The financial unsustainability of the Italian public health care system

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Abstract

***Purpose of the paper**: Health and sustainability have become an almost indissoluble unity of analysis in all advanced health care systems. We ask the research question if the Italian enduring recession will affect the economic and financial sustainability of Government health financing in the period 2014-2018.*

***Methodology**: We have adapted the theoretical framework of economic and financial health care sustainability introduced by the WHO in 2009 to an economy suffering from an enduring recession and stagflation, with data obtained from the Italian Document of Economy and Finance 2011 and 2014 and the International Monetary Fund.*

***Findings**: We found that the Document of Economy and Finance 2014: 1) has significantly reduced the fraction of GDP allocated to public health financing (6.98%; 95% CI 6.80-7.21) with respect to the previous Document of Economy and Finance 2011 (6.98%; 95% CI 6.80-7.21) at a confidence level of $p < 0.05$ with $t = 4.4285$, $df = 11.978$ and p-value = 0.0008269; 2) has increased the fraction of GDP allocated to non-health financing; 3) has based its spending forecasts on a growing GDP , contrary to all forecasts made by the IMF. Within the analytical framework utilized, this implies that the Italian Government health financing is both economically and financially unsustainable.*

***Research limitations**: This approach encounters some limits as the dynamic uncertainty of a socioeconomic downturn and an aging population could induce a complete modification of health care financing from public to a mixture of public and insured private.*

Key words: sustainability; crisis; financial and economic unsustainability; public health financing; italian health care system

1. Introduction: health and sustainability in Italy

Health and sustainability have become an almost indissoluble unity of analysis in all advanced health care systems.

In Italy, from the point of view of health care quality, the World Health Organization (WHO) in the World Health Report 2000 ranked the Italian Health Care System 2nd among 191 countries with respect to the overall health system performance (WHO, 2000, p. 153, Annex Table 1).

Earlier, in 2008, Backman (Backman *et al.*, 2008) analyzed the right to health in 194 nations and, again, Italy ranked among the top performers in terms of health needs recognition, non-discrimination, equity, health

information, health care planning, accessibility to health care and medicines, health workforce education and health monitoring, assessment and accountability.

These achievements have hitherto been financially and economically sustainable, characterized by the large role played by the Government versus out-of-pocket and residual privately insured financing[1].

The problem is that, in the 3rd trimester of 2014, Italy is one of the few European economies which has not yet recovered from the 2008 economic crisis and is still suffering from a negative GDP growth with the second largest Sovereign Debt in the world after the USA (OECD, 2014) staying at 121% of the GDP (Bank for International Settlements, 2011; IMF, 2011; World Bank, 2014).

The percentage change of the GDP in I-2014 is -0.1% compared with the previous quarter, and -0.5% compared with the same quarter of the previous year (ISTAT, 2014).

In addition, for the sake of a complete picture, Bloomberg (Bloomberg, 2014) ranks Italy as the nation with the 2nd most rapidly aging population, the 5th highest unemployment rate and the 5th worst outlook for EU economies.

Thomson *et al.*, 2009, in their research on Health Care Financing in the European Union, introduced a theoretical framework of the economic and fiscal sustainability of Government health expenditure, which was based on the total differential variation of health expenditure with respect of variation in the GDP (fiscal sustainability) and other Government expenditure (economic sustainability).

This research, however, did not address the effects of a six-year (2008-2014) prolonged recession, in terms of negative GDP growth and positive Government Debt growth, on Government financed health care, such is the case with Italy in 2014.

In this paper, i) we propose an adapted framework for the assessment of the *economic and financial sustainability* of Government health financing in an economy suffering from negative GDP growth; ii) we apply this framework to Italy and iii) we utilize two important public economic and financial planning documents enacted by the Italian Ministry of Finance: the *Documento di Economia e Finanza 2011* (DEF 2011), which outlined for the first time the stability and health care spending review objectives for the period 2011-2014, and the *Documento di Economia e Finanza 2014* (DEF 2014), which addresses the extraordinary measures due to the enduring economic and financial crisis in the period 2014-2018; iv) we ask the research question if, within the assumptions of the adapted framework proposed, the Italian public healthcare financing plan in the period 2014-2018 is economically and financially sustainable.

