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Fiscal policy and spatial inequality in Latin America and beyond

Working paper

FISCAL POLICY AND SPATIAL INEQUALITY IN LATIN AMERICA AND BEYOND

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Abstract

We study the theoretical and empirical links between fiscal policy and spatial inequality, with a non-exclusive focus on Latin American countries. We outline the two main dimensions of fiscal policy vis-à-vis economic inequality, and show how these can be used to analyze specific policy measures. We examine why fiscal policies so often fail to have the ameliorative effects that theory predicts on spatial inequality, and explore ways to make policy tools more effective. We explore the relation between fiscal policies and spatial inequalities in three case studies: Mexico, Brazil and Argentina. Lastly, we examine the effects of decentralization on spatial inequality in Bolivia.

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1. Introduction

Numerous studies have noted the growing problem of inequality amongst individuals and across regions. Such is the prevalence of inequality that many have christened it a defining characteristic of our age, affecting developed and developing countries alike, including economies as diverse as China, the United States and South Africa. Researchers have attempted to link this phenomenon to causes as diverse as trade liberalization, the rise of the information economy, increasing "superstar" behavior in product and labor markets, and "neoliberal" policies that pare back the welfare state. Because such theoretical arguments are characterized by their breadth of scope and richness of institutional setting, they are intrinsically difficult to estimate econometrically, and hence to resolve with convincing empirical evidence.

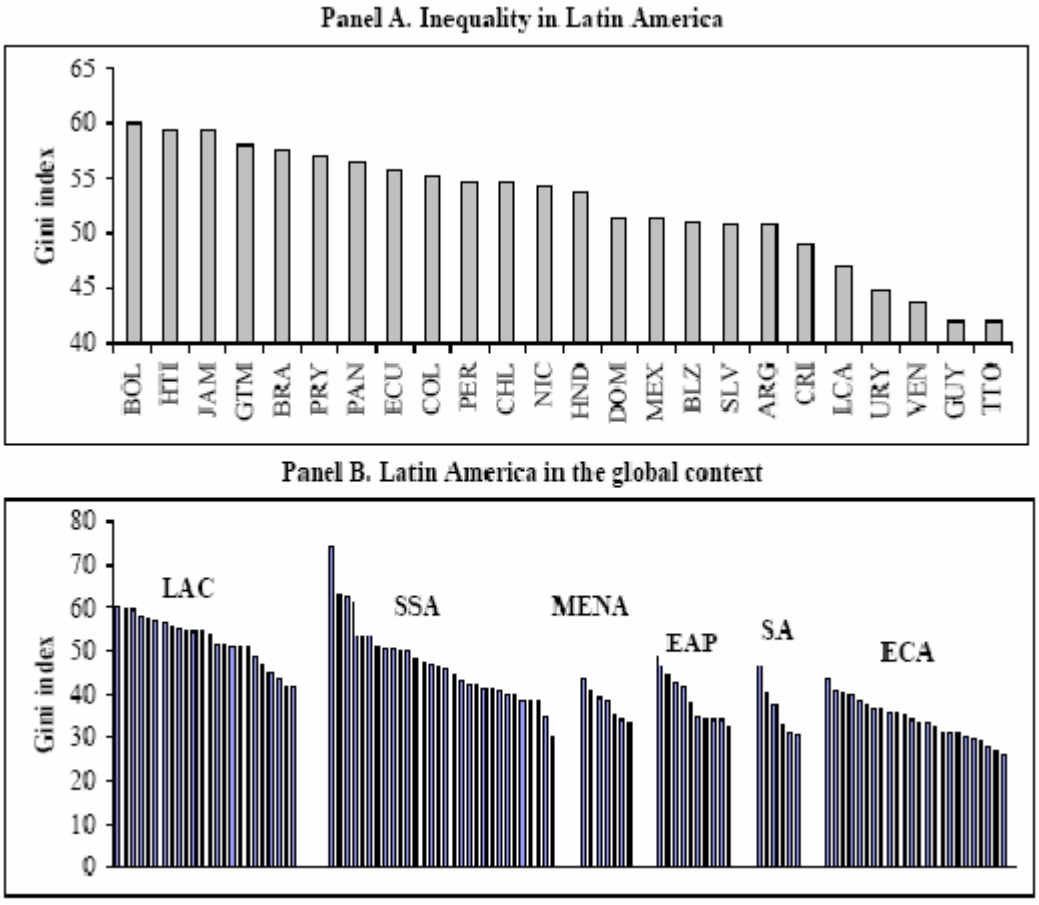
This paper examines the links between inequality and fiscal policy. Our main focus is on the potential of fiscal policy to redistribute resources in a way that ameliorates inequality. This narrow focus is justified because whatever the cause of a society's inequality, fiscal policy is one of the most powerful tools available for combating its ill effects. Indeed, in many cases fiscal policy can go further, and help overcome the factors that caused inequality in the first place. But we also examine the extent to which fiscal policy creates inequality. That is to say, we examine fiscal policy as both a cure for inequality, and its cause.

Our empirical focus is on the experience of Latin American countries. There are two reasons for this: (i) Latin America suffers an unusually high degree of inequality, and hence the problem is disproportionately pressing there; and (ii) a number of Latin American countries enjoy sophisticated public information bureaucracies that produce a steady stream of high-quality data on a wide range of economic and social characteristics, facilitating the study of inequality there. We supplement this regional focus with evidence from the wider world on points that are particularly compelling in their own right, or that complement the Latin American experience.

Such complementing is necessary because of the unfortunate lack of empirical evidence on the effects of fiscal policy on inequality in Latin America. Indeed, the broader empirical literature on fiscal policy and spatial inequality – including both developing and developed countries – is surprisingly small. Among others, Kim (2008) notes that "the literature does not provide a guide on defining a list of specific policy recommendations for reducing 'excessive' spatial inequality or increasing 'beneficial' spatial inequality" (p.35). For this reason, we focus on the two Latin American countries for which most evidence is available – Mexico and Brazil, and supplement this with a discussion of the most important fiscal instruments in use in Argentina, and how these have changed over the past few decades.

Inequality can be studied at two levels: the interpersonal level (within-group inequality), and the spatial level (between-group inequality). While both forms are important, this paper focuses on the latter. The significance of spatial inequality lies in both its empirical and theoretical aspects. Its empirical importance becomes quickly self-evident when one reviews summary evidence: spatial inequality is present in all countries, and in some reaches surprisingly high levels. Figure 1a shows inequality across Latin America, while figure 1b compares Latin American inequality with that of other regions. Figure 1b shows that inequality is systematically higher in Latin American countries than in Sub-Saharan Africa, the Middle East and North Africa, East Asia and the Pacific, South Asia, or Europe and Central Asia. It is worth noting that the Gini coefficient is on the vertical axis, and hence differences across regions that may appear modest at fist glance are actually quite large. Figure 1a shows inequality across Latin American countries in more detail. We can observe that inequality across the region varies from Trinidad and Tobago and Guyana, which boast European levels, to Bolivia and Haiti, which suffer some of the highest levels of inequality in the world.

Figure 1: Spatial Inequality Across Countries



Source: Lopez and Perry(2008)

If such stylized facts are insufficiently persuasive of the importance of spatial inequality, consider its theoretical importance. High levels of spatial inequality can produce resentment

between regions. This is especially true when spatial disparities coincide with ethnic, religious or political cleavages. Left unattended, spatial inequality can have serious consequences for the stability of a country, and in extreme cases may lead to national disintegration (see Shanker and Shah 2003, amongst others). In Latin America, Bolivia presents a clear case of the convergence of high levels of spatial inequality with geographic, ethnic, and political cleavages, and differences in natural resource endowments. The confluence of all of these factors has led to very high levels of political instability over the past decade, including the toppling of two presidents and the collapse of the entire political party system. We return to the case of Bolivia below.

What is spatial inequality?

Before proceeding, it is important to define what exactly we mean by 'spatial inequality'. Following Kanbur and Venables (2005), we define spatial inequality as a disparity in well-being due to discrepancies in social and economic factors across geography. 'Across geography' can mean areas as large (and far apart) as continents, or as small (and close together) as neighborhoods. While we recognize that inequality across countries is important, for the purposes of this paper we confine our analysis to inequality within countries. This restriction enables us to study policies used by central and decentralized government to try to reduce inequality.

Within a country, spatial inequality can exist at many levels: between states, provinces and districts, between rural and urban areas, between cities, and amongst neighborhoods. While we acknowledge the importance of all levels of spatial inequality within a country, we address all but neighborhood inequality here. This is because the neighborhood is typically too low an administrative level for central governments to formulate effective policies regarding inequality (Lall and Chakravorty 2005). Additionally, the complexity of the solutions required for many such problems is daunting, especially where big-city slums are involved. Slums are areas which have little access to public services, and often have no property or tenancy rights (many inhabitants are squatters). UN-Habitat (2006) estimate that 31.6% of the world's urban population lives in slums. Although the problem of slums is in no sense trivial, policy solutions – slum upgrading and property titling – are complex policy prescriptions that can lead to the creation of perverse incentives. It is our view that the complexity of the problem, and the specificity of likely solutions, justify addressing neighborhood inequality separately, and not in conjunction with the other categories surveyed here.

This paper examines the role of fiscal policy in exacerbating spatial inequality, and – more importantly – its role in counteracting the causes of inequality, or ameliorating its effects. We examine the various strategies and policy tools Latin American countries have used to reduce inequality, focusing especially on the cases of Mexico, Brazil, Argentina and Bolivia. We try to

ascertain why some countries' efforts have met with significant success, while others' have not. We do this by first examining the theoretical links between fiscal policy and spatial inequality in Latin America and further afield in section 2. Section 3 examines empirical evidence for the existence or not of such linkages across a broad range of countries. In view of the Latin American emphasis that dominates the rest of the paper, we take advantage of this section to review evidence from the rest of the world. Sections 4 and 5 examine the experiences of two countries – Mexico and Brazil – in much more detail, focusing on the shifting blend of policies each country has used over time to decrease inequality, and trying to identify their effects. Section 6 examines the current blend of fiscal policies in use in Argentina, and how these have changed over recent decades. Although evidence on their effects on inequality is much scarcer than for the other two countries, we try to form a view based on related, incomplete evidence. Finally we turn away from specific policies in section 7, to the more general reorganization of government powers, responsibilities and incentives that decentralization implies, and ask the question: Can decentralization lead to a greater equality of opportunities and welfare across space? We explore the ways in which this might come about, and then whether or not it does in fact, through the case study of Bolivia's 1994 decentralization. Section 8 concludes.

