0	0	0	-229	-138
Hospital beds ^d	5.1	4.1	3.9	3.9	3.8	3.8	3.7	3.6	3.5	3.6	-1.5	-0.5

Figure 2. Reduction in Health Care Personnel, 2008-2014



Source: Author’s elaboration based on ONEI, 2009a, 2013, 2014, 2015a.

Efficiency reforms include regionalization of health care, concentrating patients in regional hospitals (reducing expenses but increasing travel time for patients); and use of acupuncture and traditional and herbal medicine. In a Council of Ministers held in 2013, Marino Murillo revealed flaws of the Plan for Natural and Traditional Medicine: it was not given priority, it has deficiencies in organization, training, equipment and resources for production and distribution of the raw materials (herbs); prices are high, and the quality of the product is inadequate (*Granma*, Havana, 9-24-2013). Not publicly discussed is the great need to allocate scarce resources more rationally, e.g., the costly effort to reduce infant mortality continues, although Cuba supposedly has the lowest ratio in the continent, but the infrastructure of potable water and sewage is in bad need of repair/reconstruction. Gynecology and pediatric hospitals have a low occupational rate but their number has decreased very little whereas there is a significant need for geriatric hospitals due to the rapid aging of the population (see section I).

3. Comparisons. Latin America's health system is normally fragmented with diverse schemes for various groups in the population: social insurance for the formal labor force, public health care for the uninsured and special regimes for the armed forces and other powerful sectors. Brazil also has a public system but quite patchy and contracting with private providers. Costa Rica is unique with a nationally unified health social insurance covering all the population including the poor (CCSS, 2015); there is no public system. Structural health care reforms that began in the 1980s and expanded thereafter introduced in many countries competing private for-profit corporations (HMOs) that were expected to improve care and reduce costs, but in practice charged high premium and co-payments, excluded pre-existing diseases, and imposed higher fees to fertility-age women and the elderly. In pioneer Chile, services in the public health sector deteriorated and later required sizeable investment; as they improved, the population enrolled in HMO declined from 25% to 16% whereas the public sector expanded; a re-reform in 2004 revamped the system establishing minimum guaranteed services for all (Mesa-Lago, 2012).

China's highly fragmented health system comprises four insurance schemes. 1) Mandatory for urban employees (taking two-thirds of total health expenses) with two tiers: social pooling financed by 1.8% employers contribution and 2% by employees, and individual accounts with 4.8% from employers plus insured contributions; reimbursements paid by the pooling have a ceiling on wages, expenses above the ceiling come from the accounts, co-payments, out of pocket or private medical insurance. 2) Mandatory for public employees, financed by the central and local governments, which is being gradually merged with the first scheme. 3) Voluntary for urban residents who are outside of the formal labor force (including informal workers and some students), funded by participating households and government subsidies.²⁶ 4) Voluntary for rural coops that mostly covers inpatient costs; central and local governments reimburse 30% while the patient has a copayment of 70%, this program covers 95% of the rural population (Leung and Xu, 2015; Dillon, 2016; for health assistance to the poor see III). Although statistics are unavailable, Leung and Xu (2015: 84) assert that China "has attained almost full coverage of the national population," but there are huge differences among all schemes in terms of access, covered treatments, quality of services and financing. China's total health care cost was 1.27% of GDP in 2011 vis-à-vis 8% in Cuba (Gao, 2013).

The Vietnam health system is somewhere between Cuba and China. The system is public and relatively unified with emphasis in primary care; 70% of the population is covered (less than Cuba); out of the 30% uncovered, 87% are near poor and 66% are workers in coops. Inequalities in access exist across groups by income, ethnicity, location (mountain areas) and gender. Almost all districts (communes) have primary health-care posts but only 46% of them meet national standards, many posts are deteriorating, and face a shortage of or poorly qualified medical personnel. High-level hospitals are overcrowded due to underutilization of local-level services. Despite significant improvements (e.g., vaccinations), children malnutrition is still high, as well as some infectious diseases such as tuberculosis whose rates are among the 20 highest in the world (infectious diseases rates are much higher than Cuba's).²⁷ Free insurance cards are granted to civil servants, armed forces and war veterans, but also to the poor or near poor and children less than 6 years. About 78% of all participants receive government subsidies for their insurance cards, 83% among ethnic minorities (Fifth Plenum..., 2012; Huong et al, 2013). Each insured

²⁶ Migrant workers are allowed to choose between the first and third schemes.

