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Decentralization of Social Spending in Mexico

Acknowledgment

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Abstract

This paper presents an analysis of the distribution of decentralized social spending in Mexico. It evaluates the distributive criteria used to allocate the Fondo de Aportaciones para la Infraestructura Social (FAIS)*, at the state and municipal level, considering their historic origins and evolution, as well as their analytic properties. Possible formulas for the allocation of the basic education (FAEB) and health (FASSA) funds are also evaluated, by simulating their distributive effect.*

Resumen

Este trabajo analiza la distribución del gasto social descentralizado en México. Se evalúan las fórmulas distributivas aplicadas en la asignación a nivel estatal y municipal del Fondo de Aportaciones para la Infraestructura Social (FAIS)*, considerando su origen histórico así como sus propiedades analíticas. También se evalúan y simulan las asignaciones correspondientes a fórmulas posibles para los fondos de educación básica (FAEB) y salud para la población abierta (FASSA).*

Introduction

In general, the benefits from decentralization may be analyzed in terms of the expected gains from an optimal division of labor between orders of government, where the federal government is well placed to coordinate the allocation of public resources among states and municipalities in an efficient and equitable way, but local governments are closer to the information necessary to spend these resources on specific projects as a function of local needs.

The origins, benefits and constraints characterizing the current process of decentralization in Mexico are more complex. Over this century, the history of territorial administration in the country has been marked by tensions between a centralized and a federate state, but a serious and sustained effort towards the decentralization of social spending has only emerged in recent years. The reasons for this process of devolution have to do as much with the newly gained political autonomy of local governments following the consolidation of competitive electoral processes, as with a concern, within the federal government, with the efficiency of public administration.

Given Mexico's long history of centralization, an important constraint on the process is the established concentration of public capital, human as well as physical. The current territorial concentration of educational, health and administrative infrastructure and personnel, means that the local level may not always, or indeed even generally, be best placed to allocate public resources locally. Another important constraint to decentralization is that local administrations may be less immune to local political interests than central ones. These restrictions apply especially at the municipality level, were it is likely to be precisely the poorest municipalities who most lack the capacity to allocate these resources efficiently and equitably. It is important to be clear about the origins and constraints of the decentralization process in Mexico in order to understand its potential benefits as well as the challenges to be faced. The most immediate benefits can be expected at the central level, in its coordinating function, while the most important challenges must be expected at the local--especially municipal—level, in their implementation function.

In 1995, at the beginning of the Zedillo administration, the federal government announced an important series of institutional reforms aimed at the decentralization of public spending, under the title of *New Federalism*. In addition to various fiscal reforms providing new sources of revenue for the states, this included the creation in 1998 of a new modality of federal

transfers implemented through a newly created budgetary branch: *Ramo 33: Fondo de Aportaciones Federales para los Estados y Municipalities.* This was divided into seven independent funds:

a) *Fondo de Aportaciones para la Educación Básica y Normal* (FAEB),

b) *Fondo de Aportaciones para los Servicios de Salud* (FASSA),

c) *Fondo de Aportaciones para la Infraestructura Social* (FAIS),
   i) *Fondo para la Infraestructura Social Esatal* (FISE)
   ii) *Fondo para la Infraestructura Social Municipal* (FISM)

d) *Fondo de Aportaciones para el Fortalecimiento Municipal* (FAFM),

e) *Fondo de Aportaciones Múltiples* (FAM),

f) *Fondo de Aportaciones para la Educación Tecnológica y de Adultos* (FAETA), and

g) *Fondo de Aportaciones para la Seguridad Pública* (FASP).

The bulk of R33 is social spending (87%), covering education (65%) in FAEB, FAETA, FAM, health and nutrition (11%) in FASSA and FAM, and basic social infrastructure 10% in FAIS, which also includes basic health and education infrastructure. The rest of R33 is assigned for public security (FASP, FAFM), and state government debt (FAFM). Decentralized education and health spending through R33 thus accounts for 70% of education spending and 55% of public health spending. The bulk of these resources are spent by state governments, with only 13% spent directly by municipal governments.

Before this reform, all federal transfers to states for social spending were regulated by "coordination agreements" (*Convenios*), established between the different orders of government, basically through negotiation and precedent. The most important innovation of the new transfer modality (*Aportaciones*) is the adoption of fixed, precise, and transparent budgetary rules. These determine both the overall budgets to be distributed through these funds, giving local governments increased security and anticipated knowledge of the funds available to them, and their geographic distribution, giving the federal government the power--through its choice of allocation criteria--to impose equity and efficiency considerations in the allocation of these funds between, as well as within states. Given the evidence of important inequities in the allocations of social spending in the past (sections 6 and 7), this may be the most important benefit offered by the decentralization process in the short

run. Given the noted restrictions on local governments, the more traditional gains from administrative decentralization can only be guaranteed in the medium and long run, if the reform succeeds in supporting local institutional development and the decentralization of physical and human capital in the administrative, education and health sectors.

Table 1 summarizes the general objectives, budget determination rules, and allocation criteria for the five social funds in R33. Note first that the bulk of education (FAEB, FAETA) and health (FASSA) spending are budgeted and distributed "inertially", on the basis of *established capacity*, in physical and human capital, without consideration of demand, need, or productivity. On the other hand, the budgets of FAIS and FAM (as that of FAFM) are specified as a fixed percentage of federal tax revenues. This eliminates political discretionality and ties these budgets to national economic growth and the state's (including local government's) fiscal capacity. However, it also makes these budgets pro-cyclical, reducing public development spending precisely when the national economy offers less opportunities.

We can also see that three of these funds use public formulas based on relative need. Except for the case of basic infrastructure (FAIS), however, equity and poverty criteria still play a marginal role in this process. In particular, only about 1% of decentralized education and health funds (the adult education part of FEATA and 1% of FASSA) are currently distributed on the basis of equity criteria. Furthermore, FAIS is the only fund which specifies formulas for the distribution of its resources within states, between municipalities, as well as among states.

The rest of the paper is structured as follows. Sectio 2 reviews the allocation formulas used in FAIS, considering their historic origins and evolution, as well as their analytic basis. Section 3 presents a critical review of the FDSM/FAIS formulas. Section 4 considers the allocative implications of these formulas at the state and municipality level. Section 5 tests their robustness to richer informational specifications, including basic infrastructural variables directly relevant to the stated objectives of this fund. Section 6 considers possible formulas for the allocation of the education and health funds, and compares them the implied distributions with current allocations. Finally, section 7 considers some policy implications.

Table 1

FUNDS (% R33)	OBJECTIVES	BUDGET CRITERIA	ALLOCATION CRITERIA
FAEB (62 %)	Basic education	Established Infrastructure and Personnel, Previous Budget	
FASSA (10.4 %)	Health for open population	Established Infrastructure and Personnel, Previous Budget	
		Equity (1%)	Formula: minimal p/c health spending, non-covered population, mortality, poverty
FAIS (10 %)	Basic infrastructure: clean water, sewerage, drainage, municipal urbanization, electricity for rural and poor urban areas, basic health and education infrastructure, housing, rural roads, rural productive infrastructure.	2.5 % Federal Revenue FISE (0.3%) FISM (2.2 %)	Equal state shares (transitional) Formula: illiteracy, education, drainage, electricyty, housing, income.
	Institutional Development	Max 2% FISM	
FAM (3.3 %)	Social Assistance Education Infrastructure	0.814% Federal Revenue	
FAETA (1.7 %)	Technical education	Established Infrastructure and Personnel, Previous Budget	
	Adult education	Formula: Illiteracy, basic education, work training.	

2. FAIS: Allocation Formulas

When the Ramo 33 was created in 1998, the funds for FAIS where drawn from Ramo 26, a budgetary line created in 1983 for regional development and poverty alleviation. From 1990 to 1995, Ramo 26 was used to fund the *Programa Nacional de Solidaridad* (PRONASOL), and both the objectives and allocative innovations of FAIS are best understood against the background of this program. Like FAIS, PRONASOL was largely devoted to basic infrastructural projects, though it also included smaller demand-side programs, some of which are still operating with what was left of R26 after two thirds of its resources were transferred to create FAIS in 1998 (e.g. *Credito a la Palabra*).