2. Theory: Fiscal policy as cause and consequence of spatial inequality

Fiscal policy makes use of two tools to attempt to minimize spatial differences in income and welfare: taxes and public expenditures. Taxes, as long as they are progressive, take resources away from the rich and place them in the government pool. These taxes are used by government to either provide subsidies – including direct cash transfers – or provide citizens with public goods and services. While taxes and subsidies lead to a direct redistribution, public spending is both a direct and indirect way of reducing spatial inequality. The direct effect of public investment is through building human capital and improving the quality of living. The indirect effect is to create an environment conducive to private investment. Such an environment can promote job creation, and help bring economic improvement to a region, thus narrowing the gap between regions.

Public spending can be classified according to two broad (and overlapping) dimensions. These are:

- **Universality:** The extent to which public goods and services are targeted to specific, identifiable groups or individuals, or provided universally to all citizens.
- **Connectivity:** The extent to which public goods and services provide benefits *within* a specific community, or *across* different communities by facilitating the movement of people and ideas.

As the name suggests, targeted spending can be delivered directly at the household or even individual level, allowing the exclusion of others. Conditional cash transfers (CCT) and scholarships are examples of highly targeted public expenditures with low universality. Universal spending, on the other hand, transcends the individual and household, as it is not possible to exclude people from its benefits. Education, health care, and roads are examples of public expenditures with high universality.

With respect to the second dimension – connectivity – many public goods and services produce benefits that are largely specific to a particular geographic space (be that a city, municipality or state). Individuals who have benefited from such expenditures may move elsewhere, taking some or all of these benefits with them. But the benefits themselves are spatially static, not transcending geography unless the individuals who carry them do. Examples of such expenditures include public education, health care, and irrigation. By contrast, the very nature of some public goods and services is to link different communities, regions or states. Such goods operate by transcending spatial boundaries and facilitating the circulation of people and ideas amongst different geographical units. Examples include roads, the postal service, telephone and data networks, television, radio, railroads, and scholarships.

The degree of universality of public services is particularly relevant when addressing problems of interpersonal inequality. Where the problem is highly specific, and the beneficiaries are easily identifiable, then targeted policies can be highly effective in reducing inequality. If the needy population is dispersed or difficult to identify, then universal goods may be a more feasible or cost-effective way of leveling the extremes of a population upwards.

Likewise, the degree of connectivity of public services is particularly relevant for addressing problems of spatial inequality. Where spatial inequality is the result of variations in the stock of infrastructure or public assets, locally-specific investments can be an effective response. But where inequality results from differential access to markets, or to a particular resource (e.g. a natural resource, or knowledge and information), then expenditures in connectivity-type goods can be the best way to overcome inequality.

This reasoning is offered as very general observations designed to help us think about the links between types of policies and types of inequality. They are not meant as “rules” of any sort. This is not least because the types of public expenditures that should be used to address particular problems of inequality should vary first and foremost according to the underlying causes of the inequality in question, and secondly according to contextual parameters of the country in question.

We can use these two dimensions to build a simple 2x2 matrix into which we can map most of the fiscal policies relevant for issues of inequality, as follows:

		Interpersonal Inequality	
		Targeted	Universal
Spatial Inequality	Locally-specific	Conditional Cash Transfers	Health Education Sanitation Water
	Connective	Scholarships	Roads Railroads Postal service Telecommunications

The matrix makes the further point that the two dimensions are inseparable. Policy action cannot be taken in, say, the connectivity dimension only. Hence attempts to counteract spatial inequality will inevitably affect interpersonal inequality as well, and vice versa. The choice of which type of inequality to address in isolation is not available.

Economic theory implies that fiscal policy is not only a solution to regional inequality, but can be a cause of it as well. This occurs when governments favor certain regions over others, allowing the former to accumulate wealth more rapidly, as occurred in Mexico (see below). Once this has occurred, reverting to a policy stance that is merely neutral may not be sufficient to level incomes and welfare. Active redistribution to poorer regions, plus a progressive investment profile that prioritizes deprived regions, may be called for. Examples of specific policies that can exacerbate inequality are regressive taxes, and non-compensating fiscal transfers, when regions rely mostly on their own resources, with minimal transfers from the federal government.

Fiscal policy often faces a trade-off between equity and efficiency. A small number of policies, including notably conditional cash transfers, can achieve both goals at once by extending and improving the operation of markets. But for most policy options, it is the case that some tend promote growth and efficiency, while others tend to reduce inequality. For instance, tax holidays on investments can lead to higher growth rates. Subsidies on industrial inputs should also enhance industrial growth. However, such tax breaks and subsidies tend to be centered on urban and industrial areas, which already benefit from high levels of government spending. Conversely, policies such as progressive taxes and subsidies on food and basic needs (which usually claim most of a poor household's income) can be used to minimize inequality. These send resources into the countryside and can help poorer regions catch up.

The decision of whether to pursue a pro-efficiency or pro-equity approach is made harder by the presence of strong arguments in favor of both. On the efficiency side, authors argue that

governments should focus their resources on areas likely to have the highest returns (De la Fuente and Vives 1995, Rodriguez-Oreggia and Roriguez-Pose 2004). This is expected to increase the economic pie and eventually benefit the economy at large (including the poor). On the equity side, many argue that it is unacceptable to have certain regions in the country unequally provided for just because of their location, and that inequality can reduce growth by fomenting political unrest, and because economically useful resources are in effect left untapped (Barro 2000, Persson and Tabellini 1994, Rodriguez-Oreggia and Roriguez-Pose 2004).

Attempts to measure this tradeoff directly have tended to confirm the findings of theory. Martin (1999) and Baldwin (2003), for example, show that improving the infrastructure of poor regions can attenuate industrial concentration in richer regions, but at the cost of slowing economic growth in the nation as a whole. Alonso (2001), on the other hand, warns that such findings might not hold if congestion in infrastructure use, which counteracts centripetal economies of scale and agglomeration, is taken into account.

3. Fiscal policy and inequality: cross-country evidence

Are these theoretical links borne out by data? How strong is the evidence that fiscal policy causes spatial inequality? How strong is the evidence that fiscal policy can reduce it? Empirical studies draw a clear link between high levels of spatial inequality and skewed public goods provision, pointing to the importance of fiscal policy in creating the underlying differences in endowments, knowledge and productive assets that cause spatial disparities to arise. Empirical research also points to the ability of fiscal policies to reduce existing inequality, or counteract the factors that cause inequality. But the evidence on this last point is much more mixed and ambiguous, with many studies finding that fiscal policies intended to reduce inequality have no effect, and some finding that such policies actually worsen inequality.

We begin with fiscal policy's role in producing inequality in Latin America, a region that is understandably prominent in this literature. In a study of Peruvian districts, Escobal and Torero (2003) find that the incidence of poverty in districts at sea level is 46.1%, but rises to 63.3% in areas 3,500 meters above sea level. They find a clear relationship between household welfare and geographic variables, highlighting that some of the poorest people live in the most geographically adverse regions. Deeper analysis reveals that these spatial differences are driven not by disparities in geographical characteristics, but rather by discrepancies in public goods provision across regions. Despite a general increase in public spending between 1999 and 2003, the government continued to favor urban areas over rural areas, thus exacerbating regional inequality. The greatest difference was in access to sanitation: while 84% of households had access to sanitation in urban areas, only 12% did so in rural areas.

Soto and Torche (2004) obtain similar results for Chile, a country often lauded as a Latin American 'tiger economy', where regional inequality has widened in recent years. The authors argue that growth in Chile has been largely driven by improvements in particular sectors (such as fishing, transportation and telecommunications), which are centered in particular regions. To the extent that growth in these sectors has benefitted from publicly-provided infrastructure, fiscal policy has played an important role in supporting certain regions' rapid development, resulting in an unequal growth rate between regions and increased spatial inequality.

Such findings are not limited to Latin America. In a study of Central Asia, Anderson and Pomfret (2004) found rural households significantly worse off than urban households in most countries. They attribute this to a strong public sector bias in favor of urban areas, especially where investment and public services are concerned. The two exceptions to this rule were Kazakhstan and Uzbekistan. In the case of Kazakhstan, low regional inequality is credited to low levels of variation in public goods provision. In a similar vein, low regional inequality in Uzbekistan is credited to redistributive policy that uses tax collection on social service provision to help mitigate regional disparities.

In Africa, Sahn and Stifel (2003) found that the population living below the poverty line is about 50% greater in rural areas than in urban areas. They attribute most of these differences to a skewed distribution of schools and health care facilities that favor urban centers. These results are tempered by Christiansen et al (2005), who argue that remoteness plays a vital role in aggravating poverty. Their study shows that poor transport infrastructure isolates regions from the capital and coast, leading to a lack of opportunities and an increase in inequality.

Regional inequalities have increased markedly in India and China in recent decades, as is chronicled by a small cottage industry of studies. In both cases, researchers have attributed inequality to a combination of factors, including reforms in fiscal and trade policies, and differences in regions' natural endowments. For India, Shankar and Shah (2003), Bajpai and Sachs (1996), and Nagaraj et al. (2000) all find that there has been a significant increase in regional inequality between 1980 and 1996. The highest increase in regional inequality occurred after 1992, when liberalization reforms were begun.

The period since reform began in China in 1979 has also seen regional inequality increase rapidly in that country. Kanbur and Zhang (1999) document that differences in annual growth rates between costal and inland regions have been as high as 3% over the last 20 years. Zhang and Fan (2006) find that while agricultural GDP per worker grew by 167% between 1978 and 1995 in coastal regions, it grew by only 108% in central regions, and a mere 56% in western regions. These differences are due to a combination of factors, including differential access to world markets given by geography (including proximity to Hong Kong and Taiwan), the availability of skilled labor, and

local and regional investments in infrastructure that facilitate industrial development and foreign investment.

The empirical evidence thus strongly supports the notion that fiscal policy can help create or exacerbate spatial inequalities, in line with what economic theory predicts. Once inequalities have been created, can fiscal policy help to overcome them? If fiscal (or any other) policy contributes to generating inequality in the first place, then eliminating or reversing such policies should help reduce inequality. And even in cases where policy did not contribute to inequality, leveling out regional disparities is part of what fiscal policy is for. Thus theory, supported by the sorts of evidence cited above, would unambiguously predict the answer to be 'yes'.

But strangely, empirical evidence for the ability of fiscal policy to counteract existing inequalities is not so clear cut. On the one hand, a number of single-country studies, like Mas, Maudos, Pérez and Uriel's (1994, 1995) work on Spanish regions, find that public investment in infrastructure spurs convergence. But for each of these, there seems to be a similar study that finds the opposite; hence Gorostiaga (1999) finds that public investment is not statistically significant for explaining convergence across the regions of Spain. Much the same is true across large cross-country studies. For a sample of 90 countries, Barro (1991) finds a weak negative relationship between public investment (as a proportion of private investment) and economic growth. But Easterly and Rebelo (1993) find that public investment – especially in transport and communications – has a positive and significant effect on growth for a sample of 100 countries.