²⁷ The morbidity rate per 100,000 of tuberculosis in 2012 was 215 in Vietnam and 6.7 in Cuba (ONEI, 2014; Huong et al, 2013).

and their dependents are assigned to a public local clinic that provides primary care; if they go to said clinic a 5% co-payment is charged; when special treatment is needed, the doctor refers to a hospital and a basic 5% fee is also paid, but the proportion increases with more costly treatment. If the insured goes to another clinic he/she pays 70% of all costs. For children age 6-18 the state pays 30% and parents 70% (De Miranda and Yamaoka, 2014). Health care costs were 2.54% of GDP in 2010, twice China's but one-third Cuba's.

III. SOCIAL ASSISTANCE

1. Evolution. The Revolution provided social assistance to various “vulnerable groups”: elderly, disabled, single mothers, children and parents dependent on deceased workers, low-benefit pensioners, and workers without a pension. The poor that don't own a dwelling and rent it from the state cannot pay more than 10% of their salaries. In almost 56 years since the Revolution, the government has not published poverty statistics and claimed that eradicated poverty.

As a result of crisis, the urban population “at risk of having a basic need uncovered” (a euphemism for poverty) rose from 6.3% to 14.7% in 1988-1996. In Havana, the population “at risk” augmented more than three-fold: from 6% to 20% in 1988-2002; a poll on poverty self-perception showed that 23% of the people considered themselves “poor,” and another 23% “almost poor” (Añé, 2007). The poor were mainly made up by women, the elderly, Afro-Cubans, eastern-province migrants, those with only primary-school education or living in homes with six or more people, and the unemployed (Espina 2008). The City of Havana is the most economically and socially developed province and hence it is appropriate to conclude that the poverty rate in the other 14 provinces and Cuba as a whole was higher.

Despite the poverty increase and due to lack of resources, the average social assistance real pension decreased 82% in 1989-1994—the worst period of the crisis. The nominal monthly average social assistance pension in 2000 was only 105 pesos (US\$4.20), not enough to purchase one or two days of food in non-rationed markets. However, as the economy improved, in 2000-2006 the number of social assistance beneficiaries jumped three-fold while as a percentage of the total population grew from 1.8% to 5.3%. Social assistance expenditures stagnated at 0.5% of GDP in 1989-2000, but gradually increased to 2.2% in 2006 (see Figure 3).

2. Reforms. Raúl's economic reforms are needed and rational but have expanded poverty for various causes: removal of subsidized goods from the rationing list and selling them at market prices three-to-four times higher than rationed prices; social-service cuts, such as shown in health care; abolition of subsidized meals in workers cafeterias (workers currently receive a voucher insufficient to buy lunch); increases in public-utility tariffs and goods sold at TRD with a markup of 230%; and rising open unemployment from 1.6% to 3.3% (ONEI, 2014).

Since 1995, Cuban economists correctly recommended that the provision of universal subsidies to goods (rationing), received even by the high-income group with regressive effects, be replaced by social assistance targeted to the needy, not only to save fiscal resources but also because they would have progressive effects in distribution. In 2008, Raúl accepted such advice and promised that nobody in need would be unprotected. And yet, in 2011 the Party Congress approved a resolution terminating social assistance to beneficiaries with families able to help them.

Detecting and eliminating “free raiders” (those who don’t need assistance) is a usual international policy but said resolution is unreasonable in Cuba’s milieu of expanding poverty and generalized level of need. A sweeping reversal in social assistance took place in 2006-2013: total beneficiaries shrank from 5.3% to 1.5% of the population whereas the number of poor expanded hence most of the needy lack social assistance (Figure 3). Furthermore, based on the rate of 20% poverty in 2002, which must have increased with the structural reforms, the author roughly estimates that the poor covered by social assistance shrank from 19% to 7.6% in 2009-2013 whereas that in Havana fell from 15.4% to 9.7% (Table 4). Coverage of the elderly by social assistance (mostly pensions) in 2013 is estimated as 8% (based on ONEI, 2014).²⁸

Table 4. Estimates of Poor Population Covered by Social Assistance in Cuba and Havana, 2009 and 2013