PRONASOL was the principal poverty alleviation program of the Salinas' administration, and its budget grew rapidly in that period, from 0.2 % to 0.6% of GDP between 1988 and 1994. One of the program's most notorious elements was its demand-driven allocation mechanism, using the organized participation of local communities, by-passing local government administrations. However, this also limited the program's targeting efficiency-- the poorest communities are generally not the most capable of expressing organized demands--and transparency. PRONASOL was discontinued in 1995, after insistent accusations of political use following the generalized discredit of the Salinas administration. Though the limited information available on the precise allocation of PRONASOL funds has made the empirical corroboration of such claims difficult, some studies have found a clear correlation between municipal allocations of the program's resources and the political affiliation of local governments.[1]

This led to a concern with ensuring transparency and public accountability in the allocation of these funds in the Zedillo administration, and in 1996 a public formula was used for the first time to distribute 60% of R26 between the federal states, through a fund named *Fondo de Desarrollo Social Municipal* (FDSM). The FDSM is the direct antecedent to FAIS, and was in turn preceded by PRONASOL's *Fondo Municipal de Solidaridad*. In 1997 the FDSM absorbed 65% of R26, and a new, clearer and more sophisticated formula was introduced. This formula has remained in use for FAIS in 1998 and 1999, except for a change in weights and the informational basis used to estimate the formula in 1998. However, not all of FDSM/FAIS has been distributed through poverty formulas. Part of the fund has been distributed on the basis of a so-called "equity criteria", guaranteeing every state a fixed and equal proportion of the fund, independently of population size or poverty mass. This

[1] One such study, Molinar y Weldon (1994), concludes: "...what is clear is that politics, and elections in particular, drive the allocation process of Pronasol funds".

can be interpreted as a transitional mechanism, responding to political constraints, protecting the smaller and richer states (and municipalities within these states) from a sudden loss of R26 resources. In 1997 and 1998 31% of FDSM was thus allocated equally to all states, 1% per state. Though the government announced the elimination of this constraint by 1999 (in the 1999 Budget Project), the budget finally approved by the legislature contains a transitional law weakening, rather than discarding, this criterion by half, to 0.5 % per state.

The 1996 formula combined a monetary poverty measure with a non-monetary poverty measure. It is underspecified, however, in various ways. The poverty measure is reported as the FGT index, but the α parameter is never specified, presumably refering simply to the head-count ratio (α=0). The non-monetary measure is a linear combination of adult illiteracy, occupants in houses without drainage, occupants in houses without electricity, and rural population (localities under 5000 inhabitants). The function used to combine the two measures is never specified, but was presumably a simple linear average.

The federal formula used from 1997 onwards is more transparent in its functional form, but also more ambitious in its informational requirements. In essence, it represents an original effort to apply the FGT inter-personal aggregation function to *non-monetary* as well as monetary poverty data. The formula first constructs a poverty measure for each household, defined as the weighted squared sum of five poverty gaps--in income, education, housing, drainage, and electricity (this is called the "Indice Global de Pobreza"), and then sums over these measures to obtain municipality, state, and national poverty indices (called "Masa Carencial Municipal..."). The weights in the household measures are reportedly meant to reflect the costs--public and private--of covering these gaps, but there is some ambiguity in the definitions between costs and preferences. [2] In particular, in addition to defining the public part as "the importance assigned by the government to the provision of these services", the concept applied in the only two of the five weights for which the derivation is explained--income and housing--is the income share dedicated by the first three deciles to food and housing, respectively. In 1998 these weights were changed, reportedly to better reflect public costs (or preferences?). This involved a three-fold increase in the weight for housing, compensated by approximately proportionate reductions in the other four dimensions (Table 2).

[2] "Para establecer el valor de los ponderadores se optó por estimar el costo aproximado para una familia de acceder a esos satisfactores o la importancia que otorga el gobierno a proporcionar el servicio, dado que algunas de las necesidades se satisfacen con el esfuerzo privado de cada hogar y otras constituyen servicios de carácter público". Diario Oficial, 2 enero 1997, p.12.

Table 2

Poverty gaps/Weights (%)	1997	1998
Income	55	46
Education	15	13
Housing	7.5	24
Drainage	7.5	6
Electricity/energy	15	11

In 1996 and 1997 state governments were required to distribute the FDSM between their municipalities on the basis of "broadly comparable" poverty criteria, but were at liberty to define their own specific formulas. Even though many states[3] included the variables appearing in the original federal formula (directly or through the CONAPO poverty index[4]), this liberty resulted in an enormous heterogeneity of formulas. Some of these were innovative, even introducing fiscal efficiency criteria (Guanajuato, Hidalgo), and adding new variables which could be interpreted as local needs or policy priorities: number of localities (Chiapas, Guanajuato, Jalisco, Michoacan, Oaxaca, Veracruz), rural population (Guerrero, Mexico), indigenous population (Chiapas, Jalisco, Michoacan). However, many of these formulas appeared to be methodologically unsound. In particular, in contrast to the FGT basis of the federal formula, they often failed to weight poverty gaps appropriately by the population suffering these gaps. Rather, most states simply used average poverty incidence measures and introduced population as a separate, though heavily weighted variable. For example, Guanajuato used as its formula's two principal variables, a multi-dimensional municipal head count *ratio* (40% weight) and a municipal population share variable (50% weight), *separately*.

Interestingly, the distributional effect of this turns out to be similar to the use of the per-state-share rule in the federal assignments: a tendency to under-assign funds to the states' poorest municipalities (measured by population-weighted poverty gaps), compensated by over-assignments to the richest ones. This suggests that states might in effect have used this degree of freedom to "fine tune" the relative weight assigned to average poverty and population shares as separate variables to minimize the political costs of an abrupt transition from the *status quo ex ante* to a fully progressive distribution of these resources.

[3] The following illustrations are based only on the formulas published by some of the principal FAIS receivers: Chiapas, Guanajuato, Guerrero, Hidalgo, Jalisco, Mexico, Michoacán, Oaxaca y Veracruz.

[4] See CONAPO (1993).

Since 1998, however, state governments have been constrained to apply one of two *common* formulas: the federal formula itself (MCM, for "masa carencial municipal"), or a simpler formula designed to be used when household-level information is not available (we shall call this FED2). The latter formula uses municipal shares in the state's poor population, measured by four simple variables, symmetrically weighted: economically active population receiving less then two minimum wages, adult illiterate population, population living in houses without drainage, and population living in houses without electricity. All but six states[5] have used the simpler formula rather than MCM in 1998.

Federal fiscal law does not specify an equal-municipality-share principle analogous to the federal "equity" principle, but states are required to distribute only the municipal component of FAIS (FISM) through the formulas, leaving limited (12%) allocative freedom to states through the state component (FISE). Note, however, that states can still compensate municipalities loosing from the progressive allocation of FAIS forced on them by the federal formulas, through other R33 municipal funds, like FAM.

3. *Analytic and informational limitations of the FAIS formulas*

The most important theoretical advantage of the MCM formula is its construction on the basis of *individual, multi-dimensional* poverty gaps, combining the informational richness of multi-dimensional poverty measures, with the transparent inter-personal aggregation function of FGT monetary poverty measures. This makes the measure sensitive to the incidence, average intensity, as well as distribution (through the squaring of the household poverty gaps) of poverty. By contrast, FED2, like most multi-dimensional measures (e.g. UNDP's HDI and HPI), is not only insensitive to the intensity and distribution of poverty, but even as an incidence measure it is insensitive to the "dimensional intensity" of poverty: a combination of 50% illiteracy and 50% lacking electricity gives the same value whether those affected by each of these problems are (in the limit) exactly the *same* populations or strictly disjoint sets.

The MCM formula has a number of important limitations, however. First, the form of the inter-dimensional, *intra*-household aggregation function is arbitrary, assuming (by its linearity) perfect substitutability (in proportion to relative weights). This seems unplausible in general, and for very low

[5] Aguascalientes, Coahuila, Colima, Guanajuato, Michoacán, and Tamaulipas. Information from SEDESOL's *Dirección General de Programas de Desarrollo Regional*.

satisfaction levels of basic needs the rate of substitution might well tend to zero. MCM may be contrasted on this point with UNDP's recently proposed "Human *Poverty* Index", which uses an elasticity of substitution of ½ (UNDP 1997).