Results are also ambiguous for smaller, less heterogeneous samples. On the positive side, Cashin (1995) estimates an endogenous growth model and finds a positive effect of public investment on growth for the countries of the OECD. Thomas (1996) finds much the same for European regions, using an aggregate indicator of infrastructure investment. De la Fuente (1997a) finds positive effects of public investment on growth for the countries of the OECD, albeit with decreasing returns to scale. Romero de Ávila and Strauch (2003) find that public investment in the EU-15 countries has a positive effect on economic growth in the long run. And in a sample of 42 low and middle-income countries, Hulten (1996) finds that public investment has helped to spur TFP growth. But on the negative side, Hulten (1996) also finds that the inefficient use of these public resources has reduced their effect on growth. And Kelly's (1997) study of 56 low and middle-income countries finds that high levels of public investment affect economic growth negatively.

How do we make sense of this evidence? Why, when the theoretical arguments are unambiguous, is the evidence so difficult to interpret? Beyond keeping a rough scorecard of the tally of positive and negative results (positives are out in front, but not by much), consider the substance of the results – especially the last two findings cited above. When used inefficiently,

public resources have a small effect on growth (Hulten 1996). One can easily imagine greater inefficiency reducing the effectiveness of public investment to zero. Taking this logic one step further (Kelly 1997), public investment that is both very high and very inefficient can easily subtract from national income. Indeed, there is much evidence that precisely this is what happened in the Soviet Bloc economies in the late 1970s and 1980s, when many public sector enterprises became value subtractors (e.g. Teichova 1997).

Hence the question is not fundamentally one of economic theory, but rather of the political economy of implementation and policy effectiveness. Can fiscal policy spur economic growth in poorer regions, and thus promote convergence? Studies such as Berndt and Hansson (1991), Conrad and Seitz (1992, 1994), Lynde and Richmond (1992, 1993a, 1993b), Morrison and Schwartz (1992, 1996), Avilés et al. (2001), Boscá et al. (2002) and Moreno et al. (2002) all chronicle how public investment can spur economic activity via reductions in business costs. These, in addition to the positive results cited above on the particular question of convergence, show us that the answer to this question in principle is 'yes'. Why, then, are econometric results so often insignificant or even negative? Because fiscal tools are misused or inefficiently applied. Specific measures intended to reduce inequality are distorted in implementation – captured by interest groups or mis-applied by inept bureaucracies. They do not have the effects intended not because the fiscal theory is wrong, but because policy implementation is poor.

This leads us to the further observation that studies operating at a high level of aggregation are unlikely to shed much light on the question of fiscal policy effectiveness. When issues such as the quality of implementation become key, approaches that abstract away from the variety of fiscal tools available, let alone issues of implementation, and condense "fiscal policy" into a single – or two or three – indicators (e.g. Barro 1991) are unlikely to provide us with the level of detail required if we are to reach informed conclusions about the ability of fiscal policy to equalize growth, income and welfare across space. Ultimately, the best way to research such questions is through detailed case studies, where dynamic processes of policy reform can be identified, their robustness characterized, and their effects on inequality traced in detail. For this reason, the remainder of this paper turns shortly to case studies of policy reform in Mexico, Brazil and Bolivia. But before doing so, we turn to one last handful of studies that attempt to unpack the concept of fiscal policy into discrete, well-defined components, and measure their effects in a nuanced, detailed manner.

Kim (2008) cites empirical findings across many countries – most of them developed – indicating that "industry localization economies (within-industry spillovers) are generally more important than urbanization economies (across-industry spillovers). Thus, at least in principle,

policy makers may be able to influence spatial inequality by targeting industry-specific subsidies or infrastructural investments." (p.36)

Kim (2008) cites further evidence that transportation and communications infrastructural investments are associated with declines in spatial inequality.

> "Several studies suggest that inter-regional infrastructure investments may contribute to the reduction of urban concentration (Henderson et. al 2001). Gallup et. al (1999) point to the importance of the historical investments in national navigable waterways, Rosen and Resnick (1978) to rail investments, and Henderson (2002) to the national road and highway investments. Baum-Snow (2007) shows that the introduction of interstate highways in the United States reduced central city population growth by at least 8% between 1950 and 1990." (p.39)

Martin and Rogers (1995) and Martin (1999) show that infrastructure investments can have different effects on inequality depending on the degree of connectivity they display. Locally-specific investments that reduce the cost of transport *within* poor regions can help to reduce industrial concentration in a country, and favor the disadvantaged region(s). But this may not necessarily lead to convergence in regional incomes, as the returns on capital and labor in different regions follow more complicated dynamics. By contrast, Faini (1983) and Combes and Lafourcade (2000) show that public investments that reduce the cost of transport *between* poor regions and international markets do lead to convergence in regional incomes. Thus if combating inequality is the objective, it is not enough to invest in "transportation". The nature of the transport links improved, and their articulation across space, are important considerations for determining their effects on regional incomes.

In a similar vein, Zhang and Fan (2006) show that different types of public expenditures have different effects. Moreover, the sector in which the public good is provided has an important effect on its level of impact. For China, the most significant form of public spending for reducing regional inequality is education. This is true both in the agricultural and the non-agricultural sector. The second most significant good is roads for the agricultural sector, and telephones for the non-agricultural sector. Given a scarcity of resources, they counsel, developing country governments should channel their funds towards the provision of goods that have the maximum impact.

Building on this empirical evidence, plus the theoretical ideas developed in the previous section, figure 2 provides a typology of fiscal policies relevant for issues of spatial inequality.

Figure 2: A Typology of Fiscal Policies Relevant for Spatial Inequality

Type	Examples	Relevance to Spatial Inequality
Govt. Spending		
Cash transfer	Lopez and Perry (2008) : low levels of government spending in Latin America explain the high level of inequality found in the region. They contrast this to Europe which uses a high tax rate and government transfers to equalize disposable income.	
- Conditional		
Targeted	World Bank (2004): Mexico has been able to reduce inequality through Oportunidades which is a cash transfer in exchange for households sending their children to school, getting regular health checks and having a nutritious diet.	High - should be progressive
Universal	This category seems to be seldom used in practice.	
- Unconditional		
Targeted	This category seems to be seldom used in practice.	
Universal	World Bank (2008): Argentina's universal public services system seems to have reduced inequality by increasing the lower end and capping the upper end of the distribution.	Modest - should be progressive
Government running expenses		Low - tends to be regressive
- Non-salary expenses		Low
- Salary expenses		Moderate - could be progressive, depending on public employee profile
Investment		
Human Capital	Costa-i-Font and Rodriguez-Oreggia (2005): found social spending to have a positive, but lagged impact on spatial inequality	High - impacts low income groups
	World Bank (2004): High levels of provision of social infrastructure, through FIAS to poor states lead to a reduction of regional inequality.	High – progressive
	Anderson and Pomfert (2004): High prioritization to social spending has helped keep spatial inequality low in Uzbekistan.	High - Spatial inequality is the lowest in Uzbekistan when compared to other Central Asian States.
	World Bank (2008): Argentina's universal public services system seems to have reduced inequality by increasing the lower end and capping the upper end of the distribution.	Modest - should be progressive
- Health	Escobal and Torero (2003): public spending differences explain most of the regional inequality found in Peru	High - potentially progressive
	Shan and Stifel (2003) found that inequality in Africa can be attributed to skewed distribution of health care facilities in favor of urban centers.	High
concentrated		
intermediate		
Dispersed		
- Education	Escobal and Torero (2003): public spending differences explain most of the regional inequality found in Peru	High - potentially progressive
	Zhang and Fan (2006) : find that educational spending has the highest impact in reducing spatial inequality in China	
Specialized and narrow	Zhang and Fan (2006) : Find that spending on agricultural R&D has a significant impact on reducing regional inequality within the agricultural sector.	Medium - progressive
Broad and basic	Shan and Stifel (2003) found that inequality in Africa can be attributed to skewed distribution of schools in favor of urban centers.	High - progressive
- Water and sanitation	Escobal and Torero (2003): public spending differences explain most of the regional inequality found in Peru	High - potentially progressive

Physical Capital	Costa-i-Font and Rodriguez-Oreggia (2005): Found that spending on infrastructure has an immediate and positive impact on reducing spatial inequality.	Low - impact mainly on medium and high income groups
- Connectivity		
Roads	Christiansen et al (2005), argue that poor transport infrastructure isolates regions from the capital and coast, leading to a lack of opportunities and an increase in inequality.	High - progressive
ICT	Zhang and Fan (2006) : find that spending on telephone networks has a significant impact on reducing regional inequality within the non-agricultural sector in China	Medium - progressive
Type	**Examples**	**Relevance to Spatial Inequality**
Subsidies		
- Luxury	This category seems to be seldom used in practice.	Regressive
- General	Gasoline subsidies in Venezuela, Iran, and many other oil-producing countries	Neutral
- Necessity	Tortilla subsidies in Mexico; Bread subsidies in Egypt	Progressive
Taxes	Anderson and Pomfert (2004): Efficient tax collection in Uzbekistan has helped keep spatial inequality very low in the country.	High - Spatial inequality is the lowest in Uzbekistan when compared to other Central Asian States.
- Commercial tax		
Tax holiday		
- Sales tax		
- Income tax		
Progressive	Lopez and Perry (2008) : low tax rates in Latin America explain the high level of inequality found in the region. They contrast this to Europe which uses a high tax rate and government transfers to equalize disposable income.	High - progressive
Proportional		High - regressive

Lastly, Kim (2008) counsels against high hopes when implementing any of these policies, warning that history offers few successful outcomes of policies to combat spatial inequality.

> "The recent attempts to reduce spatial inequality among the nations in the European Union present a cautionary tale. By most accounts, the EU policies implemented to reduce EU regional inequality have proved ineffective (Puga 2002). The policy objectives were to promote the development of lagging regions, to support areas facing structural difficulties, and to develop systems of education, training and employment. Between 2000-2006, the EU devoted €195,000 million (in 1999 prices), representing over 30% of total EU spending, and the Cohesion Fund added another €18,000 million to meet these objectives. Yet, despite the allocation of massive

resources, regional inequalities have not narrowed and by some accounts have even widened." (p.39)

4. Case Study: Mexico

Mexico is plagued by a very high level of poverty and inequality. According to the World Bank's (2004) findings Mexico had a Gini Index in 2000 was 54.6. Moreover, it has been documented that most of this inequality is spatially driven and is not due to household characteristics (Wodon 1999, World Bank 2006). Shanker and Shah (2003) while studying regional inequality calculated Mexico's regional weighted Gini index to be 0.3 in 1998[3]. This is more than seven times the level of regional inequality found in the United States (0.039 in 1997). The only other developing countries with higher regional weighted Gini indices in their study were Vietnam (0.41 in 1997), Thailand (0.442 in1997) and South Africa (0.341 in 1994). Therefore, regional inequality is a serious problem that needs to be addressed through targeted spending programs.