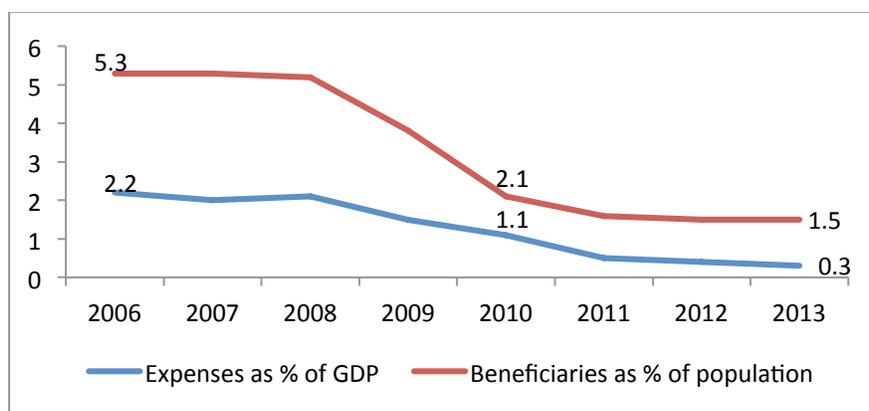
Estimations	2009		2013	
	Cuba	Havana	Cuba	Havana
Total population (thousands)	11 243	2 142	11,210	2,117
20% living in poverty ^a	2 248	428	2,242	423
Social assistance beneficiaries	426	66	171	41
Poor people covered (%)	19.0	15.4	7.6	9.7

^a On the basis of 2002 data, the 2013 rate should be higher.

Source: Author’s elaboration based on ONEI, 2011, 2014; 2002 poverty rate from text.

In 2006-2013, the social-assistance budget allocation (the smallest of all social services) dropped from 2.2% to 0.3% of GDP (Figure 3). The monthly average social assistance benefit was 128 pesos in 2013 or US\$5, an increase of US\$1 over 13 years, it accounts for half the average social-insurance pension hence it does not cover basic food needs. In addition, the following cuts were implemented: 21% on social assistance hospital beds for the elderly and the disabled; 21% on homes for the old;²⁹ and 63% on assistance for the elderly in need (ONEI, 2008b to 2014).

Figure 3. Decline of Social Assistance in Cuba, 2006-2013



Source: Author’s elaboration based on ONEI, 2007 to 2014.

3. Comparisons. In Latin America, 15 countries provide social assistance pensions of various

²⁸ 170,674 (social assistance beneficiaries) divided by 2,135,280 (population age 60 and above) x 100 =8%/

²⁹ Only 15,825 slots are available in asylums and nurseries but 480,000 age 60 and above need care.

types,³⁰ all of them targeting the poor, except for Bolivia that grants a universal pension to all the elderly regardless of their income. One of the least developed countries in the region, Bolivia's universal pension pays US\$40 monthly six-fold Cuba's pension, whereas Costa Rica targeted pension US\$140 is 28-fold. Cuba's coverage of the elderly population by social assistance pensions (8%) is considerably lower than in Bolivia, Uruguay and Argentina 97%, Brazil 86%, Chile 84%, Costa Rica 57% and Panama 45%. Cuban coverage is also below that in the least developed countries save for Honduras with 5% (Roffman and Oliveri, 2012; IADB, 2014; Lazo, 2014; CCSS, 2015; Bertranou et al, 2016; Mesa-Lago, 2016b; Mesa-Lago and Bertranou, 2016). The most successful anti-poverty programs, however, are the conditional cash transfers that most countries in the region have but not Cuba

China social assistance has multiple schemes, the main one is cash transfers to low-income households to meet basic survival needs (urban and rural *Dibao*) that takes 69% of total assistance expenditures; recipients' income must be under a social assistance line (the aid fills the gap) and undertake an annual mean test.³¹ Other schemes are: aid to survivors and veterans; cash transfers to rural elderly, disabled and children, all without working capacity, income and a guardian. Financing is about 72% from the central government and the rest from local governments. A medical assistance scheme targets the extreme poor incapable of paying high medical bills; at the start only inpatient care was provided but it's expanding to outpatient care; the government reimburses most expenses but the beneficiary has to pay a part. Targeting is a major problem in all these schemes and fraud is common (Leung and Wu, 2015). According to ILO (2014), coverage of the elderly by non-contributory pensions was 42% in 2010, five-fold Cuba's 8.1%; all social assistant recipients above age 64 were 17.3%, more than twice Cuba's. The rural *dibao*, however, covers only about 10% of the poor whereas more than half of the recipients are not poor. The average monthly assistance paid in 2013 was US\$32 (six-fold Cuba's average of US\$5), but US\$41 in urban areas and US\$18 in rural areas (Leung and Wu, 2015). Social assistance cost was 0.5% of GDP in 2010 (Gao, 2013), lower than Cuba's in that year (1.1%), but it includes some services not available in the latter.³²

