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FINANCING UNIVERSAL ENROLLMENT TO SOCIAL HEALTH INSURANCE: LESSONS LEARNED FROM COLOMBIA

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Abstract

The paper discusses the financing of the health care reform implemented in Colombia since the early nineties and explains the obstacles faced on the way to universal enrollment to social health insurance. The paper describes the reform and the sources created for its financing. It presents the observed trends in the financing of the insurance schemes created by the reform, identifies the obstacles faced on the way to universal enrollment and uses an accounting model to weigh each of these obstacles and explore how enrollment would have evolved under alternative scenarios. This retrospective accounting leads to prospective discussion that identifies the lessons to be learned from the experience of a middle income country like Colombia in the implementation universal health insurance. The main lessons are that structural informality in the labor should be carefully considered while designing a financing scheme that relies (even if partially) on payroll based contributions, and that fiscal constraints can severely limit a country's capacity to reach universality. Institutional constraints and administrative processes needed to run a health insurance scheme should not be overlooked. A main challenge is how to enroll independent workers and effectively target subsidies for those without capacity to pay.

Key words: social health insurance, health reform, financing, enrollment, informality.
JEL Classification: H51, H75, I12, I18, J32.

Introduction

In the world of health policy there has been much interest in the reform Colombia has implemented since the nineties, because of its scope and objectives, the depth of the institutional transformations involved, and its innovative approach. The reform introduced a universal health insurance scheme, and allowed competition among public and private insurers and health service providers. In order to achieve universality, it created two insurance schemes: One for formal workers, financed with payroll contributions, and a subsidized one for the informal and poor. A standard health benefit package was defined, and the goal was set that all Colombians should have the right to this package.

Implementation of the reform was designed to be gradual, not least because of the amount of financial resources needed for universality. Enrollment to the mandated health insurance was projected to increase during a transition period going from 1994 to 2001, by when, it was expected, universality should have been achieved. During this period, people not yet insured would continue to receive health care services in the terms and conditions of the old system. However, thirteen years after the approval of Law 100 of 1993 (the act that introduced the reform), universality had not yet been achieved. Overall enrollment went from an estimated 20% of the population in 1993 to 76% in 2006. Current official estimates indicate that the goal of universal enrollment will be finally achieved in 2009.[1]

After more than a decade of implementation there are many lessons to be learned from the Colombian health care reform. The measurement of its impacts is an ongoing task. However, the size of the benefits, and the extent to which they are shared by the whole population, depend crucially on universal enrollment, a feature of the reform that will arrive at a later time than originally planned.

This paper will focus specifically on the universal enrollment to the mandated health insurance in Colombia. The purpose is to identify, measure and discuss the obstacles that have delayed the fulfillment of this objective. The first section after this introduction describes the reform, the sources created for its financing. The second section explains the observed trends in the financing of the insurance schemes created by the reform, and identifies the obstacles that appeared on the way to universal enrollment. The third section uses an accounting model to weigh each of these obstacles and explore how enrollment would have evolved under alternative scenarios. This retrospective accounting leads to prospective discussion in the fourth section that identifies the lessons to be learned from the experience of a middle income country like Colombia in the implementation universal health insurance, and concludes.

1. The reform

Until the early nineties the Colombian health sector was made up of various independent "subsectors". Social Security offered health insurance to formal workers. There was also the "private" subsector, composed by private clinics and insurance companies, offering coverage to those with enough purchasing capacity. Finally, there was the public sector, made up of a network of state owned hospitals and health facilities, in charge of providing medical services and other public health activities.

[1] Under Colombian law the government has to submit yearly to Congress a four year budget projection (the so called *marco de gasto de mediano plazo*). The one submitted in 2006 includes the estimated cost of universality. Also, a new law was approved in January 2007 that includes detailed provisions on the financing sources needed to achieve universality by 2009.

By the early nineties the coverage of the health services in the country was a major concern. An estimated 20% of the population was enrolled in the social security institutions, 10% was able to buy private insurance or pay directly for the services, and the remaining 70% had to rely on the public network of health facilities, which in principle should provide services to poor people for free, and charge those with capacity to pay.

However, the real coverage of the interventions delivered by this public network was considered too low. For half of those who didn't receive care, the reason was lack of money to pay for the treatment. Studies based on national household surveys found that health expenditure as a percentage of total spending was five times higher in the poorest households in comparison with the wealthiest.[2] And there were also great differences in public expenditure in health across the different regions of the country.[3]

The possibility of receiving adequate care in case of need depended too much on employment status, on the employer, or on having the capacity to pay for private insurance or care. And there were complaints about the quality of the services delivered by the public network of hospitals as well as those of the National Social Security Institute (*ISS*), and about their efficiency. In this context, and in response to the previous problems, the two main changes that took place in the health sector during the nineties were decentralization and the reform brought forth by Law 100.

The process of decentralization started in the late eighties with laws that mandated the transfer of an increasing portion of the revenues from the national tax revenues to the local governments (departments, and municipalities), while passing to them more tasks and responsibilities in the provision of health services.[4] The following year, in 1991, the new Constitution mandated more increases in the transfers to local governments (including those for the health sector), and said that the provision of the "health services shall be decentralized". In 1993, Law 60 developed the constitutional mandate, established the formulas for the increasing share of central government revenues that were to be transferred to local governments mainly for health and education, and set new rules for their distribution across municipalities and provinces. These distribution rules were applied until 2001, when fiscal constraints led to a Constitutional amendment that decoupled the growth of the transfers to the local governments (including those destined to the health sector) from the general tax revenues.

[2] Molina et. al. (1994).

[3] In 1990, the difference in public spending in health in per capita terms was from 5.5 to 1 between the province that spent the most and the one that spent the least, according to the report of the Harvard Mission for the Implementation of the Reform.

[4] Law 12 of 1986, developed by decree 77 of 1987 and Law 10 of 1990.

1.1 Law 100

In December 1993 the Colombian Congress approved a comprehensive social security bill, later to be called Law 100, that included one chapter on pensions (which introduced capitalization accounts as an alternative to the pay-as-you-go system), and another one on health. In regard to the health sector, Law 100 did the following:

After a transition period of eight years, the whole population of the country should have health insurance with a standard and regulated coverage. Two schemes were created. The contributory regime (CR), which is mandatory for formal workers and people with capacity to pay, and the subsidized regime (SR), for the unemployed, informal and poor. Both schemes include coverage for family members. People who have the means to do so are free to buy supplementary insurance, but are in any case required to enroll in the contributory regime.