[1] Total health expenditure as percent of the GDP is equal to 9.2%, below the OECD average of 9.3%; public expenditure as percent of total expenditure at 77.8%, above the OECD average of 72.2%, and out-of-pocket financing as percent of total expenditure is at 18%, below the OECD average of 19.6% (OECD Health Statistics , 2013).

2. The growth of public health financing and the marginal role of private financing in the period 1997-2010

The Italian Health Care System (FSN) has been reformed in the period 1992-1999[2], following the full implementation of the law 833/78, after which the Government, through its publicly tax funded[3] Fondo Sanitario Nazionale (FSN), became the central player in providing health care (Cesana, 2005) guaranteeing 99.9% publicly financed universal coverage (OECD, 2013). Not unexpectedly, the Government component of health care financing as percent of the total healthcare financing[4], has been growing from 70.8% in 1997 to 77.8% in 2011. The uninsured private out-of-pocket component which, though declining, still remains very high and consequently a potential source of social instability in times of pervasive economic recession, has been declining from 26.4% to 18%. The residual health financing remained virtually unchanged, highlighting the residual nature of privately insured health financing in Italy (Olgiati and Danovi, 2012).

Among the goals of the health reform were[5] the containment of rising costs and the improvement of the efficiency of public healthcare provision (Maio and Manzoli 2002; Manzoli *et al.* 2008). However, since the full implementation of the reform in 1997, public health financing has been growing from 5.45% of the Italian GDP in 1997 to 7.45% in 2010.

This combined effect of the growth of public health financing *and* the growth of the GDP in the period 1997-2010 fuelled the growth of the total healthcare financing to a rate of 4.92% in the same period.

In synthesis, during the period 1997-2010, following the reform of the Health Care System, Italy increased both its propensity to spend in health care and the percent of such spending publicly financed. The result is that the growth of public health financing exceeded the growth rate of the GDP by as much as 1.8 times.

As Croft observed in *Exercise and life expectancy* (Croft and Palmer (2012):

> "(*omissis*) through increased daily exercise the risk of mortality can be postponed, but it cannot certainly be eliminated: the benefits of exercise are relative, but unfortunately the risk of mortality is still an absolute."

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2 In our research, the base year of the reform, whose successive implementations span from 1992 (D.Lgs.502/92) to 1999 (D.Lgs.229/99), will be considered the year 1997, when in Italy the Region of Lombardia, with the law L.R. 31/97, was the first to fully implement the guidelines of the law 833/78.

3 The reformed Italian Health Care System (FSN) is funded by direct and indirect taxation. Public funds are pooled centrally and regionally. Centrally pooled funds are allocated to Regional Health Care Systems (FSR) via risk adjusted capitation.

4 http://www.oecd.org/document/16/0,3746,en_2649_37407_2085200_1_1_1_37407,0 0.html (accessed 8/18/09)

5 The Reform of 1992-1999 focused mainly on Hospital Care provision and payment in addition to the introduction of a prospective Diagnosis Related Group (DRGs) public reimbursement system (tariff-based) in substitution of the preceding retrospective reimbursement system (cost-based).

The same holds true for the financial and economic sustainability of universal public health coverage in Italy after 1997; for how long and how much health expenditure could have kept growing at 1.8 times the GDP is a relative notion, but with a difference from the benefits of daily exercise: in public health financing if you run faster you arrive sooner.

Cœteris paribus projections[6] to the year 2025 and 2050 of these trends highlight an increase of the public health burden respectively to circa 11% and 20% of the GDP[7]. This past trend was clearly unsustainable in the light of the depressive Italian GDP long-term growth expectations and of the sovereign debt and deficit containment measures required in all advanced G-20 economies. In addition, the percent of public health financing on total health financing would have reached 85% by the year 2025 and exceeded 92% by the year 2050. It is therefore quite clear that, regardless of any contingency action, a structural financial turnaround of the growth rate of public health financing in Italy was indeed necessary (Olgiati *et al.*, 2012).