In Vietnam, all persons age 80 and above that are not in the public sector and lack a pension and family support, receive a non-contributory pension of US\$9 monthly; in 2014 the National Assembly approved a raise to US\$13.50 (both higher than Cuba's). The elderly under the poverty line³³ and lacking family support gets such pension at age 60. In addition, assistance is granted to other groups in need, most living in poor households and lacking capacity to work: the disabled, the mentally ill, infected by HIV/AIDS, single mothers, children of low-income families or with no supporting adults, and those who adopt orphans or abandoned children. Coverage by all these programs extends to 24% of the total population 16-fold that of Cuba (De Miranda and Yamaoka, 2014); however, based on the elderly, coverage was 8.7% (ILO, 2014) similar to Cuba's. The cost of social assistance for the elderly was 0.1% in 2010, one-tenth that of Cuba in that year and also lower than China (ILO, 2014).

IV. SOCIAL SECURITY COSTS AND FINANCIAL SUSTAINABILITY

³⁰ The countries are: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, Uruguay and Venezuela. Only the least developed countries don't provide such pension (IADB, 2014).

³¹ The *wubao* assistant scheme for the rural elderly in need is being replaced by the *dibao*.

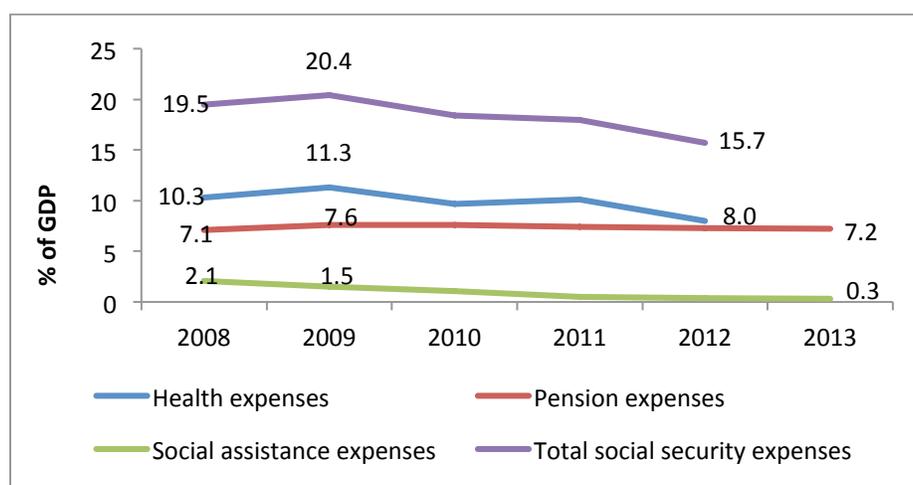
³² ILO (2014) estimated 0.22% of GDP for 2010.

³³ The poverty line in urban areas is US\$25 monthly and in rural areas US\$20, both higher than the average pension in Cuba.

1. Evolution. In 2009, the cost of social security peaked at 20.4% of GDP the highest in Latin America.³⁴ Such outcome was due to the financial commitment of the revolution to expand social protection of the population, which in turn became a source of people support. But such costs proved to be financially unsustainable in the long run, aggravated by both internal and external adverse factors; among the former are rapid population aging and rising life expectancy (both increasing the costs of pensions and health care),³⁵ external factors are: the collapse of the socialist camp and the world financial crisis, despite substantial Venezuelan aid since 2003.

2. Reforms. Raúl therefore was forced in 2009-2013 to cut social security costs by 4.7 percentage points (pp) of GDP from 20.4% to 15.7% (Figure 4). Most affected were health care (-3.3 pp), followed by social assistance (-1.8 pp) whereas pensions were only reduced 0.4 pp and still are slightly higher than in 2008. As already shown, those cuts have hurt the population.

Figure 4. The Cost of Social Security in Cuba, 2006-2013^a



^a Separate data on health expenses 2013 are not available because of merging with other category. Source: Author's elaboration based on ONEI, 2009a to 2014.