The reform created the *EPS* (*Entidad Promotora de Salud*), which are insurance and managed care institutions that organize and provide a standard set of health services. The *EPS* can either provide the services directly and/or contract them with public or private hospitals. The reform also mandated that an increasing portion of the public money for health care be directed to the *EPS*.

Law 100 created a central fund, called *Fondo de Solidaridad y Garantía* (*FOSYGA*), that pools all health payroll based contributions as well as other sources earmarked for the health sector. It is the treasury of the health part of the social security system. The law also raised the contribution rate for health from 7% to 12% of workers' salary or enrollee's income.[5] This contribution is mandatory even if the worker is already covered by his or her spouse. *FOSYGA* has a "compensation account" that receives 11% of the 12% health payroll contribution. This account pools the money and then distributes a risk adjusted capitated rate to the various *EPS*, according to the population that chooses to enroll in each of them. This rate, called *unidad de pago por capitación* (*UPC*), is independent of income and varies only with age and sex of each individual. It is higher for children under 1, for adults older than 60, and for women in fertility age.[6]

The financing scheme described above implies that some individuals contribute an amount of money that is greater than the value of their and their family's capitated rates (*UPC*), and thus are "subsidizers", while for other people these *UPC* are worth more than their contribution, and thus are "subsidized". The scheme implies that people with many children, low incomes, in old age or women in fertility age tend to be subsidized, while high income male young singles tend to be subsidizers.

[5] 8% is paid by the employer and 4% by the employee. Law 1122 of 2007 raised the total contribution to 12.5%, with 8.5% paid by the employer.

[6] There is also a separate capitated payment for the funding of health promotion and prevention activities, and another one for workers' paid sick time, of which the *EPS* is responsible. The compensation account also reimburses employers for the paid maternity leave, which is mandatory under Colombian labor laws.

It was recognized that a significant part of the population lives in a context of poverty and informality, so Law 100 mandated that this population was given a subsidy "in kind", in the form of an insurance card. The selection of beneficiaries was to be done following explicit targeting criteria (a means test).

The reform created a standard benefit package of medical services, called *Plan Obligatorio de Salud* (*POS*) (mandatory health plan, in English). The average cost of the *POS* for each enrollee should match the value of the corresponding capitated payment (*UPC*) that the *EPS* receives for providing it to him or her. When fully implemented in 2001, said Law 100, the content of the *POS* should be the same for all Colombians, either in the contributory or in the subsidized regime.[7] [8]

In the contributory regime and in the subsidized one, people must be allowed to choose *EPS*, and under certain conditions also to chose provider within the network of the *EPS*. This means that the *EPS* have to compete for enrollees, and the providers have to compete for being included in the *EPS* networks. It is forbidden for the *EPS* to reject any applicant that wants to enroll.

Law 100 brought forth deep changes that could not be carried out at once, so it mandated a gradual implementation. While universal enrollment was achieved, people transitorily uninsured would continue to have access to the government owned hospitals in the terms and conditions of the old health system. Also, at the start, the content of the benefit package (*POS*) in the subsidized regime would not contain all the interventions it had in the contributory regime, and so its cost (*UPC*) would be lower. The content of the benefit package in the subsidized regime would be expanded gradually (and the *UPC* adjusted accordingly), until being equal to the *POS* in the contributory regime in 2001, by when universal coverage should have been achieved.

The Law also mandated what was called the gradual "transformation of subsidies from supply to demand". This means that the money that local governments previously had in their budgets for the provision of health services in government owned hospitals, would be gradually shifted to pay for the subsidized premiums of people enrolled in the subsidized regime.

1.2 Sources of funding

In what has to do with the contributory regime, the main source of financing was an increase in the health contribution rate levied on payrolls, from 7% to 12%. This was simultaneous with the

[7] The *POS* includes a comprehensive list of medical interventions and medicines, and also most public health activities that are carried out on an individual by individual basis (e.g. immunizations, preventive visits, and screening for certain diseases). Other public health activities that are performed collectively or that are done on an individual basis but have high externalities, like vector control, educational campaigns and control of environmental risk factors, included in the *Plan de Atención Básica PAB*. The latter should be entirely financed and provided (or contracted) by local governments with money from general taxes or transfers from the central government.

[8] The *POS* insures health risks different from occupational hazards. The latter are covered through a different insurance scheme.

introduction of family coverage, which boosted enrollment as the workers' families joined the system. So at first the increased revenues for social security in health were destined to pay for the coverage of a larger population. From then on, the contributory regime was designed to be self-sustained: the more enrollees, the more contributions there should be.[9]

Universal enrollment was to be achieved with the subsidized regime. This was to be financed with the new sources of funding created by both the decentralization laws and the reform. As explained above, Law 60 of 1993, the decentralization act, had mandated that an increasing share of national tax revenues be transferred to the local governments. That share should rise from 36.1% in 1993 to 46.5% in 2001. The local authorities were obliged to invest in the health sector not less than 22.4% of the transfers received.

Soon after the approval of Law 60, Law 100 mandated that at least one third of the transfers destined to health were allocated to the subsidized health insurance program. This was the first step in the so called transformation of subsidies from supply to demand, by means of which the money previously allocated to public hospitals was shifted to funding the subsidized insurance program. In 1996, law 344 accelerated this process, by gradually increasing the share of the health transfers that had to be allocated to the subsidized health insurance. With the formulas in laws 100 and 344, by 2001 two thirds of the transfers received by local governments with destination to health were to be allocated to "demand subsidies" (subsidized regime).

Law 100 also created a special account in the health social security treasury (*FOSYGA*), called the solidarity account, for running a co-financing scheme that funds, jointly with local governments, the subsidized regime. 1% out of the 12% health payroll contribution goes to this "solidarity account".[10] Besides this percentage point coming from payrolls, the law entitled the solidarity account to other earmarked tax sources. There is also a *pari passu* in Law 100 by means of which the central government should allocate 1 peso to the solidarity account for each peso collected from the above mentioned 1% contribution.