3. The definition of healthcare economic and financial sustainability of the World Health Organization

The amount of public health spending considered adequate and sustainable for an economy is not an absolute concept but a relative one, which needs to be analyzed within a dynamic framework where the contingent tradeoffs among the financial, economic, social and epidemiological variables determining sustainability must be assessed (Chunling Lu *et al.*, 2010).

The Social Sustainability of a health system pertains the fulfillment of the shared values that the nation holds. In Italy, the Health Reform of 1992-1999 placed the State as guarantor of the equality, solidarity and universal coverage in the provision of health services (Cesana, 2005). There follows that any public policy intervention undermining the constitutional principles of equality, solidarity and universal coverage through the outright reduction of public health services could not be considered socially sustainable in the Country.

The Epidemiological Sustainability of a health system refers to its capacity to meet the global health demands of the population in terms of increasing life expectancy at birth (Kaplan, 2009).

Economic Sustainability must be assessed in strict connection with Social Sustainability. For example, any public policy intervention which aims at reducing public health resources in absolute terms socially *and* economically sustainable, if the resources reduced, are those resources

[6] For an example of the methodology of Financing growth projection see: Chernew *et al.,* 2009. For a more specific analysis of the specific drivers of health Financing see: OECD, 2006.

[7] As a purely indicative term of comparison, total health Financing in percent of GDP is, in the year 2009, 11.6% in Germany and 17.4% in the USA. The percent of public Financing is 76.9% and 47.7% respectively, making the burden of public health Financing 8.9% in Germany and 8.3% in the USA. http://stats.oecd.org/Index.aspx?DataSetCode=SHA (accessed 8/18/09)

that are actually *wasted*, i.e. financed and actually expended but *not* utilized efficiently and/or effectively (Pagano and Vittadini, 2004) for a valuable (Porter, 2009) evidence-based (Orszag and Emmanuel, 2010) delivery of care. Therefore, Economic Sustainability acts like a bridge between Financial, Social and Epidemiological Sustainability: it makes savings in financial resources socially sustainable through the improvement in the value of the health services provided.

In the analytical framework of this paper we will utilize a more restricted definition of Sustainability, based on the World Health Organization's (Thomson *et al.*, 2009) definition of Economic and Financial Sustainability[8]:

a) economic sustainability specifically refers to growth in public health financing as a proportion of gross domestic product (GDP). Financing on health is sustainable up to the point at which the social cost of health financing exceeds the value produced by that financing. If health financing sufficiently threatens other valued areas of economic activity, health financing may come to be seen as economically unsustainable. In order to exemplify, every Euro spent on health care represents one fewer Euro spent on education, national defense, housing, and subsidies. The more we spend on health care, the less we are able to spend elsewhere (Thomson *et al.*, 2009).
b) the financial sustainability of a health system relates specifically to public financing on health care. A health care system may be economically sustainable and yet financially unsustainable if internal public revenue is not sufficient to meet public financing (Thomson *et al.*, 2009).

4. The theoretical framework of the sustainability of public health financing in relation to the research question

From a theoretical perspective, this paper is an analysis of the Italian Fiscal and Structural Policies on health care, and of their stability and sustainability in the face of the endogenous response to exogenous economic shocks[9]. We refer to the key variables proposed by Coady (Coady *et al.*, 2012) in their study of the economics of public health care reform in advanced economies, in particular to the relationship between Public Spending, Economic and Financial Sustainability, the Health Spending Trend and Budget Caps imposed by Fiscal Consolidation Measures in the EU.

From a wider perspective, this paper is an analysis of the links between Government Accounts and National Income and Production Accounts within the International Monetary Fund's System of National Accounts SNA 1993 (International Monetary Fund, 1993) adopted by the Italian Treasury for the definition of the *Documento di Economia e Finanza 2014* (DEF 2014).

In formal terms, if Y is the nominal GDP and P is the total public non-

[8] The term actually used by Thomson *et al.*, (2009) is Economic Sustainability, but in the present model we have divided the original meaning into Financial and Economic Sustainability, where, for the purpose of the present paper, the former conforms the best to the original definition.