The Cuban economy lacks the capacity to sustain the high cost of social security. The GDP growth rate slowdown from 12.1% to 1.3% in 2006-2014³⁶ (an annual average of 2% in the last six years), systematically below official targets and among the lowest in the region. Gross fixed capital formation fell from 10.4% to 8.3% of GDP in 2006-2013 (compared with 25.6% in 1989 and a regional average of 20% in 2014); Cuban economists estimate that 25% is needed to sustain economic growth. The agricultural production index in 2013 was below the 2005 level, except in three crops, and the industrial production index declined 45.4% in 1989-2013. In 2006-2013, the trade balance of goods ended in deficit peaking at \$10.6 billion in 2008; after a brief decline it resumed its growth and reached \$9.4 billion in 2013, the second largest in history (ONEI, 2014; ECLAC, 2014). Food imports cover 70% of domestic consumption and augmented

³⁴ As a percentage of current expenditures in the state budget, however, expenditures peaked at 29.5% in 2011 and were 29.3% in 2013, because current expenditures over GDP fell 10 percentage points in the period (ONEI, 2014).

³⁵ Reportedly, in 2014 life expectancy in Cuba was 78.45%, the highest in Latin America after Costa Rica, and also higher than China 74.8 years (Leung and Xu, 2015). Cuba's active/passive ratio is 2.9 vis-à-vis 6 in Costa Rica (CCSS, 2015).

³⁶ ECLAC (2014) estimates 1.1% the lowest fifth rate among 35 countries of Latin America and the Caribbean.

from US\$1.5 to US\$2 billion in the last three years. Conversely, Cuba enjoys a surplus in its balance of services, mostly generated by the export of medical services mainly to Venezuela; such surplus often offsets the deficit in the balance of goods but leads to a strong economic dependence on Venezuela. The author estimated the combined value of the entire economic relationship with Venezuela at \$13 billion in 2010, tantamount to 21% of Cuban GDP (Mesa-Lago, 2013). The risk of this dependence increases with the severe economic crisis of Venezuela. On December 17, 2014, Presidents Obama and Castro agreed to normalize relations between the two countries. Obama relaxed somewhat restrictions on trade and travel to Cuba, took the island off the list of countries sponsors of terrorism, and embassies were opened in Havana and Washington. It is too soon to assert if detente would substantially help the Cuban economy, diminish its dependency on Venezuela and improve social security.

3. Comparisons. Despite Cuban reductions in social security costs, they continue to be among the highest in the region. The latest comparative data in 2010, before the sharpest costs occurred in Cuba, placed that country at the top, closely followed by Argentina, Brazil and Uruguay (ILO, 2014). Most public systems in Latin America usually suffer from severe actuarial disequilibrium; private systems are based on individual accounts and are less affected by that problem although they are not immune to population aging. The re-reforms in Argentina and Bolivia face financial problems in the long run (Mesa-Lago, 2014b, 2016b; Bertranou et al, 2016).

China, the second largest economy in the world, lags well behind developed countries on social security whose cost, subtracting education and housing, was 4.7% of GDP in 2010, less than one-third of Cuba's 15.7% (ILO, 2014).³⁷ But as the official policy goal shifts from economic growth to social expenditures, more public resources are being allocated to the latter. Funds at individual accounts of the urban pension scheme were transferred to the PAYG tier hence depleting the accounts; since 2000 both pillars are separated but still in 2011 accounts were 89% behind the target and 14 provinces had deficits (Leung and Xu, 2015). Population aging is accelerated by the one-child policy; ratios of active insured to one pensioner were 3.1 in the urban pension scheme, 2.8 in the rural scheme (both similar to Cuba's 2.9), and probably less than 2 in the civil servants scheme. Still the percentage of the population age 60 and above was 14.9% in 2013 vis-à-vis 19% in Cuba. Due to the lack of a mature financial market, funds in the individual accounts are invested in public debt and bank deposits with either small or negative capital returns, which could reduce future pensions. The total contribution to the urban pension scheme is 28% relatively high compared with that of OECD countries and much higher than Cuba's (Fang, 2014; Leung and Xu, 2015). The health system is financed by employers and insured contributions that sum 43% of wages (32% by employers); not reimbursable costs demand co-payments, out-of-pocket expenses and private insurance; subsidies from the central and local governments have been increasing thus questioning sustainability. Social assistance financing from the central government has risen to 72%; the rest comes from local governments.