The law created the above sources of financing and stated that universal coverage should be achieved by 2001, with equal content of the mandatory health plan (*POS*) in both the contributory and subsidized schemes. However, it did not state explicitly that the sources created would be sufficient for achieving universal enrollment, and allowed for the possibility of other transfers from the central government to the new health system if Congress approved so the annual budget laws (in addition to the above mentioned *pari passu*). For this reason the article in Law 100 that refers to universal enrollment in 2001, rather than the result of a financial projection, could be viewed as the statement of a long term policy objective.

The following section shows how the financing of the health sector evolved during the decade that followed the approval of the reform, explaining the factors that determined the amount of resources committed to the health insurance schemes created by the reform.

[9] Sustainability, however, depends crucially on two parameters: the average number of family members per contributing worker, and the average salary or income from which contributions are paid.

[10] Law 1122 of 2007 mandated, starting in February 2007, raised the contribution rate to 12.5%, of which 1.5% should go to the solidarity account.

2. Observed Trends in Financing

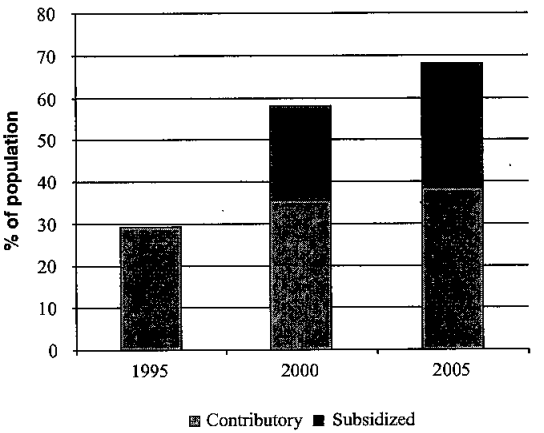
The implementation of the decentralization laws and the health care reform lead to a significant increase in the amount of public resources destined to the heath sector. As can be seen in Table 1, public expenditure as a percentage of GDP increased by 1.7% between 1993 and 2003, and social security spending (originating in payroll based contributions) did so by 1.9% in the same period.[11]

Table 1
Health Financing Indicators
(percentages)

	1993	2003	Difference
Total health expenditure / GDP	6.2	7.8	1.5
Total public expenditure in health / GDP	1.4	3.1	1.7
Social security spending in health / GDP	1.6	3.5	1.9
Private expenditure in health / GDP	3.3	1.2	-2
Public expenditure in health / Total health expenditure	21.9	39.6	17.7
Social security spending in health / Total health expenditure	25.7	55.5	29.8
Private expenditure in health / Total health expenditure	52.3	15.9	-36.4
Annual health spending per capita (in US$)	112	136	

Source: Barón (2007).

Figure 1
Enrollment in Health Insurance



Source: DHS surveys.

[11] These figures include all categories of health spending, and not only health insurance.

The number of people enrolled in social health insurance grew very fast after 1992, then stagnated from 1999 to 2002, and has increased again since 2003. Overall enrollment went from an estimated 20% of the population in 1993 to 76% in 2006. Current estimates indicate that universal coverage will be finally attained in 2009. Even then, however, the content of the benefit package in the subsidized regime will not be as comprehensive as the one of the contributory regime, and so the capitated payment for the former will be lower.

Four categories of reasons explain the amount of resources devoted to social health insurance and thus the enrollment figures observed between 1993 and 2006.

The first is macroeconomic performance. Economic growth has en effect on the level of employment, and thus in the number of people enrolled in the contributory health insurance. And growth also has an effect on tax revenues, which in turn are linked to transfers to local government and to the funding of the subsidized health insurance program.

The second one is fiscal policy. Some of the sources of financing for the heath sector have to be included in the yearly budget laws, and fiscal constraints can lead to budget cuts in certain categories of health spending. These spending ceilings sometimes apply to earmarked sources of funding, in which case part of the money generated by the source is saved and not spent. Moreover, severe fiscal constraints can lead to decisions of changing altogether the formulas included in previous laws for the transfers to local governments and to the health sector.

The third is structural informality in the labor market, since the number of people enrolled in the contributory regime depends not only on the overall level of employment, but on the proportion of workers that are in the formal sector and comply with the labor and social security regulations.

The fourth refers to institutional constraints. This has to do with the incentives for local governments to increase enrollment and their political will to allocate resources to the subsidized regime and also with the quality, efficiency and cost of the administrative processes needed to adequately run the universal health insurance program.

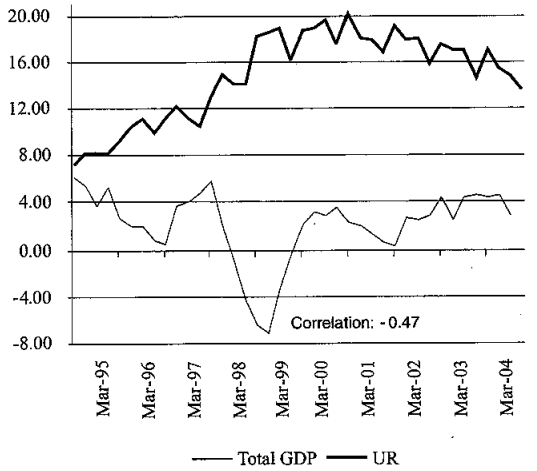
2.1 Macroeconomic performance

Since the beginning of the decade of the nineties, Colombia has undergone three distinct periods of economic growth. Average annual growth rate of GDP was 4.3% between 1991 and 1997, 0.2% between 1997 and 2001, and 3.8% between 2001 and 2005. As can be seen in Figure 2, the unemployment shows a negative correlation with economic growth.

Economic growth also had an impact on fiscal performance. The growth in the central government tax revenues has followed that of GDP, as can be seen in Figure 3. Tax revenues were equivalent to 10% of GDP until 2001 when they accounted for 13 of GDP%. That share then continued to rise up to 15% in 2005.[12]

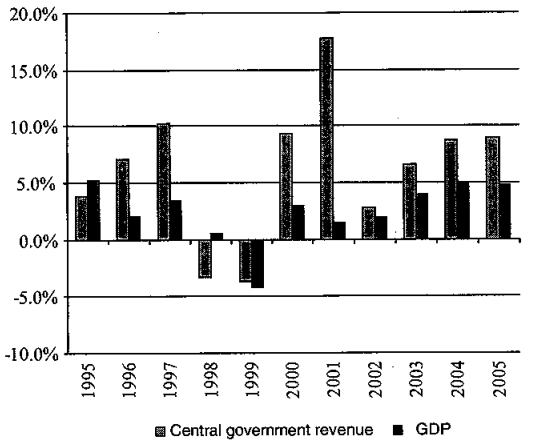
[12] Several reforms to the tax code and efforts on the part of the tax administration explain this increasing share.