Second, as noted, the determination of weights is not transparent, both in principle and in its actual empirical estimation.

Third, the selection of variables is not entirely consistent with the specific stated objectives of FAIS, which is to provide basic infrastructure of the kinds noted in Table 1. In 1997 only 30% weight was assigned to variables *directly* relevant to these objectives (housing, drainage, electricity), though this was increased in 1998 to 41%. In the case of FED2, by contrast, a 50% weight is assigned to infrastructural variables, though these do not include housing. On the other hand, a majority of the types of infrastructure mentioned as objectives are not included as variables in MCM: water projects, municipal urbanization, basic health and education infrastructure, rural roads, and rural productive infrastructure. Though it may be difficult to obtain good data on a systematic basis for some of these (municipal urbanization and rural productive infrastructure), this is not the case for water (Population and Housing Census), educational, health and road infrastructure (Censuses by the relevant ministries), and the important rural component can of course be proxied by including rural population as a variable, as in the 1996 formula.

Fourth, the statistical significance of the empirical estimation of the MCM measure is unclear. In 1997 a 1% sample of the 1990 Census was used to estimate the measure, actualized in 1998 with a similar sample for the 1995 Conteo, except for the income variable which is not available in the latter. Unfortunately, however, these samples are not representative at the municipal level. At least in the 1990 case, many municipalities are not representad by any observation at all, and a third of the municipalities in the country are represented by less than ten observations.

4. From PRONASOL to FAIS: Allocations 1988-2000

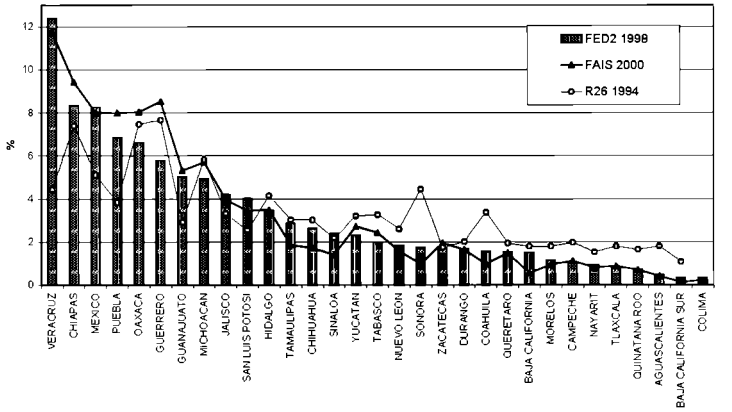
Table 3 and Graph 1 show the states' percentage shares in FAIS and its antecedent funds in R26, compared to the percentage shares in national poverty as measured by the FED2 formula (unconstrained by the equal-share criterion). The 2000 estimation is simply the MCM 1998/9 allocation unrestricted by the transitional equal-sharing criterion, so this can also be used to compare the two (unconstrained) FAIS formulas.

Table 3

FROM PRONASOL TO FAIS ALLOCATIONS 1998-2000

	FED2	PRONASOL (R26)								FDSM (R26)		FAIS (R33)		
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000 (est.)
VERACRUZ	12 37	5 74	4 97	2 92	3 69	4 05	4 16	4 42	3 61	5 46	8 10	9 10	10 58	11 74
CHIAPAS	8 32	5 74	6 24	7 89	8 14	7 13	5 48	7 39	7 97	7 77	7 16	7 49	8 57	9 41
MEXICO	8 25	4 16	4 29	6 92	5 93	5 24	5 35	5 10	5 07	4 79	6 59	6 52	7 35	8 00
PUEBLA	6 84	3 79	2 69	3 13	2 98	3 31	3 32	3 83	3 77	3 95	6 18	6 51	7 34	7 99
OAXACA	6 62	6 14	6 60	8 20	7 41	7 21	6 37	7 46	8 02	7 80	6 63	6 54	7 38	8 03
GUERRERO	5 78	3 80	4 16	4 03	5 30	5 66	5 67	7 66	7 31	7 57	5 31	6 88	7 80	8 52
GUANAJUATO	5 02	1 58	1 51	2 63	2 58	2 82	3 31	2 91	2 53	3 10	4 89	4 66	5 03	5 31
MICHOACAN	4 93	3 44	4 65	4 42	5 07	6 69	5 64	5 81	5 37	4 82	5 02	4 93	5 36	5 70
JALISCO	4 20	5 51	3 78	3 33	3 42	3 21	3 36	3 32	3 21	2 91	3 99	3 74	3 87	3 97
SAN LUIS POTOSI	4 03	1 39	1 66	1 90	2 38	2 10	2 99	2 55	2 84	3 15	3 63	3 38	3 42	3 45
HIDALGO	3 47	2 69	2 41	3 16	3 21	3 48	3 80	4 14	4 04	4 18	3 73	3 41	3 46	3 50
TAMAULIPAS	2 86	1 99	1 97	1 87	2 64	2 03	2 34	3 02	2 95	2 62	2 51	2 28	2 04	1 85
CHIHUAHUA	2 62	2 68	4 09	3 56	3 79	3 69	3 40	3 02	3 01	2 96	2 54	2 18	1 92	1 71
SINALOA	2 39	3 01	2 61	2 35	2 91	2 50	2 33	2 18	2 03	2 09	2 44	1 96	1 65	1 40
YUCATAN	2 30	10 10	6 99	5 94	6 08	6 08	4 48	3 20	3 10	3 00	2 40	2 88	2 79	2 72
TABASCO	1 97	1 27	0 98	0 81	1 19	1 45	4 48	3 26	2 60	2 46	2 71	2 67	2 53	2 42
NUEVO LEON	1 83	3 99	7 47	4 35	2 95	3 45	2 76	2 60	3 20	2 90	2 16	2 09	1 80	1 57
SONORA	1 72	5 45	4 35	3 29	3 04	4 21	4 79	4 45	3 99	3 38	1 81	1 66	1 27	0 96
ZACATECAS	1 69	2 60	3 03	3 30	3 50	2 38	2 12	1 74	2 08	2 76	2 67	2 34	2 12	1 95
DURANGO	1 68	2 43	2 08	3 89	3 18	2 65	2 16	2 01	2 02	2 52	2 45	2 13	1 85	1 63
COAHUILA	1 54	1 93	2 97	3 13	4 40	4 44	3 89	3 37	3 47	3 22	2 00	1 67	1 28	0 97
QUERETARO	1 51	2 47	1 61	1 55	1 34	1 19	1 89	1 94	2 23	2 24	1 90	2 02	1 72	1 48
BAJA CALIFORNIA	1 49	2 63	3 68	3 45	1 90	1 65	2 21	1 79	1 81	1 56	1 55	1 38	0 91	0 55
MORELOS	1 15	1 51	1 58	2 19	2 06	2 10	2 00	1 79	1 82	1 59	1 71	1 65	1 25	0 94
CAMPECHE	1 00	2 11	2 36	2 23	2 24	2 43	2 31	1 97	2 35	2 26	1 57	1 77	1 40	1 11
NAYARIT	0 92	2 04	2 54	1 54	1 43	1 71	1 48	1 52	1 54	1 61	1 62	1 56	1 14	0 81
TLAXCALA	0 80	1 97	2 25	2 18	1 74	1 72	1 72	1 79	1 88	2 10	1 63	1 60	1 20	0 88
QUINATANA ROO	0 71	1 87	1 76	1 61	1 71	1 82	1 67	1 64	1 78	1 50	1 45	1 48	1 04	0 70
AGUASCALIENTES	0 48	1 86	1 47	1 60	1 43	1 21	1 90	1 79	1 76	1 51	1 32	1 28	0 79	0 40
BAJA CALIFORNIA SUR	0 33	1 57	1 22	1 11	1 17	1 09	1 27	1 07	1 24	1 07	1 13	1 09	0 55	0 13
COLIMA	0 32	2 45	1 97	1 47	1 15	1 24	1 32	1 24	1 35	1 12	1 20	1 16	0 63	0 23
6 POOREST	**48.17**	**29.37**	**28.96**	**33.09**	**33.46**	**32.62**	**30.36**	**35.86**	**35.76**	**37.34**	**39.97**	**43.04**	**49.01**	**53.68**

GRAPH 1
PRONASOL to FAIS: 1994-2000 (Relative Shares, %)



Note first that despite the differences in functional form, variables, and weights (FED2 does not include housing and gives only 25% weight to income), the FED2 and MCM shares are fairly close, assigning about half the fund to the six poorest states: Veracruz, Chiapas, Mexico, Oaxaca, Puebla and Guerrero. The relative bias observed in MCM in favor of some of the poorer states (Guerrero, Oaxaca, Puebla, Chiapas) may reflect the fact that MCM is sensitive to the intensity, as well as incidence of poverty. This is consistent with the evidence for monetary poverty measures that inter-state poverty gaps tend to widen as we move from incidence measures to include the average intensity and distribution of poverty (see the effect of substituting FGT2 for FGT0 in table 5, below).