Vietnam's reforms have been similar to China's and the former social security costs, excluding other schemes, were 5.7% in 2010 (ILO, 2014) higher than China but much lower than Cuba. The pension scheme is financed by a contribution of 22% vis-à-vis 12% by employers in Cuba and only a minority of workers contributing 5%; the system is PAYG but with is a sizeable collective fund (absent in Cuba) which currently generates a surplus. In order to keep the fund in

³⁷ According to Gao (2013) it was 4.5% in 2011.

equilibrium, a 1% increase in contribution is planned every two years; but investment real returns in 2001-2010 averaged -4%, hence a future deficit is expected and reserves to last until 2024 thereafter forcing state subsidies or higher contributions³⁸ (Huông et al, 2013; De Miranda and Yamaoka, 2014). The health care scheme is public and partly financed by the state and minor co-payments at the primary level but increasing to a majority at higher levels if the insured chooses a provider other than the assigned. Social assistance is fully state financed as in Cuba and China. The 2012-2020 social-protection plan stipulates a cut in state-budget expenses on the elderly to ensure sustainability like in Cuba (Huông et al, 2013).³⁹

V. CONCLUSIONS AND SUGGESTIONS FOR IMPROVEMENT

This section evaluates Cuba's performance on ILO social security principles (see Mesa-Lago, 2012) compared with that of the other countries emphasizing the impact of the reforms, and provides policy suggestions to improve Cuba's situation.

1. Conclusions

Building upon a previous relatively advanced system in the region (save for social assistance), Cuba's revolutionary government in its first three decades, built a universal and virtually free social security system (at the level of some developed countries) with generous entitlement conditions and benefits, based on the government commitment and huge Soviet aid, and without taking into account financial sustainability in the long run. The collapse of the USSR and the socialist camp radically changed the situation; the crises of 1990-1995 and 2008-2009 eroded social security and aggravated the system unsustainability. Raúl's structural reforms subordinated social security to economic growth and available fiscal resources subsequently cutting expenses, diminishing access and reducing benefits. Conversely, China and Vietnam started almost from scratch and initially gave priority to economic development, subordinating social security to growth and fiscal capacity, establishing a bare minimum social security that took four and two decades respectively for takeoff and still is gradually and slowly expanding.⁴⁰ Such disparate paths could result in a convergence of the three systems (Dillon, 2016).

a) Unity and uniform treatment. Cuba's social security system is ahead of the other countries because its pension and health care systems are unified and entitlement conditions uniform with the exception of the schemes for armed-forces and security personnel, which have better conditions and more generous and costly benefits than the general system, as well as distinct health-care treatment of hard-currency-paying foreigners. Latin America has experienced a gradual process of unification-normalization but still fragmentation persists in many countries and the large majority retains separate schemes for the armed forces, even in Chile where the military regime imposed full privatization of pensions and part of health care, but keeping its separate privileged schemes. China and Vietnam have very fragmented social security systems in the three key programs.

³⁸ Because the compulsory fund is very young, the ratio of active insured to one pensioner was 5.3 to 1 in 2011 (almost twice Cuba's ratio) but declining fast. In the voluntary program the ratio was 0.6 to 1 (Huông et al, 2013; ratios estimated by author).

³⁹ Vietnam social protection eight-year plan aims to achieve a universal system by 2020 but targeted on those in especially difficult circumstances: children in need, low-income elderly, severely disable persons and the poor (Fifth Plenum..., 2012). The ILO estimates that to close the social gap will cost between 1.98% and 6.06% of GDP by 2020 (Schmitt and Chadwick, 2014).

⁴⁰ China first social security law was enacted in 1951 whereas Cuba was in 1963

b) Coverage and access. Cuba's contributive pension coverage is quasi universal (aided by having the lowest informal labor sector among all compared countries) and only a minority of workers pays pension contributions, placing Cuba ahead of most of Latin America, China and Vietnam. Coverage of Cuba's public health care system is universal and free for the population, higher than all countries compared. And yet, effective access to health care has dwindled due to the exportation of medical personnel to earn hard currency (primary-care family doctors have halved), deterioration of services and severe scarcity of medicine and other inputs. Although comparisons on social assistance coverage are difficult due to the diverse programs involved, Cuba's is lower than in most Latin American countries, as well as Vietnam and China; furthermore it is being sharply cut despite an expanding vulnerable population whereas it is expanding in the two Asian countries whose poverty incidence is declining.