Figure 2
Urban GDP Growth and Unemployment Rate: 7 Cities



Source: DANE.

Figure 3
Growth Rate of GDP and Government Revenue (in real terms)



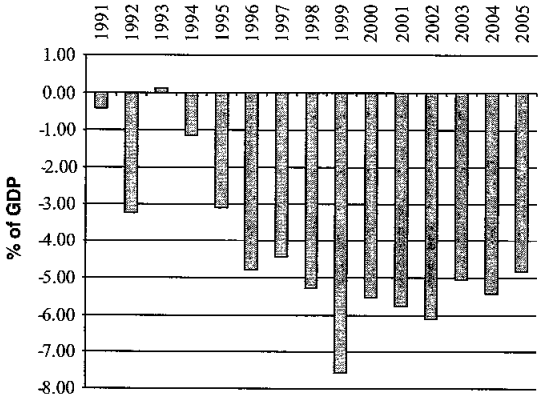
Source: Minhacienda, DANE.

2.2 Fiscal policy

The commitment to transfer an increasing share of the national tax revenues to the local governments, plus the need to allocate an increasing share of the central government's budget to pay for pensions, contributed to an increasing fiscal deficit, as can be seen in Figure 4. The chronic fiscal deficit observed during the mid and late nineties led to a mounting public debt (50% by 2002). From 1998 the country and the government faced external financing constraints. Starting that year there was a financial crisis and a severe recession.

In this context the government signed an agreement with the IMF and committed to reduce the fiscal deficit. As part of this adjustment program, a constitutional amendment to the decentralization transfers, and new act (law 715) that replaced law 60, were approved in 2001. The formulas for calculating the transfers to local governments were changed. From 2002, they were no longer fixed as a share of central government revenues. Rather, they were set to grow between 2% and 2.5% a year in real terms regardless of the national treasury's revenues.[13] These amendments also fixed the share of the transfers received by local governments that had to be spent on health at 24.5% and, within this category, how much should be spent in the subsidized regime. Starting in 2002, 47% of health transfers received by local governments should be spent in the subsidized

Figure 4
Central Government Deficit
(% of GDP)



Source: Minhacienda.

[13] The formulas set by the Constitutional amendment of 2001 expire in 2008. More recently, in June 2007, a new amendment was approved that modifies slightly and extends these formulas until 2016.

insurance program, and that percentage would then rise by approximately one additional percentage point a year. The formulas for calculating total transfers to local governments and the part corresponding to health, prior and after 2001, lead to the trend depicted in Figure 5.

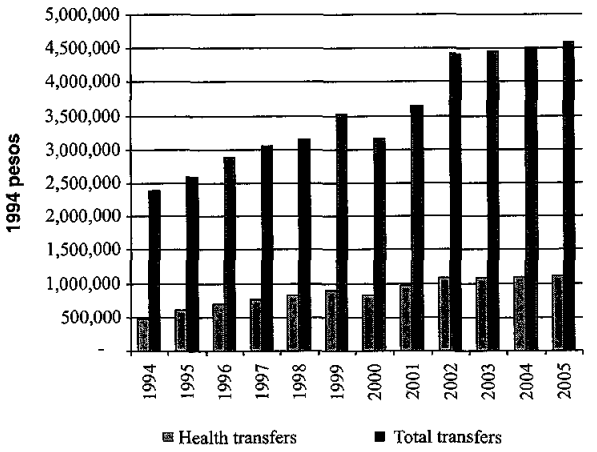
Law 100 had committed the central government to include in its budget certain amounts to FOSYGA. As explained earlier the solidarity account in FOSYGA collects the 1% contribution levied on payrolls, and a matching amount, called the *pari passu*, should have been allocated by the central government.

The pressing needs to control spending and reduce the fiscal deficit, however, lead the national government to make two kinds of decisions. First, it sponsored new legislation to reduce the amount to be committed in the *pari passu*. The Constitutional Court, however, overturned these changes. The second decision was taken in each years budget laws. Not all the *pari passu* was transferred each year to the solidarity account but only part of it. And not all the revenues generated by the 1% were allowed to be spent.

2.3 Informality in the labor market

Enrollment in the contributory regime depends crucially on the percentage of both dependent and independent workers that are in the formal sector. Among dependent workers the enrollment rate rose at the outset but then stalled. However, the percentage of independent workers enrolled in the

Figure 5
Total Transfers and Health Transfers in Real Terms



Source: DNP.

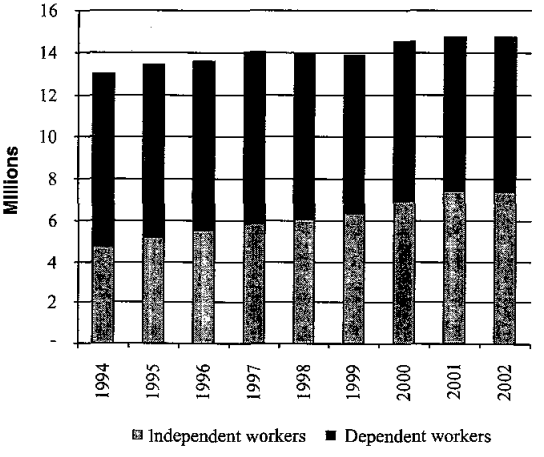
Table 2
Budget Restriction on the Solidarity Account of FOSYGA

	% of payroll 1% contribution that was allowed to be spent	% of *pari passu* that was effectively committed
2000	94.20%	18.40%
2001	76.30%	18.20%
2002	64.70%	17.90%
2003	43.30%	22.10%
2004	80.90%	44.50%
2005	81.90%	40.90%

Source: FOSYGA Budget.

contributory health insurance did not increase after the reform, and remained at very low levels (between 2% and 3%). Moreover, since the nineties the share of the labor force that reports being dependent or salaried has decreased (from 64% to 50%), while that of independent workers has risen (from 36% to 50%).