[9] Other exogenous shocks such as the affordability of Gilead's Sovaldi™ (Sofosbuvir) for the Treatment of Chronic Hepatitis C or the Ebola outbreak have not been considered.

health financing, the fraction of the GDP allocated to public health financing is a function of *Y* (Financial Sustainability) and *P* (Economic Sustainability) at time t, subject to the constraint that $hY+P$ is lower than the maximum total fiscal revenues T plus a pre-defined level of *deficit d*, defined by the EU Fiscal Policy (European Central Bank, 2014).

Equation 1: Economic and Financial Sustainability

$$h = f(Y, P, t)$$
$$s.t. \quad hY + P \leq T + d$$

In Italy, within this financial and economic sustainability framework, we would expect public healthcare financing to be:

1) *financially unsustainable*: GDP growth is below expectations and fiscal revenues and the maximum deficit cannot be raised due to Excessive Deficit Procedures (European Central Bank, 2014);
2) *economically unsustainable*: a reallocation of public financing towards those social needs which are more urgent becomes a priority, and the fraction of GDP allocated to public health will have to be reduced.

In synthesis, we will test the null hypothesis H^0 that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance does not change over time:

Equation 2: Null Hypothesis H^0

$$H^0 : \frac{dh}{dt} = \frac{\partial h}{\partial Y}\frac{dY}{dt} + \frac{\partial h}{\partial P}\frac{dP}{dt} = 0$$

If the null hypothesis H^0 is rejected, we will generate the alternative hypothesis that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance changes over time:

Equation 3: Alternative Hypothesis H^I

$$H^0 : \frac{dh}{dt} = \frac{\partial h}{\partial Y}\frac{dY}{dt} + \frac{\partial h}{\partial P}\frac{dP}{dt} \neq 0$$

In particular, we will see that *Documento di Economia e Finanza 2014* has, from a statistical point of view, significantly reduced the fraction of GDP allocated to public health financing with respect to the *Documento di Economia e Finanza 2011* but it has increased the fraction of GDP allocated to non-health financing. In this regard, public health financing has become unsustainable, because alternative spending has become a priority.

We will also see that, on the contrary, the projected GDP is not decreasing in the period 2014-18. Within the analytical framework

utilized, this implies that the Ministry of Finance is not expecting a situation of Financial Unsustainability.

It is clear that if the expectations of a growing GDP are not met, public financing will become also Financially Unsustainable.

5. Methods, data sources and reproducibility of the research

Given the health policy implications of some of the findings, we decided to make the raw data and the analytic codes available for other researchers at the public repository: https://github.com/SAO65/DEF_2014 .

Raw data have been copy-pasted from the Documento di Economia e Finanza 2011, § III.3 SANITA' of Sezione II: Analisi e Tendenze della Finanza Pubblica and § IV.3 LA SPESA SANITARIA of Sezione II: Nota Metodologica (Allegato) (DEF 2011) and the Documento di Economia e Finanza 2014, Sezione II: Analisi e Tendenze della Finanza Pubblica and III.3 SANITÀ (DEF 2014) available at the URL http://www.mef.gov.it/doc-finanza-pubblica/def/ into the data.csv file (https://github.com/SAO65/DEF_2014/blob/master/data.csv). We have not automated the download of the data because we have decided to analyze the documents as is, with the data represented in the document itself when the document was finalized and published by the Ministry of Finance. The National Institute of Statistics, ISTAT, periodically updates actual and prospective data and modifies some of the accounting standards. Because of this manual passage, this research does not qualify as fully reproducible (R), but the analytic codes and the findings are reproducible (C) (Peng, 2009).

The code file is at the public repository: https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd

We have utilized R knitr literate statistical program version 3.1.0 and the ggplot2 package.

6. An analysis of the Italian Stability and National Reform Program of the Documento di Economia e Finanza 2011 and 2014

The DEF 2011 reports actual data for the year 2010 and a budget for 2011-2014; the DEF 2014 reports actual data for 2010-2013 and a budget for 2014-2018.