Second, the change in weights and the actualization of census information (from 1990 to 1995) between 1997 and 1998 has a significant impact on the shares of several states, with the principal winners Guerrero (24%) and Yucatan (17%), and the principal losers Sinaloa (24%) and Coahuila (20%).

Finally, over the decade we observe a continuous improvement in progressivity (as measured by FED2), with the shares of the six poorest states, increasing from 29% to an expected 54% in 2000. Veracruz increased its share four times, from 3% to 12%. It is interesting to note that with all the reforms introduced over this period, the most dramatic gain for these poorest states has not been obtained through the gradual improvement in progressivity over

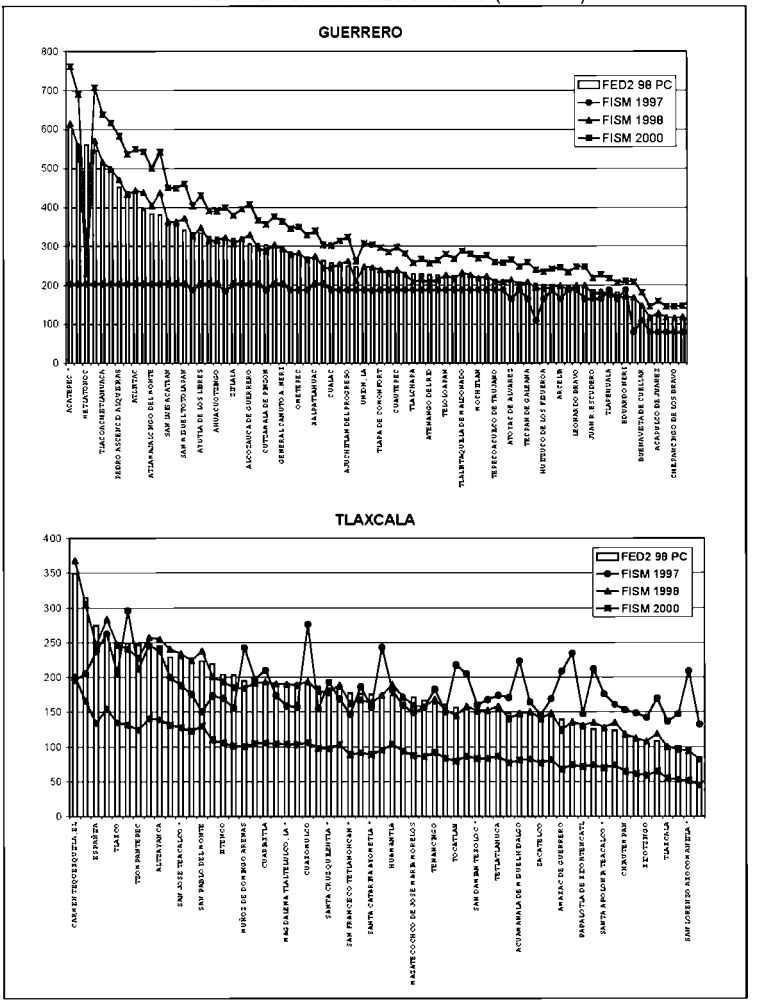
the history of PRONASOL (7 percentage points), nor with the introduction and improvement of formulas between 1996 and 1998 (7), but will be obtained by the simple elimination of the equal-share constraint expected by 2000 (11).

Considering now the allocation of FISM funds within states, graph 2 illustrates the contrasting impact of the evolution of inter- and intra- state formulas over the last three years, for a poor and populous state, Guerrero, and a small and comparatively rich one, Tlaxcala.

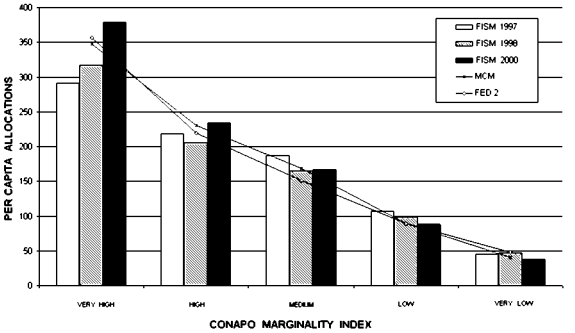
We can appreciate, first of all, the limited progressivity of the municipal allocations applied by these states in 1997, when they were at liberty to define their own formulas. Guerrero simply allocated resources as a function of population, lowering the per capita allocations significantly only for the 7 richest municipalities (out of 38). Tlaxcala's allocation appears to be completely uncorrelated with municipal poverty, as measured by the per capita shares implied by FED2. Naturally, the 1998 allocations follow the latter very closely (with the notable exception of Metlatonoc in Guerrero), since these states supposedly applied this formula. The expected elimination of the equal-share criterion in the federal allocation (FISM 2000), will have a significant positive impact on Guerrero's municipalities and a dramatic negative impact on Tlaxcala's, cutting the latter's resources for this concept almost by a half (this illustration assumes an unchanging FISM budget, in real terms, over the 1998-2000 period).

The progressive impact of these reforms in Mexico's municipalities as a whole can be appreciated in Graph 3, where all municipalities are grouped by descending poverty levels according to the CONAPO marginality index, and their FISM allocations are compared to the per capita allocations recommended by an application of FED2 and MCM to the allocation of FAIS to the municipalities directly. From 1997 to 2000 we can note a significant per capita increase for municipalities classified as very highly marginalized, brought about both by the adoption of a common formula by state governments and the expected elimination of the equal-share constraint by the federal government.

GRAPH 2
FISM PER CAPITA ALLOCATIONS (MP 1999)



GRAPH 3
CONAPO GROUPS : PER CAPITA ALLOCATIONS



5. Testing and extending the FAIS formulas

Given the noted limitations of the FAIS formulas, one could reform them in two principal directions. First, the MCM functional form could be improved, for example by defining a credible method to specify weights and incorporating a lower elasticity of inter-dimensional substitution. Given that there does not exist as yet in the theoretical literature on multi-dimensional poverty measurement a functional family comparable in transparency and normative properties to the forms available for monetary measurement,[6] and we do not have the necessary data to estimate MCM confidently with present data, we will opt here for the much simpler but more transparent and implementable functional form of FED2. The use of the simpler formula is also justified by the high correlation levels observed between MCM and FED2 shares, as well as other poverty measures, as suggested by Graphs 1 and 3,

[6] See Technical Annex, UNDP (1997), for some of the limited possibilities in this area.

and shown by the Pearson correlation coefficients in Table 4 (FED2+ is described below). To check whether this applies within as well as between states we include similar tests for Veracruz, Oaxaca, and Guanajuato, including FGT1 but excluding FGT0(95) for lack of this information at the municipality level. Here as in the rest of this document, we will use two minimum wages as the income poverty line.

We can observe high correlation coefficients between different functional forms using similar variables (CONAPO, MCM, FED2, FED2+), but also between FGT2 and the latter measures. This suggests that non-monetary variables may serve to indicate poverty intensity and distribution in Mexico even through *incidence* measures like FED2 and FED2+. This is even clearer for the states, where we can appreciate a tendency for the correlation between non-monetary and monetary measures to increase as we increase the alpha parameter in FGT, especially from 0 to 1.