Figure 6
Estimated Employed Colombians



Source: DANE.

For those not enrolled in the contributory regime that are poor, informal or unemployed, the law created the subsidized regime. Eligibility for this subsidy was to be determined by a means test called *SISBEN* (*Sistema de Indentificación de Beneficiarios*), which yields a "poverty score" based on information on incomes, education level of household members and asset ownership. After the initial implementation of the survey, and its updating from 2002 to 2005, two thirds of the whole Colombian population was classified as eligible.

2.4 Institutional constraints

According to the reform, local governments had to shift the budget previously allocated to hospitals towards financing the new subsidized health insurance program. This was the transformation of subsidies from supply to demand mandated in Law 100 and Law 344. These regulations, however, left open a loophole (there was a long list of eligible expenses that could be deducted before applying the transformation formulas). By 2001 local governments should have allocated 60% of the transfers received for health, according to the laws. But in practice it was less than that. The new decentralization act (Law 715) approved that year resumed the transformation process with that figure at 47%.

3. Explanatory Factors

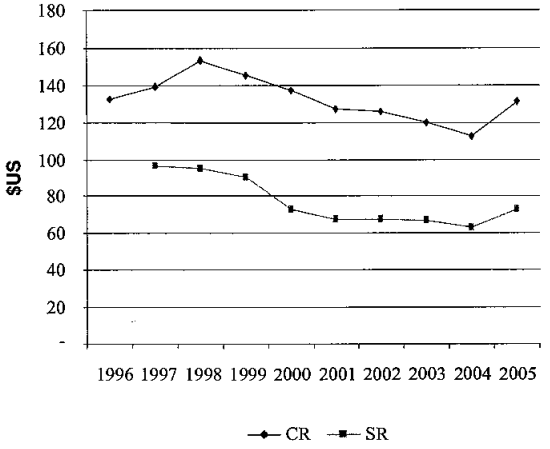
In this section we construct and use an accounting framework to calculate what it would have taken, in terms of the factors that determine health sector financing, to achieve universal enrollment with the sources of funds created by the reform.

The starting point is the cost of universal enrollment. It is straight forward to calculate this cost as the multiplication of the capitated rate (*UPC*) times the size of the population.[14] As explained earlier, the capitated rate in the contributory regime (CR) depends on age and sex.[15] In the subsidized regime (SR), however, it is flat. The rate in the SR is lower than in the CR because the benefit package or health plan in the subsidized scheme does not include as many interventions as it does in the contributory insurance. Law 100 had mandated that the content of the benefit packages in both schemes should be gradually equalized, and should be identical by year 2001. That has not happened yet, however. Figure 7 shows the annual capitated payment in USD while Figure 8 shows it in constant pesos of 1993. In 2005 the CR capitated rate was equivalent to 5.6% of the income per capita.

[14] We use the population projections done by the national statistics agency (*DANE*), based on the census of 1993.

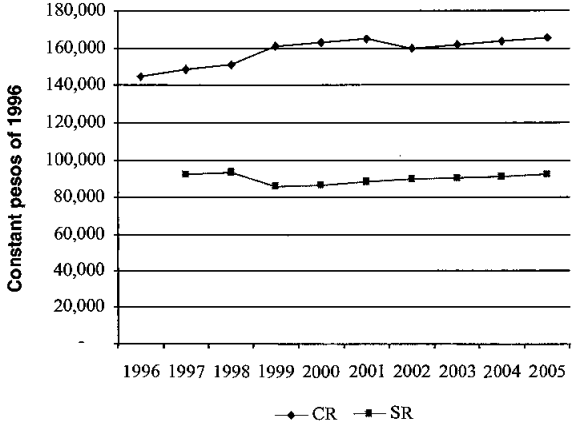
[15] Since the *UPC* varies with age and sex, we calculate a weighted average of the *UPC* in the case of the contributory regime.

Figure 7
Annual Average Cost Per Capita
(US dollars)



Source: Ministry of Social Protection.

Figure 8
Annual Average Cost Per Capita
(pesos)



Source: Ministry of Social Protection.

The total cost of universal insurance arises from multiplying the average per capita cost by the size of the population. However, since the per capita costs are different, the figure will depend on the share of the population that is enrolled in the CR relative to the SR (unless we assume that the benefit packages are made equivalent and thus the capitated rate in the subsidized scheme is raised to match the one of the contributory regime). In what follows, we will calculate both: the cost of universal enrollment with equal benefit packages, and not equal benefit packages.

The accounting framework we use identifies and models the interactions between all the factors that determine the dynamics of the sources of financing created by law 100. Economic growth determines aggregate employment. We model this interaction through the elasticity of employment to GDP growth. We then multiply aggregate employment figures by the fraction of workers that make contributions to social security. That way we arrive at the figures of the number of workers in the contributory regime. Multiplication by average number of dependents per worker yields total enrolled population in this scheme. The number of workers in CR also has an influence on the revenues collected by the FOSYGA solidarity account from the 1% contribution for co financing SR.[16] Separately, economic growth determines total tax revenues of the central government (we treat the ratio of tax revenues to GDP as an exogenous parameter). To this figure, we apply the formulas of the decentralization laws to arrive at the amount of resources committed by local governments to financing subsidized health insurance.[17] The Figure in the Annex depicts the interactions modeled in the accounting framework and lists the parameters used.

Calculations are done for two distinct periods: 1996-2001 and 2001-2005. There are two reasons for this timeframe. One is that the law itself had set the date of 2001 for achieving the goal of universality, and the other is that in that year the decentralization laws were changed completely, and with them the formulas for calculating the transfers that local governments receive for spending in health insurance.

Table 3 shows the baseline. The figures under "different benefit package" are based on the (differential) capitated rates that were effectively observed during these years, and thus are calibrated to reproduce the observed trends in enrollment.[18] The figures under "equal benefit package" calculate enrollment under the hypothetical scenario that the capitated rate in the SR had been raised at the outset to match the value of the rate in the CR.