In the last two decades Mexico has in fact instituted a number of public spending programs with the explicit objective of reducing spatial inequality. These include programs such as Oportunidades, Pronasol, Procampo, and FAIS (*Fondo de Aportaciones para la Infraestructura Social*) to name a few of the most important. Oportunidades was founded in 2002, and was based on Progresa (which was created in 1997). The purpose of the program is to encourage school attendance, health checks and give nutritional support. This was achieved by giving families cash transfers in exchanges for doing the above. The IADB (2005) estimated that in 2004 around 5 million Mexican households were participating in this program. Pronasol was a development program initiated in the 1990s. It's agenda was to provide poor communities funds towards projects such as drinking water, paved roads etc on the condition that they contribute part of the funds and/or labor needed. However, the program had to be cancelled as it became evident that it was used largely for political purposes. Procampo was set up in 1994 and offered farmers direct subsidies in an effort to reduce poverty. The money was distributed by the Ministry of Agriculture. However, this too was used by the PRI [Institutional Revolutionary Party] as a political tool to further enhance their vote bank. Lastly, the government set up FAIS in 1997 in order to help improve the infrastructure available to the poor. It covered a wide range of goods such as potable water, health, sanitary facilities etc. The program was based on the realization that infrastructural provision can have a significant impact on the quality of life for the poor.

[3] This index was weighted by population and was calculated based on differences in Gross Regional Domestic Product (GRDP).

Given that the Mexican government established all these developmental funds it is worth investigating what the criterion for distribution was. This will enable us to better understand the outcomes of government spending.

Allocation criterion

De la Fuente & Vives (1995) argue that governments can have three bases for allocating resources. They can be pro-efficiency, which would entail allocating funds to regions with the highest expected returns. Such a government would be of the view that increased growth will have a trickle down effect thus benefiting the poor eventually. Alternatively the government can have a pro-equity strategy, which would entail allocating resources to the poorest regions, maybe even at the expense of the rich regions. Lastly the criterion could be an intermediate way. This would require that public investment not give any region an added advantage. De la Fuente & Vives (1995) agree that this is a difficult criterion to follow as it is not very well defined.

Rodriguez-Oreggia and Rodriguez-Pose (2004) set out to test which, out of the three above mentioned criterions, the Mexican government was following when distributing funds. Table 1 shows their ranking of the different states based on De la Fuente & Vives's (1995) three criterions.

If spending was following a pro-efficiency allocation then Nuevo Leon, Guanajuato, Mexico City and Quintana Roo should have received the bulk of the funding as they had the highest expected returns. If the goal was to minimize inequality then Chiapas, Oaxaca, Tlaxcala and Michoacan should have received most of government spending as they were the four poorest states. Lastly, if they were wanting to have neutral results (i.e. the third alternative) then Guanajuato, Puebla, Mexico City and Chiapas should have received the largest share of resources.

Table 1: Expected returns, income per capita and allocated stock of economic public infrastructure

State	(1) Expected return	(2) Rank of returns	(3) Pc* GDP needs	(4) Rank of GDP	(5) Mixed ranking	(6) Pc* federal public stock of capital	(7) Rank of stock
Nuevo León	211	1	171	29	13	81	16
Guanajuato	161	2	71	12	1	44	32
México	160	3	85	16	3	53	29
Quintana Roo	158	4	186	31	22	118	7
Jalisco	147	5	103	19	7	70	23
Puebla	141	6	66	8	2	46	31
Baja California Sur	141	7	130	26	18	92	12
Chihuahua	140	8	133	27	21	95	10
Aguascalientes	137	9	108	23	14	79	18
Morelos	129	10	99	18	11	77	20
Campeche	126	11	178	30	26	141	4
Yucatán	125	12	79	14	10	63	24
Coahuila	123	13	124	25	25	101	9
Durango	118	14	83	15	12	71	22
Tabasco	118	15	70	11	9	59	26
Zacatecas	108	16	57	5	5	53	28
Sinaloa	104	17	89	17	20	86	13
Guerrero	103	18	60	6	6	58	27
Sonora	96	19	118	24	28	124	6
Chiapas	95	20	47	1	4	49	30
Querétaro	92	21	108	22	27	118	8
Tlaxcala	89	22	55	3	8	61	25
Hidalgo	83	23	67	9	15	80	17
San Luis Potosí	81	24	75	13	24	93	11
Veracruz	80	25	63	7	17	78	19
Nayarit	79	26	68	10	23	86	14
Tamaulipas	75	27	104	20	29	139	5
Distrito Federal	70	28	256	32	32	366	1
Michoacán	68	29	56	4	19	82	15
Oaxaca	65	30	48	2	16	73	21
Baja California Sur	54	31	136	28	31	252	2
Colima	51	32	106	21	30	209	3

[a] 1993 data. All columns, except rankings, are normalized (average = 100). The mixed ranking is made adding up the rankings in columns (2) and (4).

Source: Rodriguez-Oreggia and Rodriguez-Pose (2004)

Table 2 documents the actual patterns of spending in Mexico from 1970 to 1999. From 1971-1985 the four states to receive the most funds were Tabasco (334), Campeche (326), Baja California Sur (253) and Quintana Roo (221). In 1985-1999 the four largest recipient were Campeche (751), Distrito Federal (253), Tabasco (219) and Baja California Sur (179). From the table above it can be seen that the Mexican government clearly was not aiming to maximize efficiency or reduce inequality and neither was it trying to maintain a neutral approach. Interestingly, the four states who received the lion's share of government resources from 1970 to 1999 were some the richest states in the country, while the fifth one was a middle income state. On the GDP ranking Distrito Federal was the richest state ranking 32, followed by Quintana Roo at 31,

Campeche at 30 and Baja California Sur at 26. Tabasco, the middle income state, had a ranking of 11[4]. Furthermore, the only state to qualify on the grounds of efficiency was Quintana Roo which ranked 4. The others had a rather low ranking on the expected returns ranking with Distrito Federal ranking 28, Campeche was 11, Baja California Sur was 7 and Tabasco ranked 15[5].

Table 2: Total public investment per capita (average = 100)

State	1970–76	1976–82	1982–88	1988–94	1994–99	1971–85	1985–99
Aguascalientes	51	42	64	79	63	47	67
Baja California	118	100	93	62	52	106	68
Baja California Sur	288	257	196	208	149	253	179
Campeche	115	383	750	573	712	326	751
Coahuila	134	125	80	109	68	119	86
Colima	163	164	193	109	93	174	132
Chiapas	96	113	52	49	121	112	64
Chihuahua	64	55	52	50	48	56	49
Distrito Federal	144	142	232	345	173	159	253
Durango	58	48	52	56	59	51	53
Guanajuato	48	32	26	27	39	36	30
Guerrero	77	48	55	67	63	56	61
Hidalgo	118	64	74	104	107	84	94
Jalisco	42	29	35	32	25	33	31
México	42	23	26	32	28	28	28
Michoacán	86	58	132	61	43	78	78
Morelos	48	35	39	55	50	39	48
Nayarit	67	64	52	171	58	62	98
Nuevo León	61	61	58	41	60	65	47
Oaxaca	77	58	58	76	77	64	70
Puebla	29	23	29	26	33	25	28
Querétaro	64	64	64	53	65	67	53
Quintana Roo	339	187	145	108	95	221	105
San Luis Potosí	45	42	52	62	46	45	51
Sinaloa	77	77	64	77	58	77	66
Sonora	99	80	80	64	72	84	72
Tabasco	240	421	145	176	392	334	219
Tamaulipas	157	148	87	74	101	146	84
Tlaxcala	48	39	39	48	50	41	45
Veracruz	109	142	93	93	88	130	92
Yucatán	58	42	52	80	68	48	66
Zacatecas	38	35	32	34	45	37	35

Source: Rodriguez-Oreggia and Rodriguez-Pose (2004)

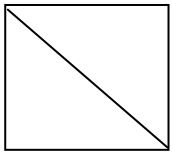
Thus it is clear, the authors claim, that the government was not following any of the three criteria set out by De la Fuente & Vives, (1995). If anything, it could be argued that the government's strategy seemed to be pro-rich spending. More likely, the real underlying criterion of allocation is political, which is why richer regions that are more abundant in political contributors receive higher allocations. The next subsection lays out the results of the government spending programs supporting the claim that there was a clear bias towards rich states.

[4] Ranking was 1 for the poorest state and 32 for the richest.

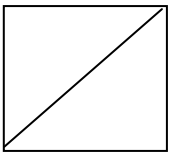
[5] Ranking was 1 for the highest expected return and 32 for the lowest.