The second avenue to reforming the formulas is to expand their informational basis, and we will build on the FED2 formula in this direction here. Following the stated objectives of FAIS (see Table 1), we introduce in addition to the electricity, drainage and income poverty variables, the following infrastructural measures (Table 5): a) houses without piped water (WATER), b) houses with soil floor (FLOOR), as a proxy for housing needs, and c) number of localities with less then 2500 inhabitants (<2500), as a proxy for rural road needs (relevant for the 50-2500 range), as well as access to basic health and educational facilities (relevant in the <50 range). For the latter, we also include data on access to basic facilities obtained from PROGRESA's locality survey (ACCESS), which may not, however, be fully representative at the state level. Finally, we also consider the effect of switching from FGT0 to FGT2, where the latter is based on the 1990 Census. To see the effect on state shares of each addition separately, the variables appearing under the electricity, drainage, FGT0 line represent additions (except for FGT2, which substitutes FGT0) to this core. The FED2+ formula includes all these variables, but excludes adult illiteracy, which is not directly relevant for the objectives of FAIS, and we present a version with and without the access variable.

It seems clear from the table that the FED2 formula is quite robust to the introduction of the new variables, though some variations may be important to specific states. For example, Veracruz would gain significantly from the introduction of the water variable (in relation to FED2 as well as MCM), and Chiapas and Oaxaca from the introduction of FGT2 (in relation to FED2). Guerrero, Mexico, and Puebla lose from the introduction of the localities variable, and BCS wins. The housing proxy changes little, but access to education and health infrastructure has significant effects on the shares of

many states. A change from FED2 to FED2+ would have marginal effects, though the four poorest states would increase their aggregate share from 33% to 36%.

Table 4
Pearson Correlations

	FGT(0)90	FGT(2)90	FGT(0)95	CONAPO	MCM	FED2
NATIONAL						
FGT(2)90	0.8985					
FGT(0)95	0.9924	0.9219				
CONAPO	0.7391	0.9400	0.7838			
MCM	0.7939	0.9610	0.8358	0.9822		
FED2	0.8547	0.9665	0.8884	0.9665	0.9723	
FED2+	0.7796	0.9336	0.8183	0.9631	0.9567	0.9858
GUANAJUATO						
FGT(1)90	0.9870					
FGT(2)90	0.9403	0.9827				
CONAPO	0.9729	0.9910	0.9796			
MCM	0.7914	0.8722	0.9346	0.8925		
FED2	0.9468	0.9671	0.9581	0.9862	0.8938	
FED2+	0.8382	0.8836	0.9069	0.9246	0.8964	0.9584
OAXACA						
FGT(1)90	0.9607					
FGT(2)90	0.8726	0.9736				
CONAPO	0.8926	0.9638	0.9638			
MCM	0.7568	0.8775	0.9260	0.9162		
FED2	0.9393	0.9756	0.9471	0.9730	0.8708	
FED2+	0.8304	0.9241	0.9451	0.9576	0.8900	0.9488
VERACRUZ						
FGT(1)90	0.9739					
FGT(2)90	0.9095	0.9798				
CONAPO	0.8564	0.9231	0.9441			
MCM	0.7936	0.8885	0.9360	0.9614		
FED2	0.8892	0.9431	0.9502	0.9805	0.9438	
FED2+	0.7440	0.8304	0.8720	0.9496	0.9200	0.9469

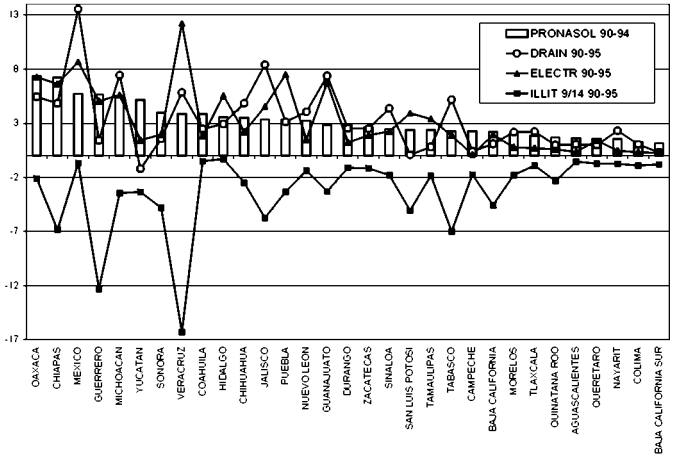
TABLE 5

State	FAIS 1999	FAIS 2000 (MCM)	ELECTRICITY, DRAINAGE, FGT0								FED2+	
				FGT2(90)	ILLIT 15+ (FED2)	WATER	<2500	50-2500	FLOOR	ACCESS		ACCESS
VERACRUZ	10 58	11 74	12 57	12 74	12 26	14 13	12 11	12 52	12 78	10 42	13 53	12 41
CHIAPAS	8 57	9 41	8 10	9 29	8 48	8 17	8 60	8 33	8 35	8 96	9 23	9 47
GUERRERO	7 80	8 00	5 40	5 67	5 84	5 84	4 98	5 44	6 00	6 48	5 95	6 95
OAXACA	7 38	7 99	6 46	7 51	6 76	6 73	6 07	6 91	7 02	6 12	7 27	7 31
MEXICO	7 35	8 03	8 37	7 48	8 44	8 02	6 84	7 56	8 22	6 28	6 58	6 21
PUEBLA	7 34	8 52	6 64	6 94	6 91	6 69	5 73	6 31	7 02	5 01	6 48	5 99
MICHOACAN	5 36	5 31	4 81	4 80	5 15	4 53	4 81	5 04	4 99	4 61	4 74	4 61
GUANAJUATO	5 03	5 70	4 62	4 51	5 06	4 25	4 59	4 97	4 37	3 70	4 14	3 54
JALISCO	3 87	3 97	4 19	3 70	4 31	4 07	4 64	4 40	4 21	4 42	4 18	4 03
HIDALGO	3 46	3 45	3 47	3 50	3 52	3 37	3 16	3 76	3 41	2 61	3 17	2 80
SAN LUIS POTOSI	3 42	3 50	4 23	4 33	3 92	4 16	4 08	4 29	3 96	4 16	3 94	4 00
YUCATAN	2 79	1 85	2 17	2 18	2 22	2 05	2 01	1 84	2 06	1 97	1 92	1 90
TABASCO	2 53	1 71	2 03	2 12	2 02	2 57	1 84	2 16	1 90	1 80	2 22	2 19
ZACATECAS	2 12	1 40	1 82	2 01	1 67	1 77	2 00	2 05	1 64	2 48	1 89	2 21
TAMAULIPAS	2 04	2 72	3 25	3 09	2 83	3 03	3 62	2 96	3 03	4 20	3 13	3 51
CHIHUAHUA	1 92	2 42	2 88	2 62	2 55	2 63	3 87	2 93	2 65	4 47	3 09	3 49
DURANGO	1 85	1 57	1 87	1 91	1 63	1 67	2 22	2 04	1 79	3 12	1 93	2 53
NUEVO LEON	1 80	0 96	2 00	1 74	1 86	1 91	2 25	1 87	1 90	2 20	1 90	1 88
QUERETARO	1 72	1 95	1 45	1 45	1 47	1 32	1 35	1 53	1 30	1 10	1 19	1 02
SINALOA	1 65	1 63	2 51	2 27	2 41	2 43	2 70	2 75	2 57	3 20	2 50	2 84
CAMPECHE	1 40	0 97	1 01	1 01	0 99	1 02	1 09	0 94	0 98	1 72	1 05	1 47
COAHUILA	1 28	1 48	1 71	1 53	1 56	1 54	1 90	1 56	1 49	2 09	1 48	1 60
SONORA	1 27	0 55	1 99	1 75	1 77	1 77	2 60	1 89	2 04	2 32	2 16	1 97
MORELOS	1 25	0 94	1 08	0 94	1 21	1 09	0 95	0 99	1 20	0 81	1 00	0 91
TLAXCALA	1 20	1 11	0 84	0 81	0 83	0 70	0 77	0 74	0 76	0 63	0 63	0 54
NAYARIT	1 14	0 81	0 92	0 86	0 92	0 92	1 02	0 96	0 94	1 06	0 97	1 00
QUINATANA ROO	1 04	0 88	0 72	0 72	0 72	0 71	0 75	0 66	0 72	0 91	0 73	0 84
BAJA CALIFORNIA	0 91	0 70	1 71	1 51	1 51	1 88	1 86	1 45	1 56	1 93	1 71	1 76
AGUASCALIENTES	0 79	0 40	0 49	0 43	0 49	0 40	0 59	0 52	0 42	0 37	0 42	0 27
COLIMA	0 63	0 13	0 30	0 24	0 34	0 27	0 37	0 30	0 36	0 23	0 33	0 24
BAJA CALIFORNIA SUR	0 55	0 23	0 39	0 35	0 34	0 37	0 65	0 36	0 37	0 61	0 53	0 50
6 POOREST	**49.01**	**53.69**	**47.53**	**49.63**	**48.69**	**49.58**	**44.32**	**47.08**	**49.38**	**43.28**	**49.04**	**48.35**