[16] Observed revenues from the 1% contribution are a constant fraction of nominal GDP (holding constant the formality rate, that is the fraction of the employed population that actually makes contributions to CR).
[17] Local governments sometimes allocate resources to subsidized health insurance over and above what is mandated by the decentralization laws. The amount is relatively small but nonetheless it is accounted for.
[18] There are minor discrepancies between these figures and the ones reported in administrative reports for three reasons. 1) We treat and model the special insurance schemes, such as the ones of the teachers in public schools and of the military, as if they were part of the regular CR. 2) In the SR, we divide the resources available in a given year by the UPC, which yields average number of enrollees in that period. In practice, however, enrollment is expanded in the middle of the year, which yields a higher enrollment figure by the year end. Local governments can also save money in a given year, to be spent in the following one. 3) A small proportion of enrollees are in a special version of the SR that has less coverage and a lower UPC.

Table 3
Baseline: Observed Trends in Enrollment (% of population)

	Equal benefit package		Different benefit package	
Base line	2001	2005	2001	2005
Enrollment Contributory Regime	33.00%	34.30%	33.00%	34.30%
Enrollment Subsidized Regime	12.80%	18.30%	24.40%	33.60%
Total Enrollment	45.80%	52.50%	57.40%	67.90%

Source: Own elaboration.

From this baseline scenario four simulations are done. In the first, it is assumed that the rate of growth of GDP is 5% in both periods. Tax revenues are then calculated, and from them the decentralization transfers for health and the number of people it would have been possible to enroll in the subsidized regime.[19] Using the elasticity of employment to GDP, the total number of people employed is calculated, and from it, the number of people that would have joined the contributory regime in that "high growth" scenario.

The following simulation restores all the values to baseline (consistent with the GDP growth effectively observed), and then simulates what would have happened had there not no budget ceilings for the FOSYGA co-financing of the subsidized regime. That is, if the whole revenue from the 1% contribution would have been spent and the national government had committed the full amount of the *pari passu*. This one is called the "no fiscal constraint scenario".

The next one restores values to the baseline and then assumes that there is higher formality in the labor market. In the baseline approximately 60% of dependent workers and 2% of independent workers make contributions for health insurance. In this simulation each of these shares are raised by 10 percentage points (to 70% for dependents and over 12 for independents). This one is called the "higher labor market formality scenario".

The final simulation, after restoring the values to the baseline, assumes that the local governments shifted the 60% of the received health transfers to demand subsidies in 2001, and 80% in 2005.[20] That is, that they effectively cut the funding for supply of health services and used that money to subsidize demand by enrolling and paying for more people in the subsidized regime. This last one is the "transformation of subsidies" scenario.

[19] In the high growth scenario we assume there is no reform to decentralization transfers in 2001 and thus continue to apply the "old" formulas until 2005. The rationale for this assumption is that if the economy had performed well, it is unlikely that there would have been such a fiscal reform.
[20] This is a higher percentage than what is legally required.

Table 4
Enrollment Scenarios

	Equal benefit package		Different benefit package	
	2001	2005	2001	2005
High economic growth				
Enrollment Contributory Regime	35.30%	38.60%	35.30%	38.60%
Enrollment Subsidized Regime	14.50%	21.20%	27.60%	39.00%
Total Enrollment	49.90%	59.80%	63.00%	77.60%
No fiscal restriction				
Enrollment Contributory Regime	33.00%	34.30%	33.00%	34.30%
Enrollment Subsidized Regime	16.20%	22.10%	30.80%	40.70%
Total Enrollment	49.20%	56.40%	63.80%	75.00%
Higher labor market formality				
Enrollment Contributory Regime	41.20%	42.70%	41.20%	42.70%
Enrollment Subsidized Regime	12.80%	18.30%	24.40%	33.60%
Total Enrollment	54.00%	61.00%	65.60%	76.30%
Full "transformation of subsidies"				
Enrollment Contributory Regime	33.00%	34.30%	33.00%	34.30%
Enrollment Subsidized Regime	16.60%	24.70%	31.50%	45.40%
Total Enrollment	49.50%	58.90%	64.50%	79.70%
The four scenarios simultaneously				
Enrollment Contributory Regime	44.30%	48.40%	44.30%	48.40%
Enrollment Subsidized Regime	27.40%	39.40%	52.20%	72.40%
Total Enrollment	71.70%	87.80%	96.50%	120.80%

Source: Own elaboration.

As can be seen in Table 4, none of the scenarios by itself would have led the sources created by Law 100 to yield enough resources to achieve universality. Interestingly, all of them seem to yield similar increments in the number of people enrolled. However, the simultaneous occurrence of the four scenarios would have come close of guaranteeing universal enrollment. In the case of "different benefit package" the 100% would have been attained and the spare resources could have been spent in raising the capitated payment and enlarging the benefit package of the SR.

4. Discussion

The financial projections that could be made at the time of the reform were necessarily subject to great uncertainty with respect to the long term trends of key parameters, such as economic growth, tax revenues, employment, informality and health care costs. There exist, nonetheless, technical documents drafted by the government at the time of the reform that contain explicit assumptions in regard the sources of financing created by the reform.[21]

These projections expected more enrollment in the contributory regime than what was eventually observed. The number of individuals actually enrolled was only 54% of what was expected (Gaviria 2006). This has to do with the assumptions made with respect to formality. The original expectation was that by year 2000, 90% of the salaried workers would make contributions to social health insurance, and 85% of independent workers would do so (Gaviria 2006). For the latter, the observed figure was only 4% (Martínez et al 2002).

The accounting model used in this paper shows that the financing of universal enrollment would have taken either very high labor formality rates (as high as 90%), or the simultaneous occurrence of the scenarios described in the preceding section. Thus, achieving the goal of universality would have taken higher economic growth, no fiscal restrictions, commitment on the part of local governments to direct more resources to demand subsides, and a higher formality rate in the labor market (increasing the proportion of workers that make contributions by 10%).

This is precisely the scenario that has been unfolding in the years after 2005. The economy has grown at rates over 5%, fiscal restrictions have been relaxed, the share of workers making contributions has increased (although not by 10%), and the transformation of subsidies has been accelerated by Law 1122 of 2007.[22] Not surprisingly, by 2007 universal enrollment was achieved in 6 of the 32 departments in the country, and it is realistically expected that all of them will do so by 2009 (albeit with different benefit packages).

One feature of the reform was the participation of private institutions in social health insurance. It was believed that it would be in their interest to increase enrollment, because that way they could increase their revenue (Jaramillo 1994). However, there was also a counteracting force: the higher payroll contribution rates both for health and pensions, which increased the cost of being formal. In any case, the significant number of business (especially small ones and rural) that do not comply with labor and social security laws, and the lack of compliance and incentives for enrollment for independent workers, ended up being a major obstacle to the growth of enrollment in health insurance.