A preliminary analysis of Tab. 1 clearly reveals that one of the most striking and immediate characteristics of the Italian public financial planning, both in the DEF 2011 and 2014, is the systematic overestimation of the expected GDP versus the actual one:

a) the DEF 2011 registered an actual GDP of 1,548,816 m€ in 2010 and predicted an expected GDP of 1,671,939 m€ (sd 69,717) in the period 2011-2014;
b) the DEF 2014 registered an average actual GDP of 1,564,692 m€ (sd 11,879) in the period 2010-2013 - lower than the expected GDP of the DEF 2011 - still it predicted an expected GDP of 1,682,060 m€ (sd 80,511) in the period 2014-2018 - higher than the expected of the DEF 2011.

Such systematic failure to achieve the target GDP (Financial Unsustainability) is paired by the systematic policy of increasing both actual and expected Public Non-Health Financing and decreasing Public Health Financing (Economic Unsustainability) (See Tab. 1).

This unsustainability is clearly result of the enduring financial and economic crisis which, on one hand, reduces the available resources and, on the other hand, obliges the Ministry of Finance to reallocate public expenditure towards those social needs which are more urgent, such as extraordinary unemployment relief funds (Cassa Integrazione), pension benefits and the payment of interest on Sovereign Debt.

Tab. 1: Gross Domestic Product and Public Non-Health Expenditure in DEF 2011 and DEF 2014

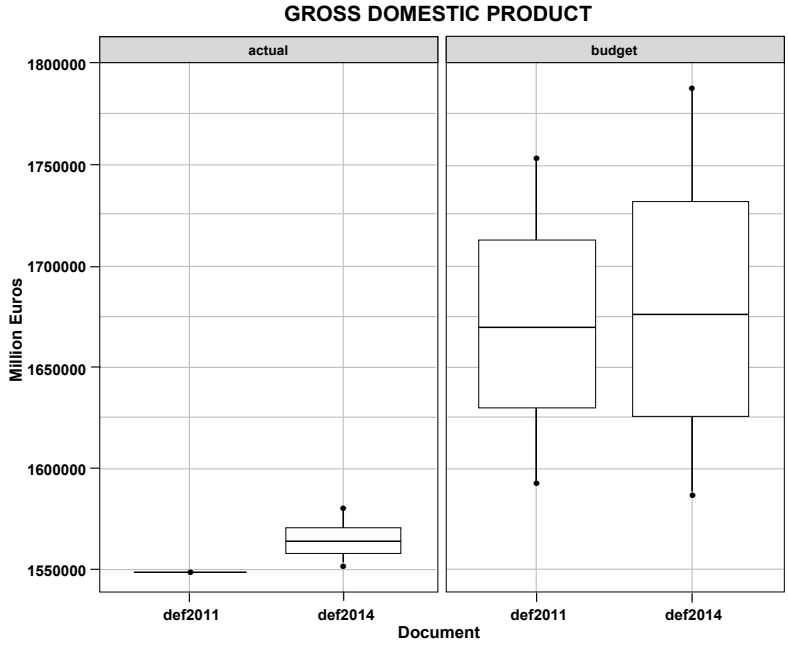
Description	Document	Period	Status	Mean	Standard Deviation
Gross Domestic Product	def2011	2010	actual	1,548,816	NA
		2011-13	budget	1,671,939	69,717
	def2014	2010-13	actual	1,564,692	11,879
		2014-18	budget	1,682,060	80,511
Public Non-Health Expenditure	def2011	2010	actual	680,056	NA
		2011-13	budget	707,842	21,010
	def2014	2010-13	actual	686,326	4,928
		2014-18	budget	712,879	12,841
Public Health Expenditure	def2011	2010	actual	113,457	NA
		2011-13	budget	120,210	5,167
	def2014	2010-13	actual	110,621	1,499
		2014-18	budget	116,264	3,901