Results of Mexico's developmental spending

Before getting into the details of the results it is worth highlighting the extent to which poor states rely on federal transfers. Figure 2 provides a breakdown of states' own resources and various federal transfers. States are ordered from poorest to richest based on the *Consejo Nacional de la Población* (CONAPO), index of marginality for 2002. The graph clearly illustrates the meagerness of poor states' own resources and their extreme reliance on federal transfers. Focusing on the black segments at the bottom of each bar, we see that the poorest states have up to 90% less own revenue than some of the richer states. But this does not mean that they receive greater distributions of central government resources. None of the next four lighter-shaded segments seems to vary systematically with either states' poverty ranking, or with their own resources. As a result, there is no relationship between total public resources and states' poverty rankings. This point is clearest at the aggregate level. If overall allocations were pro-equity, we would expect the bars in the chart to line up along a downward-sloping line, perhaps looking something like this:

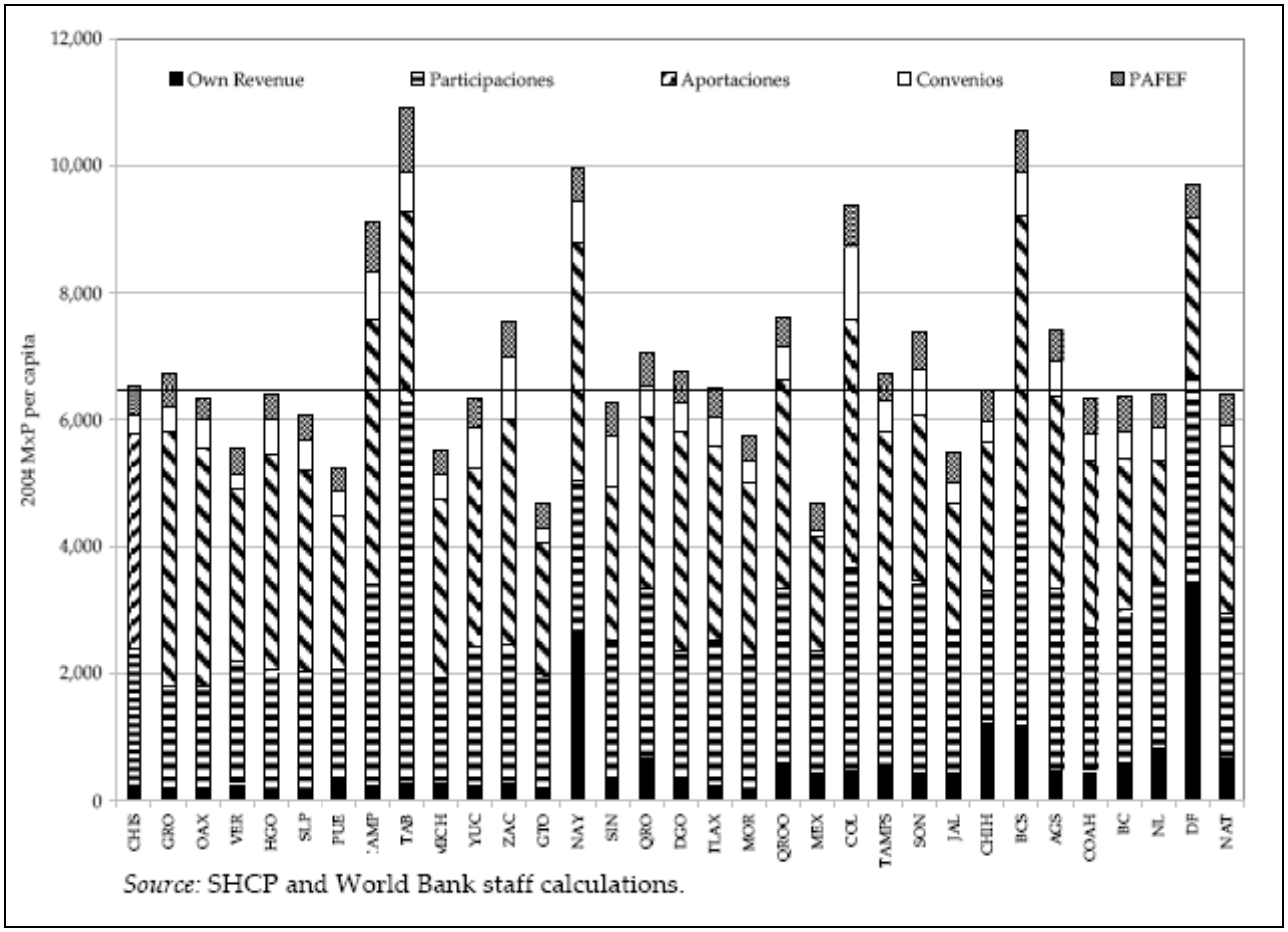


If total allocations were pro-efficiency, we might expect the bars to line up along an upward-sloping line, with the most productive (and hence richest) states receiving more resources, perhaps looking something like this:



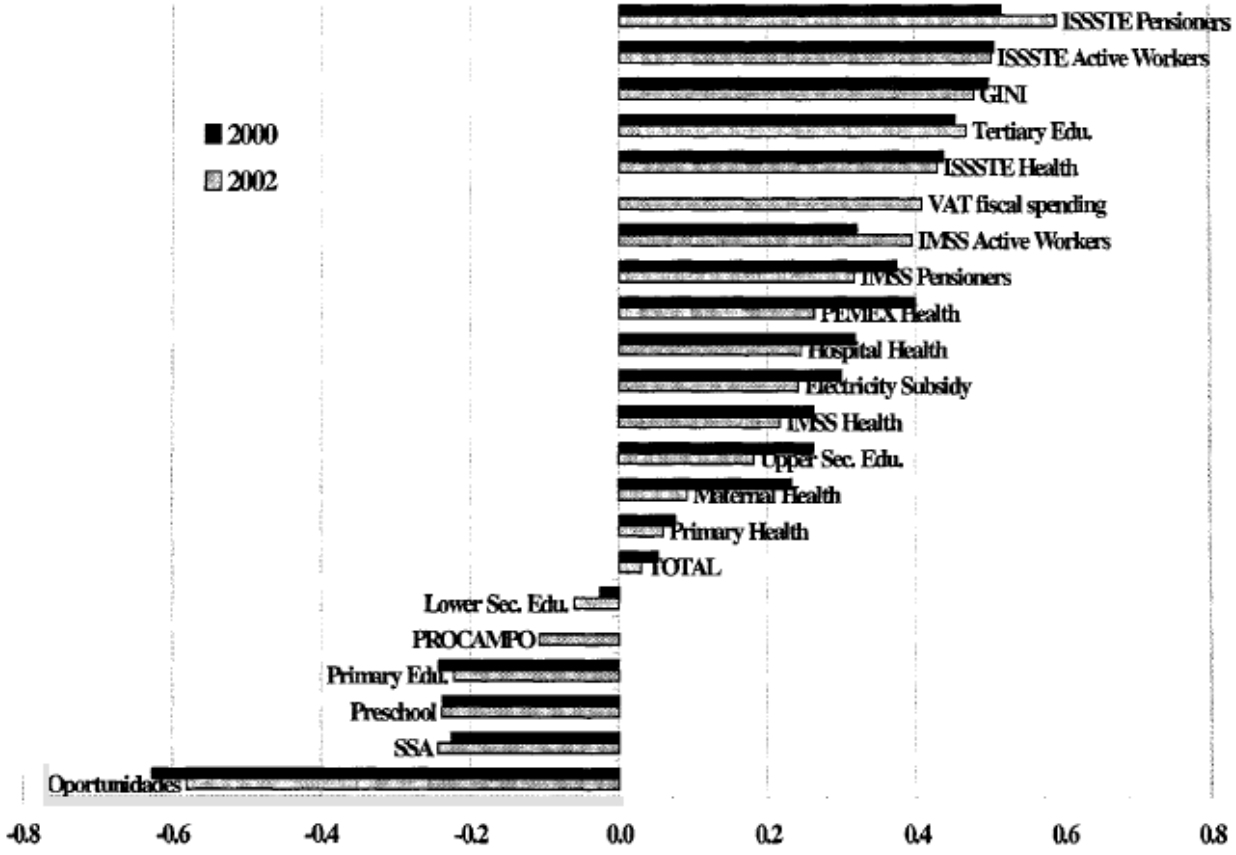
But in fact we see neither pattern. The "pattern" that we do see appears somewhat random, unrelated to poverty, states' underlying own resources, or efficiency and growth.

Figure 2: Geographic distribution of public resources as a share of GDP 2002



Further evidence confirms the view that Mexico's past spending experience has not favored the poor much. The wide array of programs that the Mexican government instituted in 2000 and 2002 are shown in figure 3. The graph shows various types of social spending and subsidies provided by central government. These programs have been placed on an index ranging from -1 to 1, where -1 indicates that all the funds went to the poorest household (thus being highly equalizing), 0 implies that everyone received the same amount, and +1 shows that funds were spent on the richest households (i.e. worsening inequality). It is clear from figure 3 that most programs tended to benefit richer households as opposed to the poor.

Figure 3: Government spending programs (2000 and 2002)

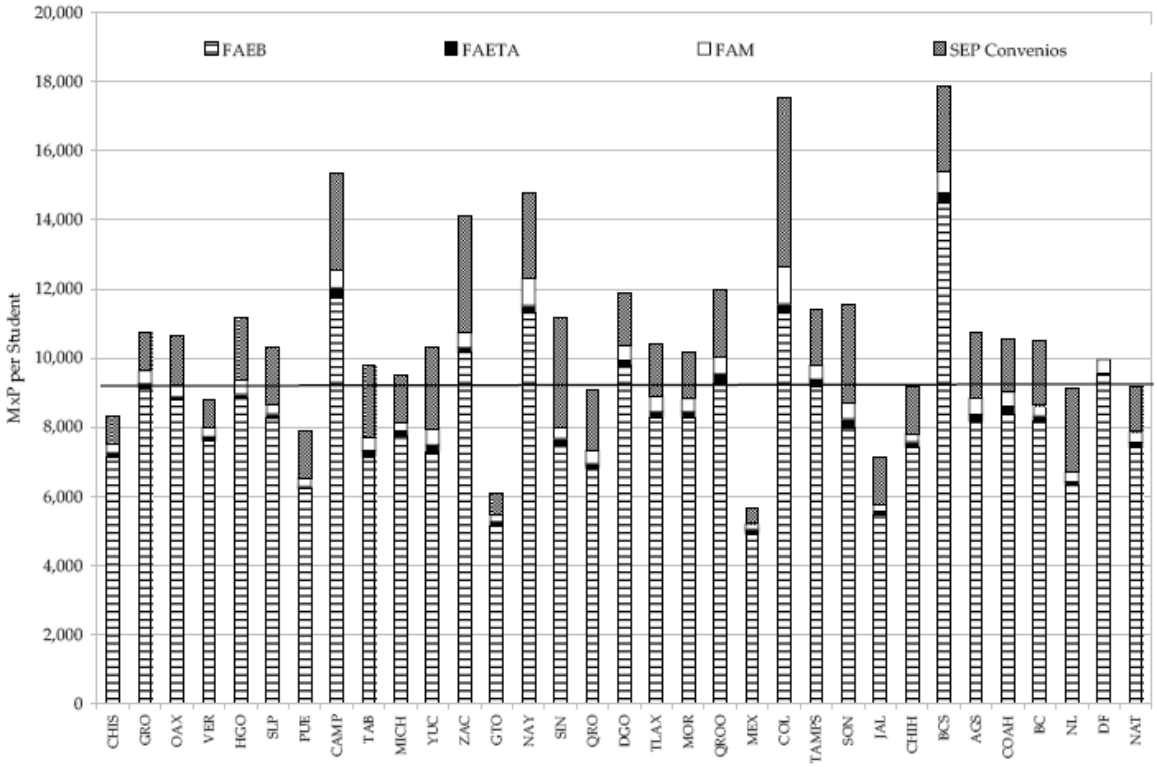


Note: The GINI refers to the distribution of private income. *Procampo* is not reported in 2000 because the sample of beneficiaries captured by the 2000 survey is not representative. VAT fiscal spending refers to exemptions and the zero VAT rate.[13]
Source: Background work for World Bank (2004) and SHCP (2004) for the VAT fiscal spending.