Finally, a full evaluation of FAIS should not just test the distribution of its resources in relation to the fund's objectives, but their actual *impact* on these objectives. Though we do not have impact data for FAIS, we can estimate the impact of its antecedent program, PRONASOL. Graph 5 compares the percentage allocation of PRONASOL from 1990 to 1994, with the states' participation in national progress/retrogress in the number of houses with drainage and electricity, and school-age illiteracy between 1990 (Census) and 1995 (Conteo). Between these years there was a reduction in the percentage of houses without drainage (37% to 30%) and electricity (13% to 8%), but an *increase* in school-age illiteracy (12% to 14%). The graph shows the distribution of the state shares in the absolute national additions to these variables, totaling 4,717,495 (3,762,468) additional houses with drainage (electricity), and 347,401 additional illiterate youngsters. Though PRONASOL was not the only budgetary determinant of these variables, it should certainly have been a significant element, especially in the poorer states, and for the

infrastructural variables. Furthermore, though not all of PRONASOL was allocated to programs aimed at these variables, a majority of its funds is reported as being thus allocated: about 30% for education--20 for the "Escuela Digna" and 10 for the "Niños en Solidaridad" program--and over 20% for basic services--4.5% for Electricidad Rural y Urbana, 4.6% for Agua y Alcantarillado, and 19% for *Fondos Municipales de Solidadridad (*SEDESO 1995).

GRAPH 5: PRONASOL IMPACT 1990-1995 (Relative shares in gains/losses)



Note first that the tendencies in drainage and electricity are broadly consistent with PRONASOL shares, but *inversely* so for illiteracy. This need not indicate that the educational programs of PRONASOL were ineffective, since the bulk of educational spending comes from SEP. Note that the worst performers among the principal PRONASOL recipients (Veracruz, Guerrero, and Chiapas) also exhibit some of the largest under-assignments of FAEB in relation to their needs (see Graph 6 below). Since FAEB reflects established capacity, it is reasonable to assume that these shares are very similar to 90-94 SEP shares for basic education. What the disappointing performance in education indicators does suggest, however, is that PRONASOL was incapable of correcting, even at the margin, these budgetary imbalances.

In relation to drainage and electricity, we note further that certain states account for a disproportionate share of progress when compared to their share in PRONASOL, while others lag behind despite being among the principal PRONASOL recipients. This may again reflect in part the effect of compensating resources from other sources, but at least in the case of drainage--a municipal responsibility—it may mostly reflect efficiency in the use of PRONASOL resources in these states, with the states of Mexico, Guanajuato and Jalisco the more efficient, and Guerrero and Yucatan the least efficient.

6. Education and Health: Reforming the distribution of FAEB and FASSA

The education and health funds, FAEB and FASSA, jointly absorb almost three-quarters of R33. Given the history of centralization of public goods in these areas in Mexico, it seems especially relevant to apply the lessons from the FAIS reform experience here. This process will no doubt turn out to be even more gradual then the latter, since the political constraints here are especially important, as the great bulk of spending from these funds goes to wages of medical personnel and, especially, teachers. Nevertheless, the first step towards change must be a clear understanding of the possibilities in equitable and efficient public resource allocation, however distant this goal may be in practice.

Tables and graphs 6 and 7 compare the 1999 state distribution of FAEB and FASSA, respectively, with a) established capacity in these sectors, as measured by service personnel, service units, and/or populations actually served, and b) demands for these services, as measured by the potential populations to be served, as well as the relative health and educational gaps of these populations.

In the case of education, we include as capacity indicators the number of teachers and students in (public) basic education, and as demand indicators, illiteracy in school-age population, desertion rates of basic education, school-age population not attending school, and population without access to basic education facilities (from the PRONASOL survey and proxied by number of localities with less the 100 inhabitants). Table 6 shows the effect on FAEB shares of adding these variables, one at a time, to the state's share of the nations student population enrolled in basic education. Furthermore, we present the shares implied by a number of FED2-style formulas combining students, illiteracy, desertion, and no attendance variables in 7:1:1:1 (EDU1) and 4:2:2:2 (EDU2) proportions, and, including the access variable, in 3:2:2:2 proportions (EDU3), with the residual 10% assigned to access. In the table,

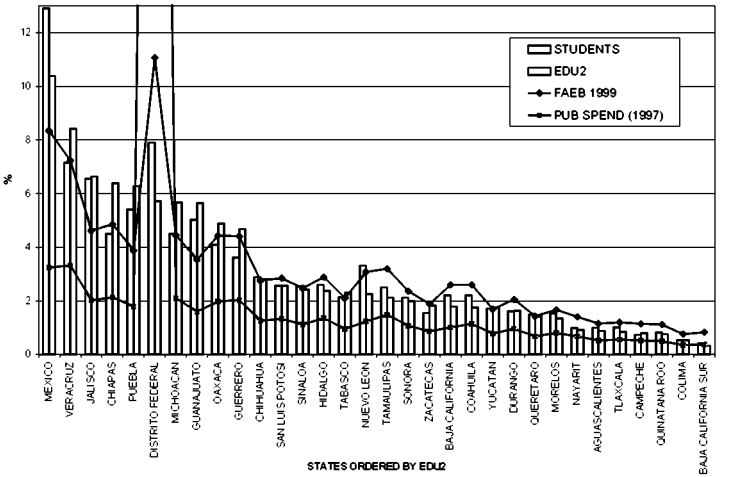
states are ordered by their share in the nation's (school-age) illiterate population in descending order. Note that the six states accounting for 46% of the illiterate receive 33% of FAEB. Excluding the state of Mexico, which benefits by sharing Greater Mexico City with the D.F., these states account for 39% of the illiterate but receive only 25% of FAEB and have exactly this same proportion of the nations teachers and students.

Graph 5 compares the allocations which would be implied by illiteracy and EDU1 (states ordered by the latter), with the shares of the student body, FAEB, and total public spending in education (including middle and higher education). We can appreciate a similar pattern in the latter variables, though the disproportionate share of FAEB in relation to the needs variables in DF (11%, with 3.4% of the national illiteracy burden), is dwarfted by the 60% concentration of total education spending in this entity. Note that the FAEB shares follow closely the shares in students.