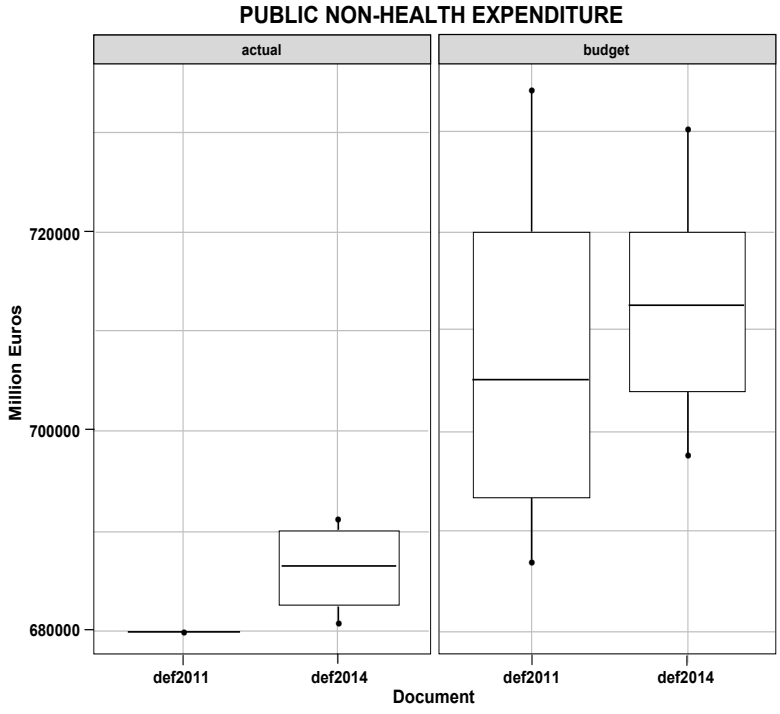
Legenda: DEF 2011 - Documento di Economia e Finanza 2011
DEF 2014 - Documento di Economia e Finanza 2014
Reproducible Codes: https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd

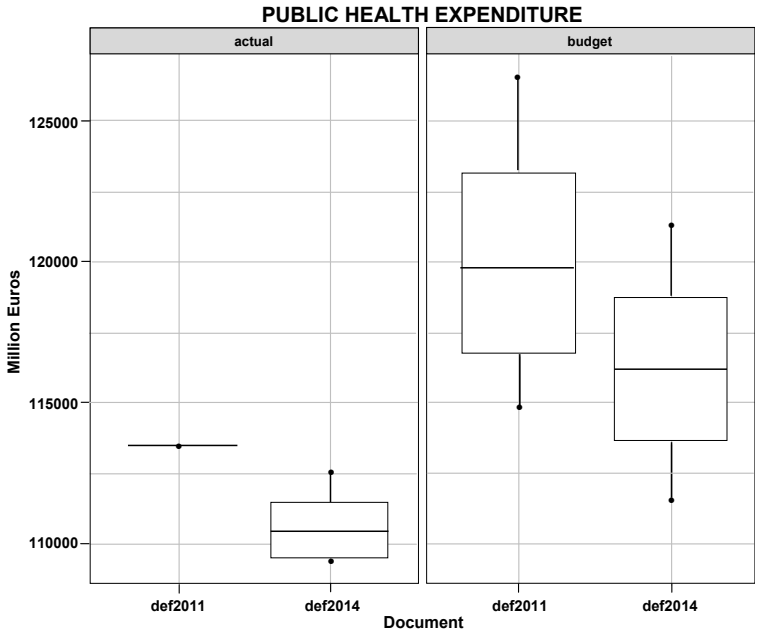
Source: DEF, 2011; DEF, 2014

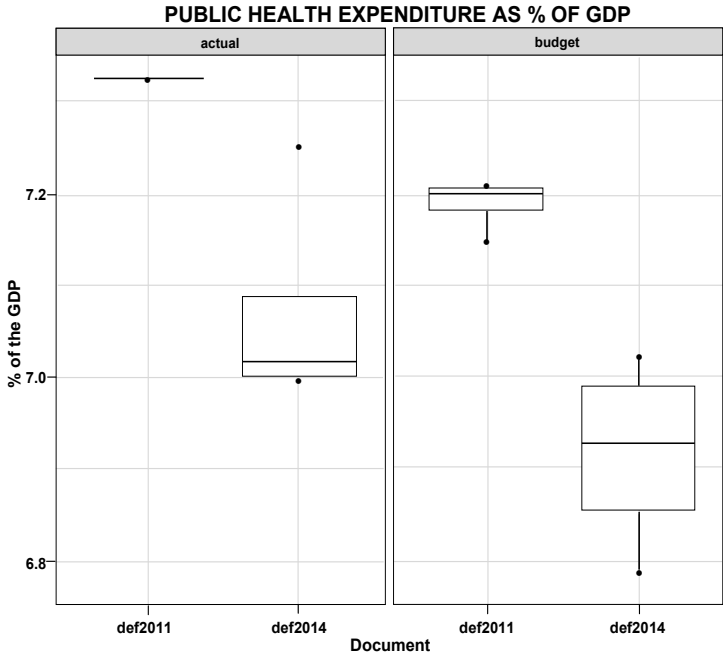
The combined effect of these variables can be appreciated in Figure 1. Public health expenditure as percent of the GDP has been reduced from the actual 7.33% in 2010 to an average of 7.19% (sd 0.03) in the period 2011-2013, and will be further reduced to 6.92% (sd 0.1) in the period 2014-2018.

Fig. 1: GDP, Public Non-Health Expenditure, Public Health Expenditure and Public Health Expenditure as % of GDP in DEF 2011 and DEF 2014









Legenda: DEF 2011 - Documento di Economia e Finanza 2011
DEF 2014 - Documento di Economia e Finanza 2014
GUI: R version 3.1.0
Reproducible Codes: https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd

Source: DEF, 2011; DEF, 2014

In addition, in mid-2014, as this paper is being written, the optimism (or hope) of the Ministry of Finance remains untamed even in the face of the Italian National Institute of Statistics reports (ISTAT) which, on May 14, 2014, published the Preliminary Estimates of the GDP, which we report in full:

> "In the first quarter of 2014 the seasonally and calendar adjusted, chained volume measure of Gross Domestic Product (GDP) decreased by 0.1 per cent with respect to the fourth quarter of 2013 and by 0.5 per cent in comparison with the first quarter of 2013" (ISTAT, 2014)

It is clear that if the expected GDP in the period 2014-2018 is below expectations, and the Ministry of Finance is not able or willing to reduce non-health financing, it will be forced to further reduce health expenditure to maintain unvaried the fraction of GDP allocated to health financing.

This situation will render the public component of the Italian Healthcare System unsustainable.

7. Robustness

We have utilized a Welch Two Sample t-test of the unpaired samples of public health financing as a fraction of the GDP to test the null hypothesis H0 (Tab. 2).

We reject the null hypothesis that the fraction of GDP allocated to public health financing in the *Documento di Economia e Finanza 2011* (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance does not change over time at a confidence level of $p < 0.05$, with $t = 4.4285$, $df = 11.978$ and p-value = 0.0008269.

We generate the alternative hypothesis that the true difference in the means of the fraction of GDP allocated to public health financing in the Documento di Economia e Finanza 2011 (DEF 2011) versus the *Documento di Economia e Finanza 2014* (DEF 2014) from the Italian Ministry of Finance is not equal to 0 at the 95 percent confidence interval 0.118 - 0.347.

Tab. 2: Comparison and 95% Confidence Intervals for public health and non-health financing as percent of the GDP in DEF 2011 and DEF 2014

Description	Document	Period	Mean	95% Confidence Interval	
Public Health Financing as % of the GDP	def2011	2010-13	7.22	7.15	7.31
	def2014	2010-18	6.98	6.80	7.21

Legenda: DEF 2011 - Documento di Economia e Finanza 2011
DEF 2014 - Documento di Economia e Finanza 2014
Reproducible Codes: : https://github.com/SAO65/DEF_2014/blob/master/DEF_2014.Rmd

Source: DEF, 2011; DEF, 2014

8. Conclusions

Among public health policy researchers worldwide the difficulties in the ongoing implementation of the Affordable Care Act in the USA, coupled with the economic recession in some EU countries, rises concerns on the sustainability and the role of Government financing in securing some of the most important achievements, such as universal coverage, in the most advanced health care systems in the world.