c) Benefit sufficiency. Cuba's average monthly pension in 2013 was equivalent to US\$10, grossly insufficient to cover basic food needs; the average real pension dwindled by one half in 1989-2013. The social assistance average monthly benefit was tantamount to US\$5, half of the average pension and hence even more insufficient to cover food needs. Pensioners and social assistance beneficiaries are among the poorest groups in the population and survive due to foreign remittances, doing work and help from relatives. Cuba's average contributory and non-contributory pensions are below those in most of Latin America. China's and Vietnam average pensions in the mandatory scheme are respectively 26- and 12-fold Cuba's, whereas average social assistance benefits are six- and three-fold Cuba's.⁴¹ Ages of retirement in China and Vietnam are five years lower in each sex than Cuba, and require 15 years of contribution less. The replacement rate in Cuba is 60% of five year wages, larger than China and Vietnam 45% of 15 year wages. The large majority of Latin American countries adjust pensions to the CPI whereas Cuba, China and Vietnam don't.

d) Social solidarity and gender equity. No social security scheme has been privatized or "marketized" in Cuba; social security is public and mostly state financed hence social solidarity is maximized, with transfers among generations, genders and income groups (save for the armed forces). In Latin America, social solidarity and gender equity are enhanced in public and social insurance systems but excluded or reduced in pension individual accounts and HMOs; social solidarity is exogenous through state provision of minimum pensions and social assistance; reforms in three countries have improved social solidarity and gender equity. Because of China's highly fragmented pension and health care systems, social solidarity is diminished; central and local government subsidies, particularly in social assistance, infuse some solidarity. Vietnam allows for solidarity among generations in the pension scheme, and also grants women 1% more than men in the pension for each additional year of contribution after the statutory age.

e) Administration. Cuba's social security is excessively centralized in a state monopoly that bans private, cooperative and individual practice, without effective workers' participation in their management, monitoring and evaluation, hence in need of decentralization and social participation. The ILO recommended tripartite approach is lacking as workers do not have any participation in the management of the public pension and health systems. Administrative costs are impossible to estimate as they are not transparent and the government does not provide data.

⁴¹ Chile's average social assistance pension in 2013 was 26-fold Cuba's.

Latin America has a wide variety of systems; half of the countries have privately managed pension funds and publicly administered in the other half; most countries have HMOs although health-care social insurance leads. Tripartite participation (workers, employers and government) functions in public social insurance schemes, but not in private systems. Most countries are moving towards decentralization. Vietnam and particularly China have decentralized systems; the central government delineates broad guiding principles for the reform (indicative rather than mandatory) and local governments are encouraged to experiment with diverse solutions according to their peculiar circumstances, taking responsibility in management and decision making. In China, social organizations participation has increased since 2012; village committees play a significant role in selecting *dibao* beneficiaries. In Vietnam there is less participation than in China but more than in Cuba, with representatives of the labor confederation and cooperatives in the Board; management costs are high and compliance low (Huöng et al, 2013). In both countries there has been a “marketization” of social security with mixed pension and health care schemes, combining partial central and local government funding with insured contributions and co-payments.

e) Financial sustainability. Cuba’s total contributions to social security amounts to 12% by enterprises to the pension scheme (17% including 5% paid by a tiny minority of workers), however, the state subsidized the resulting deficit with the equivalent of 9.3% of wages in 2013 (much more to achieve equilibrium in the medium term) for a total of 21.3%; health care is free. China contributions are 28% for the urban pension and 43% for the health care system; in addition, central and state governments have increasing transfers to balance the system. Vietnam contribution to the pension scheme is 22% (projected to rise 1% annually); and about 5% co-payments to the health care system. Therefore Cuba’s contribution is the lowest among the three countries and also smaller than that of Latin American countries at a similar level of social development, like Uruguay, Argentina, Brazil and Costa Rica. The total cost of social security in Cuba is 15.7% of GDP (despite a cut of 3 percentage points by Raúl’s reforms) vis-à-vis 4.7% in China and 5.7% in Vietnam (about one-third of Cuba’s).⁴² Therefore Cuba has the highest costs and the lowest contributions hence the actuarial deficit should be enormous; but access to and quality of benefits have deteriorated. Pension and health care costs will keep climbing due to population aging, currently the highest in the region tied to Uruguay. China is aging faster than Vietnam but still well behind Cuba. Vietnam’ active to passive ratio is two-fold Cuba’s. Latin American private pension systems are less affected by aging but not exempted in the long term: to cover a longer period of retirement, the “defined” contribution has to be increased or the age raised or the benefit reduced. Some public systems are undertaking parametric reforms to make them more sustainable but still confront actuarial disequilibrium.

In summary, Cuba is ahead of other countries in unity-uniformity, coverage saved for social assistance and eroding in health care, social solidarity and gender equity, but below the rest on benefit sufficiency, administration, and financial sustainability.