A breakdown of public spending on three indicators of well-being – education, health and agricultural eclectic subsidies – further validate these findings. Figure 4 illustrates federal transfers to the three respective areas of public spending. States are arranged from the poorest to the richest. It can be seen that while health spending and agricultural electric subsidies had a clear rich state bias, spending on education too was slanted in favor of the better off states.

Figure 4: Federal Transfers:

Figure 4a: Principle Federal Expenditure on Basic Education 2004



Note: States are arranged with the highest poverty rates on the left and lowest on the right, according to the CONAPO index of marginality.
Source: SHCP and SEP.

Figure 4b: Geographic distribution of agricultural electric subsidies 2002

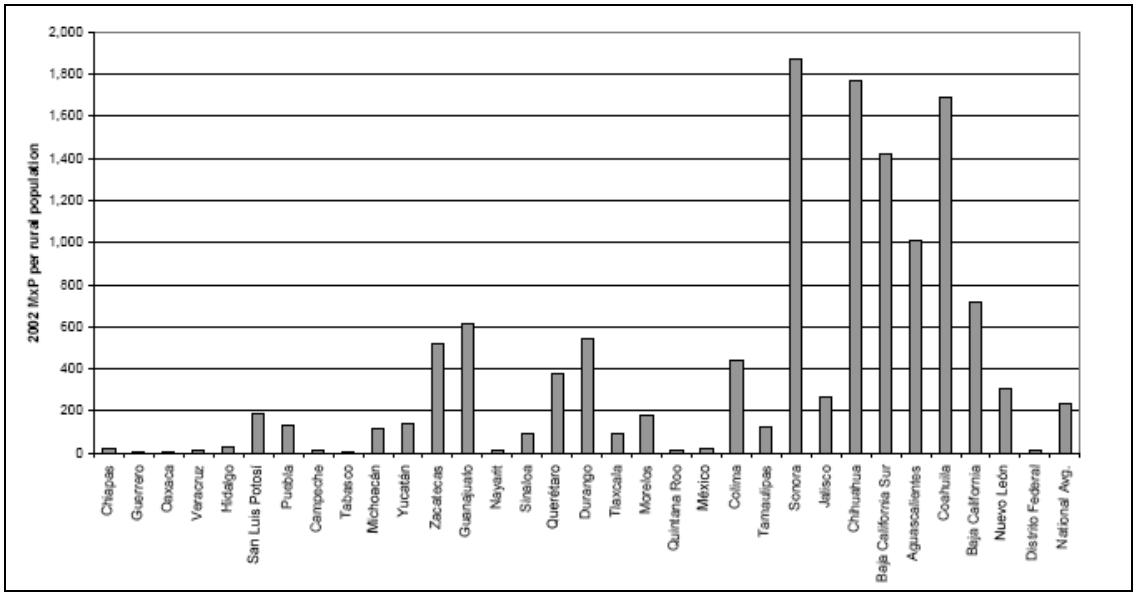
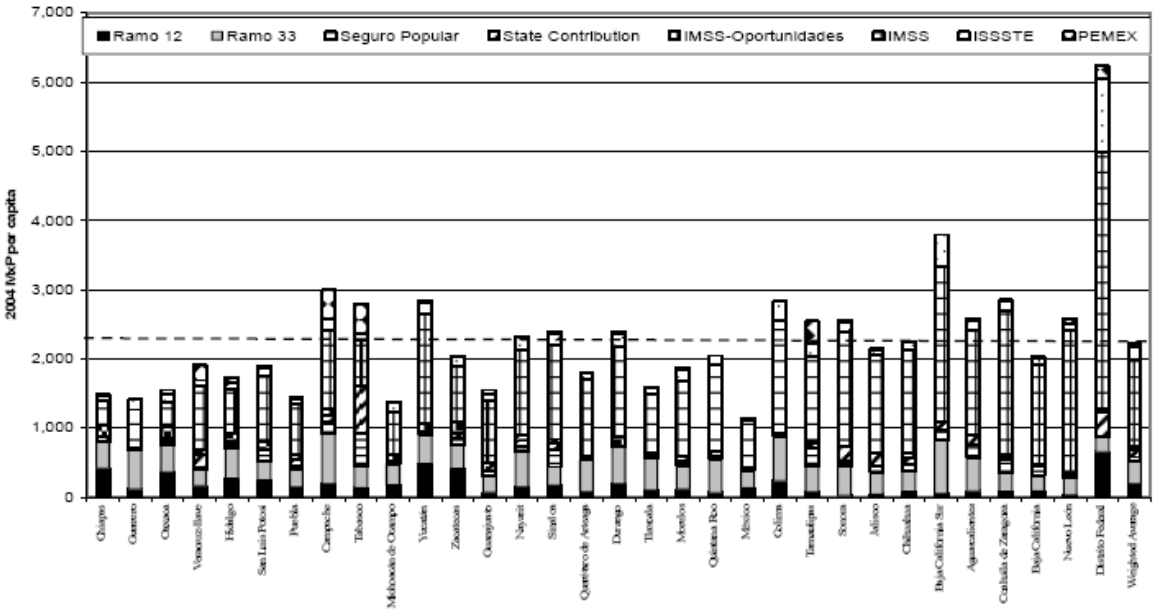


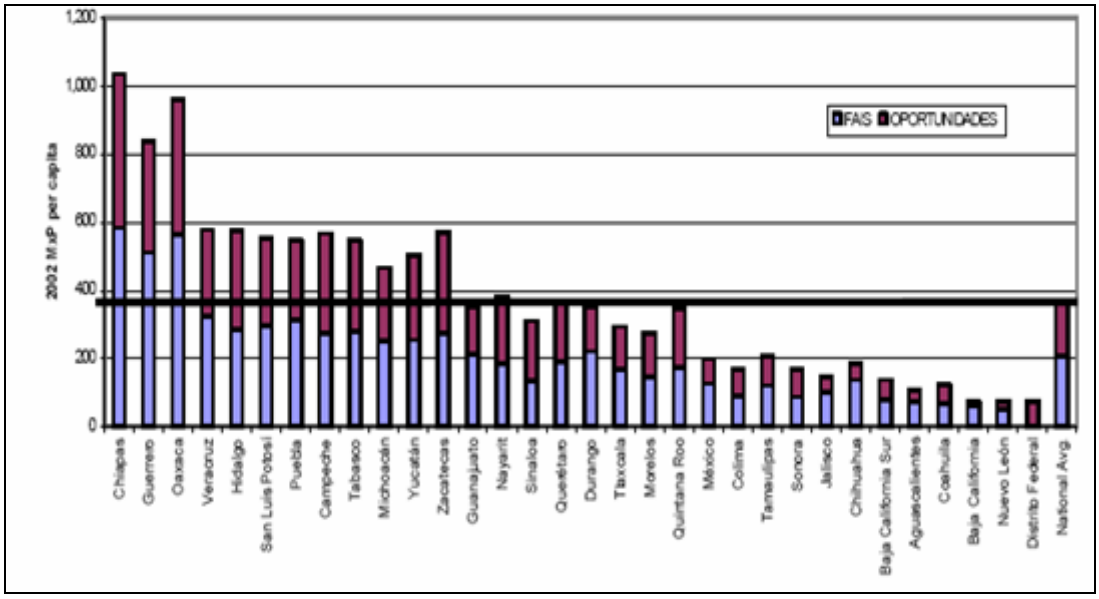
Figure 4c: Distribution of Health Sector Expenditure per Capita 2004



Note: Ramo 12, FASSA, and state contributions exclude *Seguro Popular*. *Seguro Popular* includes the federal and state resources. States are arranged with the highest poverty rates on the left and lowest on the right, according to the CONAPO index of marginality.
Source: SHCP and World Bank staff calculations.

However, all is not lost for the poorer regions of Mexico. The government has been able to institute two targeted anti-poverty programs; Oportunidades and FAIS. Figure 5 shows how the Mexican government has been successful in targeting the marginalized states in 2002 as far as these two programs are concerned. While these funds are not enough to reduce the gap between the rich and poor states of Mexico they, nonetheless, do help to some extent.

Figure 5: Geographic distribution of targeted anti-poverty spending 2002



Why does poverty targeting so often fail?

As the above analysis has shown, the Mexican government has been generally unsuccessful in targeting poor states. Instead it seems that they have targeted rich states, often to the detriment of the poor. Moreover, it is clear from the evidence presented above that expenditures do not target areas with the highest return, and so do not maximize growth. Neither do expenditures seem to follow some sort of intermediary criterion. The question then is: what is driving the allocation of federal funds in Mexico? One possible explanation we extend is political targeting – the use of political fund to buy votes for the ruling party.

The presence of patronage politics, coupled with low levels of political institutionalization is found in most developing countries (Chabal and Daloz 1999), Mexico being no exception (World Bank 2003). Low levels of institutionalization reduce the checks and balances on incumbent politicians, thus enabling them to engage in rent-seeking and political targeting – the only constraint being their ambition for re-election. In Mexico's case re-election was not a seen as a major constraint as the country was largely ruled by one party – PRI.

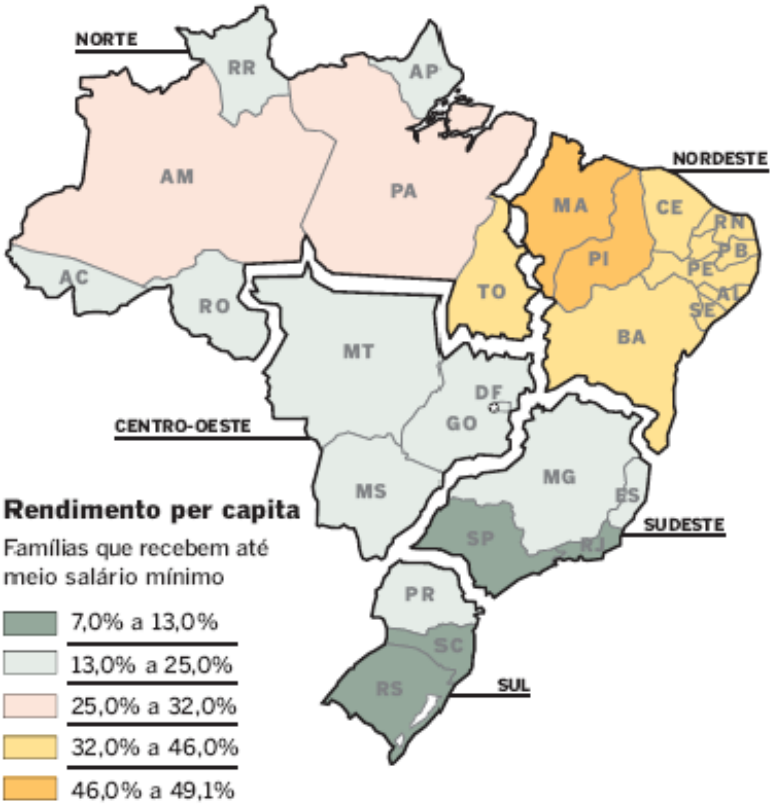
This was particularly stark in the case of Pronosol where allocation was given in return for votes (Diaz-Cayeros and Magaloni 2004). However, the World Bank's report on poverty in Mexico (2004) argues that the government is trying to reduce this by moving away from programs like Pronosol, and providing more targeted schemes like Oportunidades. The results of these shifts are yet to be seen.