In the year 2000, the Italian Health Care System ranked 2nd among 191 countries with respect to the overall health system performance, health needs recognition, non-discrimination, equity, health information, healthcare planning, accessibility to healthcare and medicines, health workforce education and health monitoring, assessment and accountability. These achievements have been hitherto financially and economically sustainable, but characterized by the large role played by Government versus out-of-pocket and privately insured financing.

This paper argues that the public financing component of the Italian Healthcare System has become financially and economically unsustainable for four reasons:

1) the first reason is that, in the period 1997-2010, following the reform of the Health Care System, Italy has increased both its propensity to spend in health care and the percent of such spending publicly financed. The result is that the growth of public health financing has exceeded the growth rate of the GDP by as much as 1.8 times in the same period;
2) the second reason is that, in the second trimester of 2014, Italy is one of the few European economies which has not recovered yet from the 2008 economic crisis and is still suffering from a negative GDP growth, with the second largest Sovereign Debt in the world after the USA (OECD, 2014). The percentage change of the GDP in I-2014 is -0.1% compared with the previous quarter, and -0.5% compared with the same quarter of the previous year (ISTAT, 2014);
3) the third reason is that Italian national financial plans of the *Documento di Economia e Finanza 2011* and *2014* are characterized by a striking overestimation of the expected GDP versus the actual one: the DEF 2011 registered an actual GDP of 1,548,816 m€ in 2010 and predicted an expected GDP of 1,671,939 m€ (sd 69,717) in the period 2011-2014; the DEF 2014 registered an average actual GDP of 1,564,692 m€ (sd 11,879) in the period 2010-2013 - lower than the expected GDP of the DEF 2011 - still it predicted an expected GDP of 1,682,060 m€ (sd 80,511) in the period 2014-2018 - *higher* than the expected of the DEF 2011;
4) the fourth reason is that such systematic failure to achieve the target GDP is paired by the systematic policy of increasing Public Non-Health Financing and decreasing Public Health Financing. Public health expenditure as percent of the GDP has been reduced from the actual 7.33% in 2010 to an average of 7.19% (sd 0.03) in the period 2011-2013, and will be further reduced to 6.92% (sd 0.1) in the period 2014-2018.

This unsustainability is clearly result of the enduring financial and economic crisis which, on one hand, reduces the available resources and, on the other hand, obliges the Ministry of Finance to reallocate public expenditure towards those social needs which are more urgent, such as extraordinary unemployment relief funds (*Cassa Integrazione*), pension benefits and the payment of interest on Sovereign Debt.

It is clear that if the expected GDP in the period 2014-2018 is below expectations, and the Ministry of Finance is not able or willing to reduce non-health financing, he will be forced to further reduce health expenditure to maintain unvaried the fraction of GDP allocated to health financing. This situation will render the public component of the Italian Healthcare System unsustainable.

In this context, *improving the sustainability* of the Italian healthcare system is presently evoked by policymakers as a justification for cutbacks on health expenditure and the reallocation of financial resources to other sectors. This paper proposes an analytical framework of economic and financial sustainability with the purpose of introducing a rational approach which should act as a guarantee of a socioeconomic and epidemiological effort towards an integrated approach to health planning (Gruen *et al.*, 2008).

9. Discussion

This approach to economic and financial sustainability of public health care financing encounters some limits when the dynamic uncertainty of a socioeconomic downturn and an aging population (Tamiya, 2011), such as Italy is experiencing in 2014, could induce a complete modification of the model of health care financing from public to a mixture of public and insured private, such as the Affordable Care Act in the USA. However, we believe that at the moment in Italy, given the marginal role of insured health coverage (4.2%) and the high proportion of out-of-pocket spending (18%) (OECD, 2013), such reduction in public financing could have the effect of increasing out-of-pocket health financing which, in times of crisis, could render health coverage, universal only in principle, with adverse epidemiological consequences for the old (Kenneally and Walshe, 2012) and less well-to-do households (Shibuya, 2011).

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