2. Some Suggestions to Improve Social Security

Generally, Cuba should ask the ILO to conduct an assessment of the state of social protection floor (SPF) on minimum contributory pensions, basic health care and social assistance for the

⁴² Despite the pension scheme tightening, the state-financed deficit has grown.

elderly, including an exercise based on a national dialogue to generate consensus, as already done in many countries. The ILO should also conduct a costing exercise to determine the available and necessary fiscal space for needed social security improvements in a ten-year period, using the “Rapid Assessment Protocol, with a choice between low and high cost packages hence providing the government with a range of options, costs related to GDP and alternative funding sources (Schmitt and Chadwick, 2014). Specific suggestions are listed below.

a) Pension system: Conduct a household survey to estimate total coverage of the labor force by contributory pensions and the elderly also by non-contributory pensions, in order to identify the uninsured and ways to incorporate them (self-employed, usufruct and private farmers and employees in microbusiness); integrate into the general pension system the costly armed-force and internal-security pension schemes; considered a pension reform either creating a new PAYG scheme or a mixed system as in China and Costa Rica (see 2-d); with new resources, raise pension levels and adjust them to the cost of living.

b) Health care: Maintain the public health-care system but with needed changes: give priority to potable-water and sewage infrastructure; reallocate scarce resources more rationally, e.g., instead of continuing the effort to reduce infant mortality (a problem basically solved) shift those funds to improve the water-sewage infrastructure, medicine imports and other areas of greater need; discontinue free fellowships for foreign students and health care aid to other countries (a humanistic task indeed but domestic gaps should have priority); convert maternity and pediatric hospitals with low occupancy rates into geriatric hospitals and old-age homes; charge the full cost (or at least a co-payment) of curative health services to the highest income strata and slowly set co-payments to top middle income strata, as done in China, Vietnam and some Latin American countries; attract more foreigners to receive medical attention in Cuba; reduce the number of family doctors abroad as they are essential to provide primary care; authorize self-employment of health professionals as well as health-care cooperatives that compete with state services.

c) Social assistance: Through the household survey suggested above, estimate the people in real need, design a targeting tool as those used in several Latin American countries; start providing social assistance to those in extreme poverty and, as resources become available, then gradually incorporate all the poor;⁴³ once the social safety net is in place, continue the reduction of the rationing system; permit churches and NGOs to receive direct foreign aid in order to establish and expand free old-age homes for the needy, as well as to help other groups in the vulnerable population.

d) Financial sustainability. Carry out an actuarial valuation to determine the present and long run pension disequilibrium and what alternative policies are available to improve the situation; one option is to close the current general pension system to new entrants, make the state responsible for ongoing pensions, and create a new public system for young workers already insured in the old system as well as new workers, with a reserve that is invested to generate capital returns and help in the long-term financing and improvement of pensions; enforce and

⁴³ If Cuba were to expand social assistance to protect all those in need, costs would jump ten-times, from 0.3% to 3% of GDP. But a targeted assistance to those in must need, e.g., extreme poverty, would cost less and significantly reduce poverty.

gradually increase the personal income tax set in the tax reform and assign part of the new revenue to social security; savings would result from the integration of the armed forces schemes; the potential dividend from normalizing relations with the USA could reduce the defense budget and shift funds to social security setting priorities to the most urgent needs.

Cuba's social security is unique in Latin America, China and Vietnam, for its universal and free features but, despite paying meager benefits, it is financially unsustainable; current reforms are painfully cutting away expenses. Comparisons with China and Vietnam done herein and in other chapters of this book show that the two Asian countries have achieved remarkable economic success by implementing more profound and faster economic reforms than Cuba, which have resulted in a mixed socialist market system. On the other hand, they are behind Cuba in social security coverage and unity-uniformity but have a more financially sustainable social security system that is expanding gradually according to available resources. First, the only way for Cuba to escape from the current economic abyss is to deepen and accelerate the structural reforms that Raúl has been implementing for eight years (slowly and with many obstacles and disincentives) in order to substantially transform the current inefficient economic system, characterized by predominance of central planning and state-ownership of the means of production over the market and non-state ownership, into a mixed system able to generate high and sustainable growth. Second, Raúl social security reforms are painful but necessary, they are now being subordinated to economic capacity but, as suggested in this section, multiple measures could be implemented to improve efficiency, benefits and sustainability and thus enhance social security.

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