An unexpected barrier came from the incentives for workers to enroll. There is anecdotal evidence of people refusing to accept jobs in the formal sector for "fear" of being enrolled in the contributory insurance. One reason is that the latter has copayments, which are in practice

[21] See Martínez et al (2002) and Gaviria (2006) for a discussion.

[22] According to this law, in 2009 up to 65% of health transfers received by local governments should be allocated to SR.

nonexistent the subsidized regime. Another one is that the person entering the CR looses his or her slot in the SR. And people sometimes perceive that the offered job might have a short duration (e.g. in the construction sector). Accepting the job and loosing it soon after would imply entering transitorily in the CR and then loosing all coverage. Although the government issued special regulations in 2005 to address this problem,[23] the solutions are partial, and the issue will only be totally solved when universal enrollment is attained.

In was originally expected that once universality was achieved, two thirds of the population would be enrolled in the CR and one third in the SR. In practice, however, it ended up being the other way around, not only because the number of workers making contributions was smaller, but because the instrument devised for selecting the population eligible for health subsidies ended up yielding a rather broad target.

Law 100 alluded to a targeting instrument to be defined by the government. The *SISBEN* (*Sistema de Identificación de Beneficiarios*) was then devised as a survey to be applied periodically in rural and poor urban households. Municipailties were assigned the task of implementing it. The resulting information it yields is transformed into a poverty score for each household, and those under a certain threshold are considered eligible. *SISBEN* is used simultaneously with other criteria for granting health subsidies (for example, indigenous populations and people displaced from their places of origin because of violence could get the health subsidy without the *SISBEN* requisite).

There were, however, implementation problems. The records of the surveyed population were not adequately kept in most local administrations, nor was the survey updated with sufficient frequency. There was also evidence of strategic bias (households concealing certain information in order to be ranked as poorer). All this led the government, starting in 2002, to redo the whole process again in what was called "the new *SISBEN*". This time the information was collected and centralized in a national database by the National Planning Department and the formulas for the construction of the index were kept secret in order to avoid strategic behavior on the part of mayors and respondents. However, as mandated by Law 715 of 2001, mayors were still responsible for the implementation of the survey; and the same law stated that the greater the number of uninsured individuals in a municipality (according to *SISBEN*), the greater the share of national transfers for health the municipality would get. It was later realized that mayors had a conflict of interest while implementing the new *SISBEN*. It should be noted that the successive changes in the way of selection beneficiaries has not implied yet the exclusion of people already receiving the health subsidy. Even people who were ranked as poor in the original *SISBEN* and not poor in the new one continue to receive the subsidy. In the end the number of people eligible for health subsidies (defined as not being in CR and belonging to levels 1 or 2 of *SISBEN*) was much larger than expected. Estimates based on a household survey implemented in 2003 indicated that there were approximately 12 million Colombians in levels 1 or 2 (Pinto and Hsiao 2007). Because of problems in implementation and changes in the formulas, when the process of the new *SISBEN*

[23] The new regulation says that when a person leaves the SR because of entering the CR, his or her place in the former will be reserved for up to one year in case of becoming unemployed again, and even after a year the process of finding a new slot in SR will be faster and easier.

ended in 2005 there were 27 million Colombians in levels 1 and 2.[24] Given that the current estimate for the Colombian population is 42 million the instrument has yielded a rather broad target.

The fact that growth in enrollment had to rely more on SR than CR had a very important consequence: that there were greater demands on the public budget, and the cost of universality in terms of the public budget was much larger than originally expected. This explains why growth in enrollment stalled during the period of fiscal adjustment.

Besides the issue of the so called transformation of subsidies discussed in the previous section, there were other institutional barriers to enrollment related to the administrative processes needed to run the health insurance scheme. A complete database with the names and identification numbers of the enrollees in each municipality and each insurer (*EPS*) is a basic tool for running the system and allocating the resources. Such a database, however, didn't exist until 2005. For many years this lead to the problem of multiple enrollment (capitated rates paid more than once for a single person, because of overlapping claims by different insurers). For example, in the cross checking of duplicates done in 2002 there appeared to be 900.000 "multi-enrolled" people in the subsidized regime, which accounted for almost 10% of the enrolled population at that moment.

The correction of those duplicates lead to a one time increase in enrollment then. However, the problem continued to be prevalent, as the mechanisms for comparing on a systematic basis the databases across municipalities and insurers were not in place. Although the information systems have improved, especially after the national government started enforcing the obligation of updating the unified data base of enrollment on the part of insurers and municipalities, the problem has not disappeared completely. It comprises both the contributory and the subsidized regime, especially when people move from one to the other (because of unemployment, for example). Incomplete and or inconsistent data bases can lead payers to withhold temporarily certain payments, until it is verified that there are no overlapping claims.

More recently the government has implemented a new system for collecting the contributions to social security (including health and pensions). The monthly forms are filled in a unified manner (via Intemet or call center) an the payment (for the different *EPS* and pension funds that the employees choose) is centralized in a single transaction (debit order). As of June 2008, the use of this system will be mandatory for all employers and independent workers.

The social security authorities have constructed a database with copies of all the payrolls for which there are payments through the new system, which has contributed to improving the quality, timeliness and completeness of the data bases. Besides reducing administrative costs a key advantage of this system is that it helps in controlling the underreporting of incomes, which used to prevalent in the CR. This is so because, if a person underreports his or her salary or earnings in order to pay less, the base from which that person's future pension is calculated will also be reduced, so there is a penalty, so to say, for doing so.[25] Moreover, except for special cases, the system does not let people make contributions to pensions and not health. All of this has helped evasion and underreporting of earnings, especially on the part of independent workers.

[24] Of these, 3 million appeared to be enrolled in the contributory regime because at least one household member had a formal job, which left figure for the eligible population in 24 million.

[25] Paid sick time and maternity leaves would also be reduced in the event of underreporting.

4.1 Lessons learned

An important lesson that can be drawn from the Colombian experience is that the projections of enrollment should be done with realism and caution. It is true that ambitious targets encourage societies to mobilize the resources needed for desirable goals. However, long term forecasts are subject to great uncertainty in regard to the parameters that determine the financing of social health insurance.