TABLE 6

State	PUBLIC SPENDING (1997)	FAEB 1999	FAMIE 2000	ILLIT	TEACHERS	STUDENTS						STUDENTS, ILLIT, DESERTION, NO ATTEDANCE			
							ILLIT	DESER	NO ASIST	<100	ACCESS	EDU1	EDU2	EDU3	
												70,10,10,10	40,20,20,20	30,20,20,20,10	
														<100	ACCESS
VERACRUZ	3 32	7 23	8 08	11 30	7 36	7 15	9 23	7 32	8 07	8 62	5 18	7 78	8 42	8 71	6 54
CHIAPAS	2 13	4 86	4 64	8 08	4 32	4 49	6 68	4 69	6 82	7 44	9 75	5 43	6 36	6 97	9 05
MEXICO	3 24	8 34	7 31	7 05	11 62	12 92	9 98	11 86	10 59	7 01	6 48	11 65	10 39	9 21	7 22
GUERRERO	2 03	4 41	4 95	6 53	3 83	3 61	5 07	4 11	4 32	3 39	7 90	4 14	4 67	4 63	7 06
PUEBLA	1 78	3 88	5 08	6 34	4 85	5 40	5 87	5 21	7 31	3 79	2 73	5 84	6 28	5 96	4 11
MICHOACAN	2 09	4 44	4 19	5 93	4 53	4 49	5 21	5 51	5 69	4 54	4 59	5 08	5 66	5 67	5 21
JALISCO	2 02	4 62	6 35	5 71	6 18	6 55	6 13	6 89	6 83	6 55	5 47	6 59	6 63	6 63	5 88
GUANAJUATO	1 60	3 54	3 42	5 44	4 44	5 02	5 23	5 54	5 86	4 50	2 67	5 33	5 65	5 54	3 80
OAXACA	1 97	4 43	6 15	5 28	3 95	4 08	4 68	4 41	5 16	3 98	4 94	4 48	4 88	4 86	5 10
DISTRITO FEDERAL	60 37	11 07	0 00	3 37	9 12	7 91	5 64	7 39	5 22	4 09	3 96	6 81	5 72	4 95	4 06
TABASCO	0 95	2 10	3 35	2 87	1 87	2 13	2 50	2 16	2 13	1 43	1 24	2 21	2 29	2 15	1 62
SAN LUIS POTOSI	1 32	2 84	2 75	2 85	2 85	2 56	2 70	2 38	2 61	2 94	1 48	2 56	2 57	2 64	1 84
CHIHUAHUA	1 25	2 75	2 67	2 33	2 82	2 88	2 60	3 21	2 65	5 54	7 52	2 84	2 81	3 34	5 93
HIDALGO	1 35	2 89	3 39	2 27	2 60	2 59	2 43	2 47	2 34	1 98	1 31	2 49	2 38	2 26	1 62
SINALOA	1 12	2 47	2 80	2 20	2 85	2 54	2 37	2 57	2 35	2 88	2 84	2 47	2 41	2 48	2 67
YUCATAN	0 78	1 68	2 41	2 19	1 86	1 71	1 95	1 60	1 65	1 72	1 45	1 73	1 74	1 74	1 55
SONORA	1 07	2 36	2 44	1 93	2 13	2 12	2 02	2 32	1 69	3 72	2 44	2 06	1 99	2 31	2 26
TAMAULIPAS	1 48	3 19	2 80	1 91	2 50	2 50	2 21	2 40	1 94	4 03	4 96	2 31	2 12	2 42	3 93
BAJA CALIFORNIA	1 01	2 59	2 62	1 76	2 21	2 21	1 98	1 77	1 80	2 50	3 13	1 99	1 78	1 84	2 58
NUEVO LEON	1 23	3 07	2 85	1 62	3 76	3 31	2 47	2 52	2 31	3 41	3 61	2 79	2 26	2 28	2 93
ZACATECAS	0 86	1 88	1 98	1 60	1 63	1 54	1 57	1 91	1 86	2 01	1 47	1 69	1 83	1 92	1 65
DURANGO	0 95	2 05	1 90	1 57	1 96	1 60	1 58	1 82	1 49	2 56	3 24	1 62	1 63	1 83	2 71
COAHUILA	1 14	2 60	2 69	1 47	2 34	2 20	1 83	2 02	1 59	2 53	3 17	1 97	1 74	1 81	2 59
QUERETARO	0 67	1 43	2 07	1 33	1 26	1 49	1 41	1 39	1 47	1 15	0 77	1 45	1 41	1 34	0 96
MORELOS	0 80	1 66	1 86	1 28	1 45	1 53	1 40	1 34	1 38	1 02	0 76	1 44	1 34	1 24	0 92
CAMPECHE	0 51	1 14	2 39	0 93	0 75	0 73	0 83	0 80	0 71	1 11	2 25	0 76	0 79	0 87	1 78
QUINATANA ROO	0 49	1 11	1 91	0 88	0 80	0 81	0 85	0 74	0 70	0 88	0 95	0 78	0 76	0 77	0 88
NAYARIT	0 67	1 40	1 60	0 86	1 16	0 99	0 92	0 95	0 92	1 17	1 33	0 95	0 92	0 95	1 18
TLAXCALA	0 56	1 19	1 62	0 76	0 99	1 01	0 88	0 84	0 87	0 80	0 50	0 92	0 83	0 79	0 58
AGUASCALIENTES	0 52	1 15	1 47	0 73	0 98	1 00	0 86	0 93	0 90	0 99	0 50	0 94	0 88	0 88	0 78
COLIMA	0 35	0 75	1 30	0 52	0 61	0 53	0 53	0 56	0 49	0 60	0 27	0 53	0 52	0 54	0 35
BAJA CALIFORNIA SUR	0 37	0 83	0 98	0 35	0 44	0 40	0 38	0 35	0 28	1 11	1 12	0 36	0 32	0 47	0 84
6 POOREST	14 60	33 16	34 25	46 02	36 50	38 06	42 04	39 70	42 80	34 79	36 63	39 93	41 80	41 15	39 19

GRAPH 6: EDUCATION (Relative shares)



In the case of health, we include as established capacity measures doctors and medical units devoted to the non-covered population, and on the demand side the share in the nation's non-covered population, *disability-adjusted-life-years* (DALYs) lost due to premature death or disability,[7] DALYs lost due to communicable, nutrition, or reproductive diseases (DALYs CNR)--conditions associated with poverty—years of life lost due to premature mortality (YLL), infant mortality, and access to basic health services (again from the PROGRESA survey and proxied by localities under 100). The table shows the effect of including each of these variables, one at a time, to the non-covered population (NCP) share, as well as a number of combinations with different weights (indicated under the list of variables included). Note that the six states accounting for 45% of the DALY count, and a similar proportion of the NCP, receive 38% of FASSA.

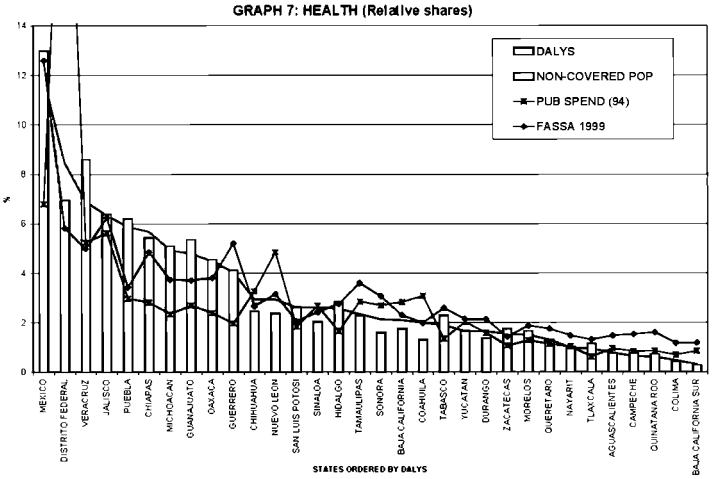
Graph 6 compares the states' shares in DALYs and NCP with their shares in FASSA and public spending on the NCP (SSA and IMSS-Solidaridad). Again we find an important concentration of the latter in DF, though on a more modest scale (this would of course be much larger if we included services for the insured population, which absorb the bulk of public health care resources),

[7] We use DALYs to order states in the table and graph. All DALY and YLL information refer to 1994, and are from Frenk (1997).

comparable to its concentration of doctors. Also, the distribution of FASSA again closely follows established capacity, as measured by doctors.