It could be argued that one of the reasons for the success of Oportunidades has to do with the nature of the program itself. It aims to provide households with cash transfers in exchange for sending their children to school and going to health clinics. Also, it makes direct cash transfers so as to help improve the nutritional level of households. A program like this has two advantages. Firstly, it clearly allows the target group to be identified; and secondly, benefits can be easily stigmatized for richer populations, thus increasing the rate of successful targeting and hence efficiency of expenditure.

5. Case Study: Brazil

Brazil suffers from two inter-related problems – a very high incidence of poverty, and a very high level of inequality. Herrán (2005), when analyzing the economy of Brazil, highlights that the high level of poverty is driven by extreme inequality as opposed to the capacity of the country to generate income. Pochman et al. (2003) find that the richest 1% enjoy an income equal to that of the poorest 50%. Brazil's Gini index in 2001 was 59.0 (World Bank 2004). Moreover, the poor are concentrated in the North, thus causing spatial inequality. The figure below illustrates the

geographical distribution of the poor in Brazil. As can be observed from the map below, the north has a much higher number of poor households as compared to the South (RR and AP are of course an exception).



Source: OESP 04/10/05 from Atlas IBGE 2000, MDS (08/2005), PNAD 2003 and IBOPE (10/2005)

Herrán (2005) documents that in 2000, 24% of inequality was explained by regional differences, while 76% was due to household-specific characteristics. Table 3 below is an extract of the table he uses, giving a break-up of both types of inequality in Brazil between 1991 and 2000. Within the different types of ‘spaces’, the main contributor to total inequality in 2000 was the municipality (14%), then the region (8%), and lastly the state (2%).

Table 3: Components of Geographic inequality in Brazil (2002)

Components of inequality	Inequality (Theil Index)		Changes 1991-2000	Contribution to total inequality (%)		Changes 1991-2000
	1991	2000		1991	2000	
Total Brazil	0.77	0.76	-0.01	100.0	100.0	...
Between regions	0.08	0.06	-0.02	11.0	8.0	-3.0
Between states in the same region	0.03	0.02	-0.01	3.0	2.0	-1.0
Between municipalities in the same state	0.13	0.11	-0.02	17.0	14.0	-3.0
Between families in the same municipality	0.53	0.58	0.04	69.0	76.0	7.0

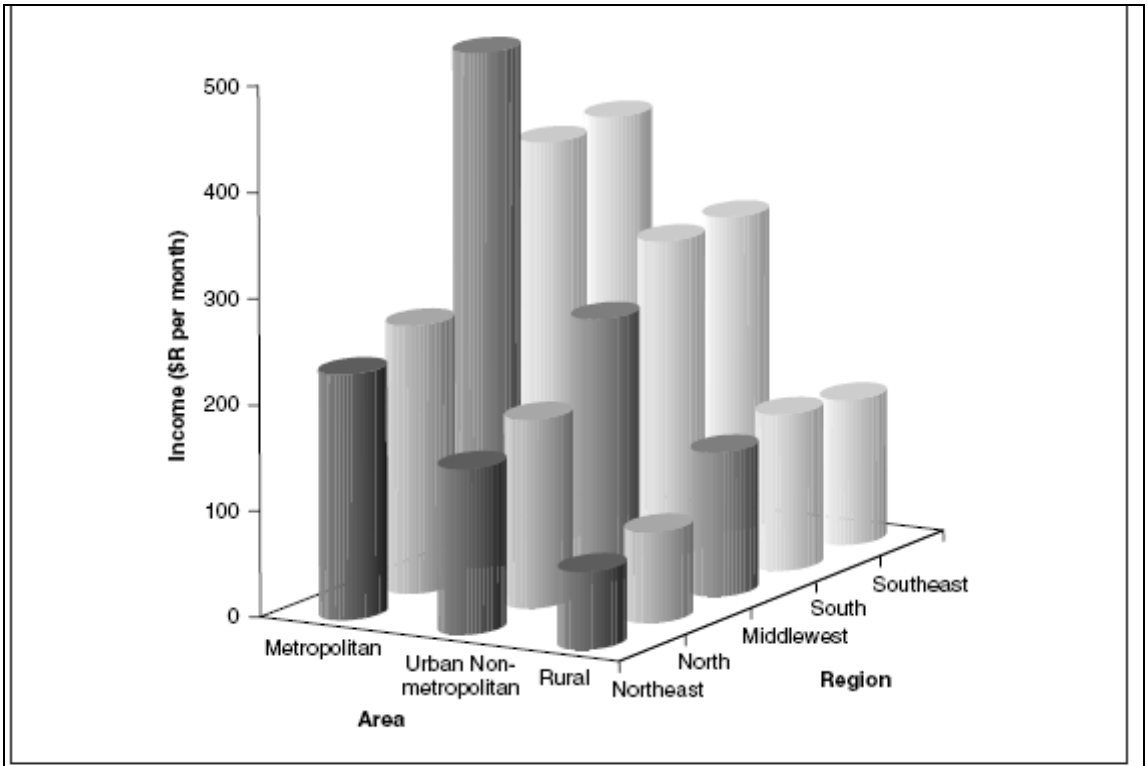
Source: Barros et al (2004a).

cited in Herrán (2005)

Even though the estimated value of inter-personal inequality is three times that of spatial inequality, we still believe it is worth studying (and formulating policies for) spatial inequality in Brazil for three reasons. Firstly, although decomposing inequality by type in this way is a useful exercise in itself, it nevertheless begs the question of why so many poor families are located in the Brazilian north (and especially northeast), or —in a related point—why income extremes amongst families are so high. Secondly, even on Barros et al.'s numbers – which are comparatively conservative within the literature on Brazil – spatial inequality still accounts for 24% of total inequality. And thirdly, spatial inequality is largely driven by differences in either public goods provision or economic opportunities, or both, and as such should be particularly susceptible to public policy interventions. As mentioned earlier, an increase in public goods provision would attract private investment to the region, which should help to improve inter-personal inequality as well. The matrix in section 3 shows more generally the clear overlap in policies targeting spatial and interpersonal inequality. Therefore, focusing on spatial inequality does not ignore interpersonal inequality.

The World Bank (2004) report on inequality and economic development in Brazil highlights some of the stark differences found between regions. For instance, life expectancy at birth ranges from 63.2 years in Alagoas to 71.6 years in Rio Grande do Sul (p.3). Also, while the incidence of poverty is only 3.1% in Sao Paulo's metropolitan region it is more that 50% in the rural northeast (p.3). Furthermore, as the figure below shows there are clear differences in income based on spatial differences.

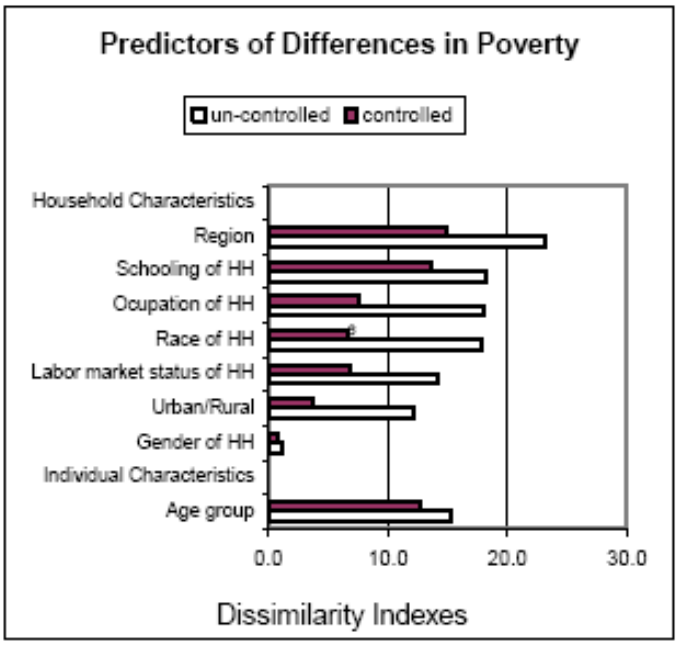
Figure 6: Mean Household per Capita Income by Region and Area (Rural-Urban) – 1999

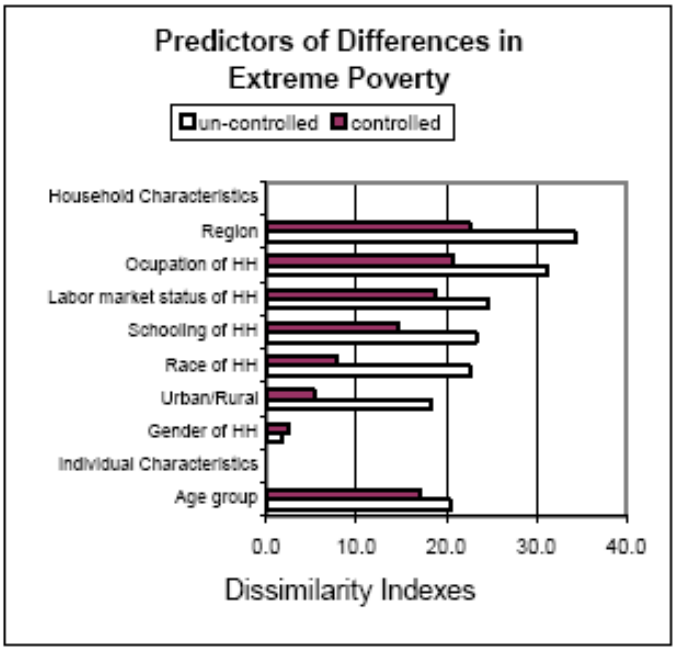


Source: PNAD 1999.