Another lesson is that structural informality in the labor market is an important factor that should be considered while designing health insurance schemes in developing countries. Attention should be paid to the effect that payroll contributions have on employment, and on informality. But the greatest challenge is that of enrolling the independent workers. Enforcing mandatory enrollment for this type of workers has proven rather difficult. On the other hand, if their participation on health insurance was voluntary and not mandatory, adverse selection would become a problem, as only those needing costly interventions would enroll and pay the corresponding contributions.[26] Since the legal mechanisms for enforcing mandatory enrollment on the part of independent workers are imperfect, they should be complemented with adequate incentives to attract this population. The challenge, then, is to design these incentives while at the same time avoiding adverse selection.

The issue of independent workers is closely related to poverty and targeting. The design of health insurance acknowledges the fact that a significant part of the population lacks capacity to pay for the contributions, and thus establishes subsidized premiums. Without this component the goal of universality would be unrealistic. However, some independent workers do have the capacity to pay. Identifying them is crucial for attaining universal enrollment. With a targeting instrument that is too narrow equity becomes a major concern as many poor citizens would be left uninsured. But if it is too broad an "lets in" too many non poor enrollees, it raises the fiscal cost of health insurance and eliminates the incentives for other non poor independent workers to contribute. In principle, such an instrument need not be binary, but rather yield a gradual scale of eligibility and subsidies. Implementing this is a major challenge in terms of design and the information required for making it operational.

The barriers related to the labor market arise from the fact that the Colombian health system relies heavily on payroll contributions for its financing. The alternative to payroll based financing is that of general tax revenues. These, however, are subject to other constraints. The Colombian experience also shows that in periods in which financing is limited for the government (because of fiscal deficit and market conditions for sovereign debt) spending in even the most pressing needs can be restricted.

In the end, the cost of social health insurance has to be completely paid for with money from payroll contributions or general taxes, or a combination of both. General tax sources, however, are affected by some of the same factors that affect payroll contributions (macroeconomic performance

[26] There is evidence in Colombia of adverse selection on the part of "independent" workers needing renal replacement, even before law 100 came into effect.

and informality). Moreover, the decision to allocate more resources from general taxes to health insurance faces additional obstacles, because there are many competing demands from other sectors. Solid evidence of the impact of health insurance should help in this process. However, the overall budget constraint of the governments and the changing conditions of international credit markets, sometimes introduce a significant distance between what policy makers would like to do and what they can afford to do.

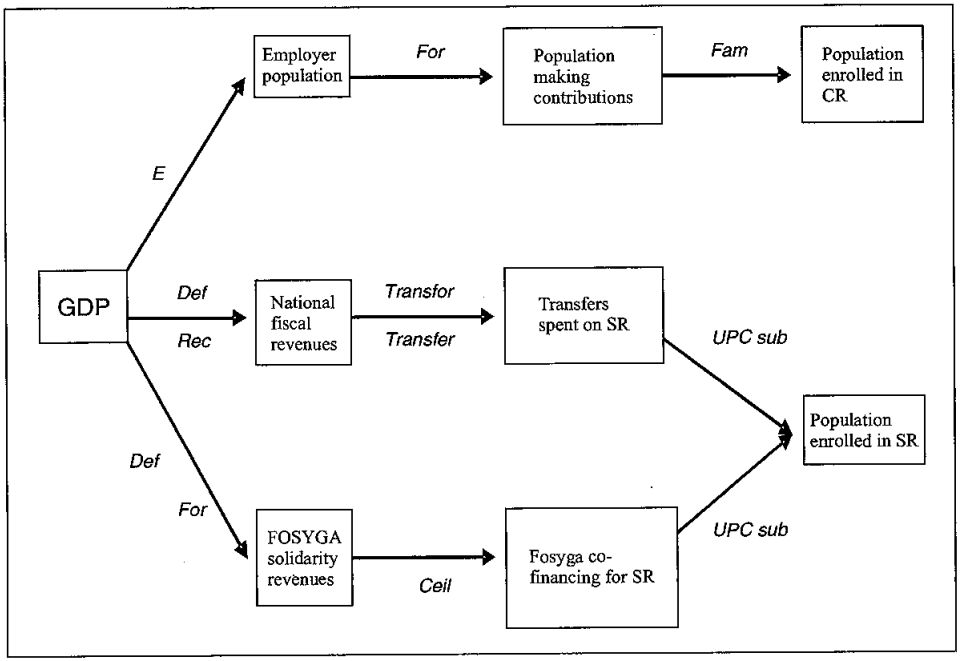
It could be argued that the restrictions that arise from the labor market are more stable and structural in nature, while short term fiscal constraints are cyclical and change with market and macroeconomic conditions. Both labor market informality and the constraints that arise from fiscal policy, however, depend on the general level of development of a country, which is a crucial factor for achieving universality in health insurance.[27]

There are many ways of reaching universality. And the policy options that lead to that objective are open. The context of each country determines the right decision in regard to the content of the benefit package, and thus on the total cost of universal enrollment, the mechanisms for targeting subsidies, and the sources of financing (payrolls, contribution, general taxes). Beyond strictly financial factors, the Colombian experience shows that the administrative infrastructure needed to run the health insurance scheme matters. The capacity to adequately register enrollees, and efficiently run tasks related to enrollment and payment of contributions should not be overlooked while designing a universal health insurance scheme.

[27] A recent report from the World Bank (Hsiao and Shaw 2007) suggests a rule of thumb: "a country is in a good position to achieve universal coverage through social health insurance, when its per capita national product is above US$6.000 per year".

Annex

The Accounting Framework



Parameters:

E: Elasticity of employment to GDP.

Def: GDP deflator.

Rec: Ratio of fiscal revenues to nominal GDP.

For: Percentage of labor force that makes contributions to social health insurance.

Fam: Average number of dependents per worker making contributions.

Transfer: Decentralization formulas that determine the amount of money transferred to local governments for health.

Transfor: Percentage of health transfers received by local governments that is spent on SR.

Ceil: Existence or not of budget ceilings for FOSYGA co financing of SR.

UPCsub: Capitated rate in SR. It is either the observed one for the simulations "different benefit package" or the one of CR in the simulations "equal benefit package".

Source: Own elaboration.

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