TABLE 7

State	PUBLIC SPENDING (1994)	FASSA 1999	DALYS	NON-COVERED POP	DOCTORS (FOR NCP)	MED UNITS (FOR NCP)	NON-COVERED POPULATION						DOCT/MED UNIT. NCP. DALYS	DOCT/MED UNIT. NCP. DALYS	DOCT/MED UNIT. NCP. DALYS CNR	DOCT/MED UNIT. NCP. DALYS CNR <100
							DALYS	DALYS CNR	YLL	INF MORT	ACCESS	<100	3,4,3	2,3,5	2,3,5	2,3,4,1
MEXICO	6 79	12 59	11 92	12 98	10 15	10 44	12 45	12 36	13 88	12 26	6 51	7 05	11 86	11 91	11 82	10 76
DISTRITO FEDERAL	25 92	5 81	8 46	6 93	13 26	8 77	7 70	7 22	7 91	6 40	3 47	3 60	8 62	8 51	8 04	7 31
VERACRUZ	5 24	4 98	6 89	8 59	4 49	6 06	7 74	8 12	7 65	8 50	6 30	9 34	7 09	7 08	7 46	7 70
JALISCO	5 62	6 23	6 34	6 37	5 15	5 14	6 35	5 79	6 31	6 33	6 35	6 47	5 99	6 11	5 54	5 68
PUEBLA	2 97	3 42	5 87	6 20	4 16	4 57	6 04	6 58	6 77	6 08	3 18	4 19	5 55	5 67	6 22	5 74
CHIAPAS	2 82	4 85	5 68	5 42	4 31	5 48	5 55	6 81	5 05	5 43	6 01	7 90	5 34	5 44	6 71	6 93
MICHOACAN	2 35	3 74	4 93	5 10	4 44	4 47	5 02	4 91	4 45	4 98	4 60	4 85	4 86	4 89	4 78	4 76
GUANAJUATO	2 69	3 71	4 79	5 35	3 77	3 41	5 07	5 25	5 32	5 53	3 34	4 67	4 66	4 72	4 89	4 78
OAXACA	2 39	3 81	4 48	4 55	4 32	5 30	4 52	4 94	4 59	4 75	4 12	4 21	4 61	4 57	4 99	4 85
GUERRERO	1 97	5 20	4 05	4 11	3 59	4 39	4 08	4 49	3 45	4 10	4 98	3 64	4 06	4 06	4 46	4 29
CHIHUAHUA	3 27	2 67	2 94	2 45	1 95	2 40	2 70	2 33	2 93	2 52	5 69	5 33	2 52	2 64	2 28	2 87
NUEVO LEON	4 85	3 16	2 94	2 37	3 84	3 85	2 65	2 25	2 54	2 55	1 80	2 94	2 98	2 95	2 54	2 68
SAN LUIS POTOSI	1 83	2 05	2 61	2 62	1 81	2 50	2 62	2 69	2 39	2 68	4 43	2 97	2 48	2 52	2 59	2 65
SINALOA	2 68	2 43	2 61	2 03	2 16	2 27	2 32	2 11	1 88	2 34	4 43	2 62	2 26	2 35	2 15	2 25
HIDALGO	1 65	2 76	2 57	2 83	3 00	3 74	2 70	2 88	2 53	2 84	1 41	2 09	2 91	2 81	2 98	2 83
TAMAULIPAS	2 85	3 60	2 34	2 29	2 42	2 32	2 31	2 03	2 20	2 24	4 76	3 93	2 33	2 33	2 05	2 43
SONORA	2 70	3 06	2 13	1 60	2 55	2 34	1 86	1 66	1 90	1 71	3 14	3 46	2 01	2 03	1 83	2 19
BAJA CALIFORNIA	2 83	2 29	2 10	1 74	1 74	1 27	1 92	1 72	2 28	1 66	1 39	2 27	1 78	1 87	1 68	1 79
COAHUILA	3 08	1 99	2 00	1 30	2 06	2 05	1 65	1 40	1 56	1 64	2 02	2 08	1 73	1 80	1 55	1 68
TABASCO	1 35	2 59	1 89	2 29	3 69	3 37	2 09	2 14	2 16	2 11	1 96	1 51	2 54	2 34	2 39	2 26
YUCATAN	2 02	2 14	1 66	1 67	1 95	1 22	1 66	1 69	1 56	1 81	1 73	1 70	1 64	1 65	1 67	1 67
DURANGO	1 58	2 13	1 65	1 37	2 26	2 45	1 51	1 40	1 19	1 54	5 29	2 45	1 75	1 71	1 59	1 80
ZACATECAS	1 06	1 42	1 55	1 74	1 84	2 09	1 64	1 54	1 52	1 78	4 12	2 11	1 75	1 69	1 58	1 70
MORELOS	1 29	1 87	1 51	1 66	1 61	1 60	1 58	1 51	1 53	1 58	0 83	1 08	1 60	1 57	1 50	1 42
QUERETARO	1 14	1 75	1 31	1 31	1 67	1 41	1 31	1 28	1 42	1 43	0 66	1 06	1 38	1 36	1 33	1 28
NAYARIT	1 04	1 47	0 99	1 02	1 41	1 37	1 01	0 95	0 87	1 00	1 23	1 19	1 12	1 08	1 03	1 07
TLAXCALA	0 62	1 31	0 95	1 14	1 41	1 24	1 04	1 13	1 19	1 08	0 57	0 86	1 14	1 08	1 17	1 12
AGUASCALIENTES	0 96	1 47	0 78	0 76	1 40	1 08	0 77	0 72	0 60	0 82	0 39	0 87	0 91	0 86	0 82	0 85
CAMPECHE	0 84	1 53	0 65	0 78	0 91	0 82	0 71	0 73	0 68	0 77	3 06	1 14	0 77	0 73	0 75	0 83
QUINATANA ROO	0 85	1 61	0 62	0 72	1 01	0 99	0 67	0 69	0 70	0 75	1 25	0 84	0 78	0 73	0 75	0 78
COLIMA	0 69	1 17	0 48	0 43	0 90	0 88	0 45	0 42	0 44	0 45	0 22	0 54	0 58	0 55	0 51	0 53
BAJA CALIFORNIA SUR	0 85	1 18	0 31	0 28	0 77	0 73	0 30	0 27	0 33	0 30	0 81	1 05	0 43	0 39	0 37	0 52
6 POOREST	**49 36**	**37 89**	**45 16**	**46 80**	**41 62**	**40 46**	**45 83**	**46 89**	**47 57**	**45 01**	**31 82**	**39 64**	**44 44**	**44 79**	**45 79**	**44 12**



7. Consolidating the Reforms

The reforms in social spending we have been considering in this paper involve two formally independent decentralizing elements, which are, however, closely interrelated conditions in the efficient allocation of public resources. The first is the *decentralization of public administration* to optimize the comparative advantages of the three orders of government in coordinating vs. implementing functions. The second involves the *decentralization of public resources* through geographic targeting criteria. We have argued in section 1 that the latter, rather than the former, is the principal gain to be expected in the short run from the current decentralization process. This is also part of a more general reform process introduced in Mexico in recent years, involving a gradual and selective shift of public spending from universal to targeted social programs.

The *Aportaciones* format created for the allocation of Ramo 33 funds represents an uneasy balance between local administrative and federal planning. The division of responsibilities between the three orders of government assumed in this reform should be clearly specified. Freed from local administrative burdens, the federal government can concentrate its efforts on a stronger and more coherent regulative role. This includes two

important tasks: a) defining general objectives and allocation criteria as a function of an integrated budgetary strategy, and b) making local governments accountable by designing mechanisms to evaluate the efficiency of local spending.

As we have seen in relation to FAIS, unless constrained to adopt allocative formulas consistent with the federal formula, states may allocate resources inequitably to their municipalities even while formally committed to anti-poverty objectives, en even when they do so through their own formulas. Though there is as yet no study available on the intra-municipal allocation of FISM, there are reasons to expect and there is anacdotal evidence, that municipalities tend to concentrate FISM resources on the municipal government seats ("cabeceras municipales"). To ensure an equitable distribution of FAIS at the locality level might therefore require the specification of municipal, as well as state formulas. Since all the information currently used to estimate the latter is readily available at the locality level, this would be perfectly feasible technically. At the locality level, allocations are already appropriately constrained by the *types* of projects eligible for FISM resources (except for the 2% allowed for institutional development).

Though the second task—accountability—is much more complex, we can also conceive a number of simple solutions here. Note that the redistributive potential offered by the R33 reform could be limited even if local government did apply allocation criteria fully consistent with the federal criteria, as long as these governments can reallocate the spending from fiscal participations or other (unconstrained) R33 funds (e.g. FAM) to maintain the *status quo ex ante*. A simple tool to minimize this effect could be the inclusion of *additionality* criteria, requiring the allocation of a given fund to be *in addition*, rather than substitution, of previously allocated local funds, thus explicitly prohibiting such compensating shifts. A more ambitious strategy would be to include *conditionality* criteria, making allocations a function of measurable effects of past allocations on the funds' objectives.

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