The figure above shows that the incidence of poverty is much higher in the Northeast than in Southeast regions. Also the incidence of poverty is much more severe in rural areas as opposed to urban areas. The impact of regional differences in driving inequality is further highlighted by Herrán's (2005) regression results, which control for education, occupation of household, race, labor market status of household, urban/rural divide, gender of household head, individual characteristics and age group. This is shown in figure 7.

Figure 7: Poverty predictors





Source: Herrán (2005)

The Brazilian government, recognizing the high level of inequality in the country, has over the years instituted **programs** to try and reduce poverty and close the gap between the rich and the poor. The main one, introduced in October 2003 is Bolsa Familia (the Family Bonus Program), a federal cash transfer scheme. This program integrated four previous schemes; Bolsa Escola (school bursary from the Ministry of Education), Bolsa Alimentacao (food allowance from the Ministry of Health), Cartao Alimentacao (food card) and Auxilio Gas (gas allowance from the Ministry of Mines and Energy). All of these were conditional cash transfers given on the bases of household income. The objective of Bolsa Familia was to reduce inequality and avoid future poverty related problems. Allocation was based on household income (had to be a maximum of around US$ 60 a month).

Results of Developmental Spending

The results of the impact of public spending on spatial inequality seem to have produced mixed results. Herrán's (2005) study shows (see table 4) that the gap between rural and urban households has decreased. Poverty in urban areas contributed an increase of 20% points towards total poverty, while rural areas' contribution to total poverty actually fell by 25% points. Moreover, there has been an increase in urban population by 13%, while the share of the population living in rural areas has fallen by 21%. Therefore the overall fall in the incidence of poverty was 5% in rural households while it was only 1.2% in urban ones. Furthermore, the Northeast too has seen a substantial reduction in poverty (though the Southeast has reduced poverty more). However, the North has seen an increase in the incidence of poverty. So while inequality has gone down over some spaces, it has increased over others. IPEA (2006b) supports these findings with evidence that

the overall condition of the poor improved between 2001 and 2004 as the figures dealing with inequality and extreme poverty fell.

Table 4: Group with the Highest Changes in Poverty Share (1981-2002)

Selected Groups	Changes in poverty share[6]	Changes in population share[7]	Changes in poverty incidence
Urban households	+ 20% points	+ 13%	-1.2%
Households in the North	+ 6% points	+ 3%	+ 7%
Rural households	- 25% points	- 21%	- 5%
Households in the Southeast	- 5% points	- 1%	- 11%
Households in the Northeast	- 3% points	- 1%	- 10%

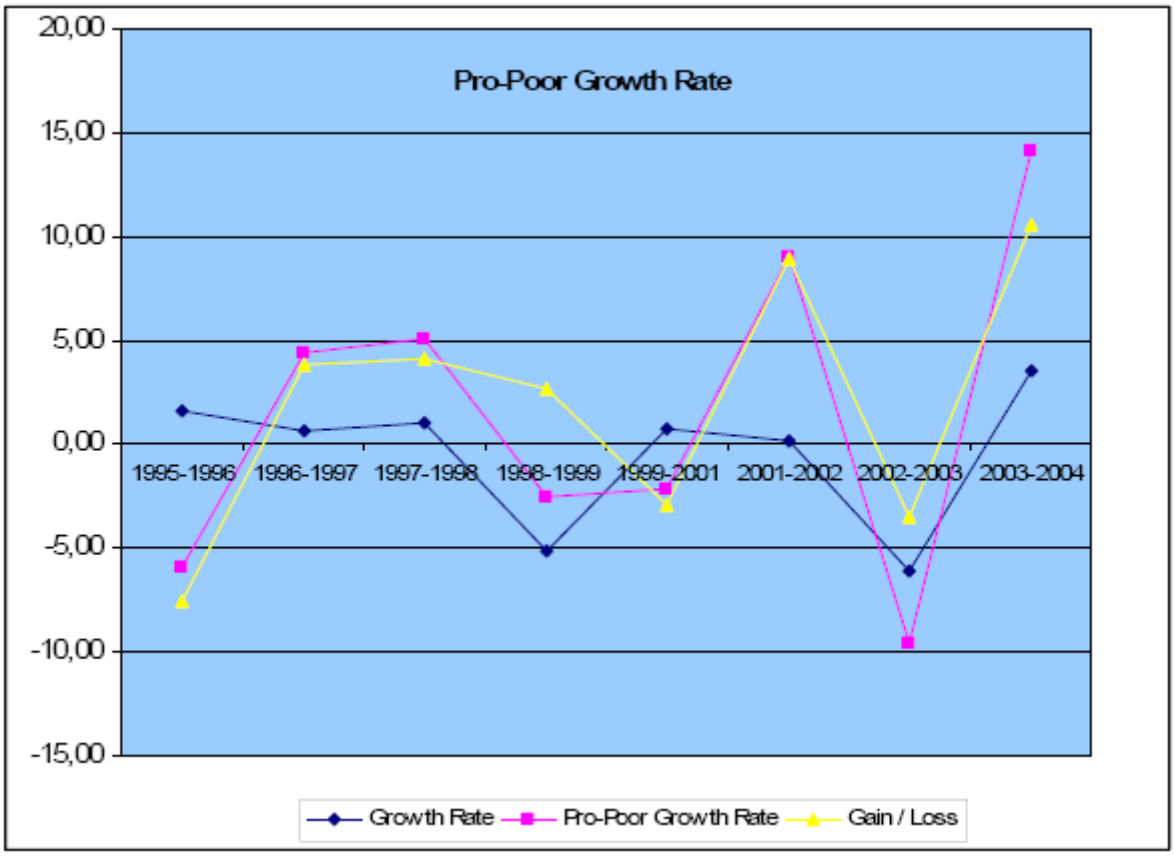
Source: Herrán (2005)

Kakwani et al. (2006) argue that Brazil has in recent years had pro-poor growth, i.e. growth that proportionally benefits the poor more than the rich. Their findings are presented in the graph below. Interestingly, it can be seen that after 2003 there is a sharp increase in pro-poor growth after (which is when Bolsa Familia was initiated). They credit pro-poor government spending as playing a crucial role in protecting the poor from market crises.

[6] The change in a group's contribution towards the total incidence of poverty in Brazil.

[7] The percentage of the population residing in a particular group.

Figure 8: Pro-poor Growth Rates



Source: Kakwani et al. (2006)

Reasons for success

It can be argued that one of the main reasons Brazil has been able to successfully target its anti-poor programs is that – like Oportunidades in Mexico – it is very easy to identify the target group, and it is possible to stigmatize program benefits for richer populations. Cash transfers are given in exchange for school attendance, for health checks, and other welfare-related issues. They thus not only provide the household with an income, but also ensure that they have the conditions needed to secure economic resources for themselves in the future. Much more such reform is needed in Brazil, whose population continues to suffer very high levels of inequality and poverty.

6. Case Study: Argentina

Even in comparison to other Latin American countries, Argentina has seen large changes in its fiscal policy stance, and relations between the state, the economy, and society more broadly. In the space of one generation, the country moved from a social democratic model of active social integration, to one that approximated the so-called "Washington consensus", featuring resource allocation based on market signals. Before discussing Argentina's principal fiscal policies today with relevance to inequality, it is important to understand this background, as it has implications not

only for the level of spatial inequality that the country now faces, but also the legacy upon which the present policy mix is at least partly based.

Fiscal Policy: Historical Background

Until about 1976, Argentine policy sought to guide the economy to full employment through Import Substitution Industrialization (ISI), active labor market policy predicated on strong unions, and high levels of social investment via universal public services operated by the state. The combination of rapid oil price rises of the 1970s with the 1976-1983 military dictatorship known as the "Process of National Reorganization" put an end to this policy stance, and began a long, uneven process of state retrenchment from economic intervention that finally culminated with the privatizations of the mid 1990s. Alongside such predictable measures as the closing of Congress, the Supreme Court, and the suspension of political parties, the 1976 military junta announced a series of changes in economic policy that amounted to a new policy framework. Some of the most important of these are:

- Elimination of protective tariffs and regulations
- Elimination of state subsidies to firms and industries
- Liberalization of financial markets
- Suspension of workers' rights and prohibition of strikes
- Intervention of unions, including the General Confederation of Labor
- Intervention of the General Confederation of Employers

(Ministerio de Educación 2001)

The dictatorship ended in failure, with high inflation, increasing unemployment, widespread bankruptcies in the private sector, and the disastrous military adventure in the Falklands that led to comprehensive surrender to a British expeditionary force. The recovery of democracy in 1983 was accompanied by crises in public finances, and then the local chapter of the more widespread Latin American debt crisis of the 1980s. In this difficult climate, the democratic government's increases in the share of public expenditures going to social services could not forestall deterioration in the quality of public services, due to falling tax revenues and more general economic stagnation and decline (World Bank 2008).

The most important fiscal initiative during this period was the implementation of a National Food Program, with wide coverage and a highly centralized management. This program appeared as a response to an increasingly serious and unusual problem for Argentina – high unemployment, low wages, and growing informality were producing sharp increases in absolute poverty, with serious effects on nutrition, education and health (World Bank 2008). The previous social model, based on a large formal job market and extensive welfare benefits, was sufficiently eroded that it

plainly could not cope. Poor labor market conditions, along with the misuse of pension funds, helped set the stage for the deterioration of the pension system, which went into a full crisis in the mid-1980s.

Argentina's second post-"Process" elected government, led by Carlos Menem, comprised a surprising blend of political populism and market-friendly economic reform. A colorful and charismatic figure who allowed his personal life to fill the nation's headlines, Menem's government pursued a vigorous course of privatization, trade liberalization, decentralization, market deregulation, and modernization of production (World Bank 2008). Together, these reforms led to an increase in labor supply and a decrease in labor demand (notably by newly privatized enterprises), as well as a long-term structural change in the kinds of human capital demanded. Partly in response to this, the government deregulated the labor market via the introduction of short-term contracts, reductions in severance payments to fired workers, and lower social contributions (Golbert, 1998).

With the new economic model and role of the state, the nature of fiscal policy changed as well, from universal services to much more limited, targeted programs aimed at specific groups. This produced an increase in the number of programs, and hence a need to coordinate them, and define goals and criteria for resource distribution. To this end the Social Development Secretary was created. According to a World Bank report, citing Repetto (2003), "four different paths were explored at the national level: (1) comprehensive social plans which worked as "umbrella mechanisms" (1993 and 1995); (2) consolidation of focalized social programs as an alternative to the social plans (1996 and 2000); (3) creation of organisms with programmatic responsibilities such as the Social Development Secretary (1995) and the Social Security Ministry (2001); and (4) creation of bodies with some degree of responsibility regarding national level poverty policies." (World Bank 2008)

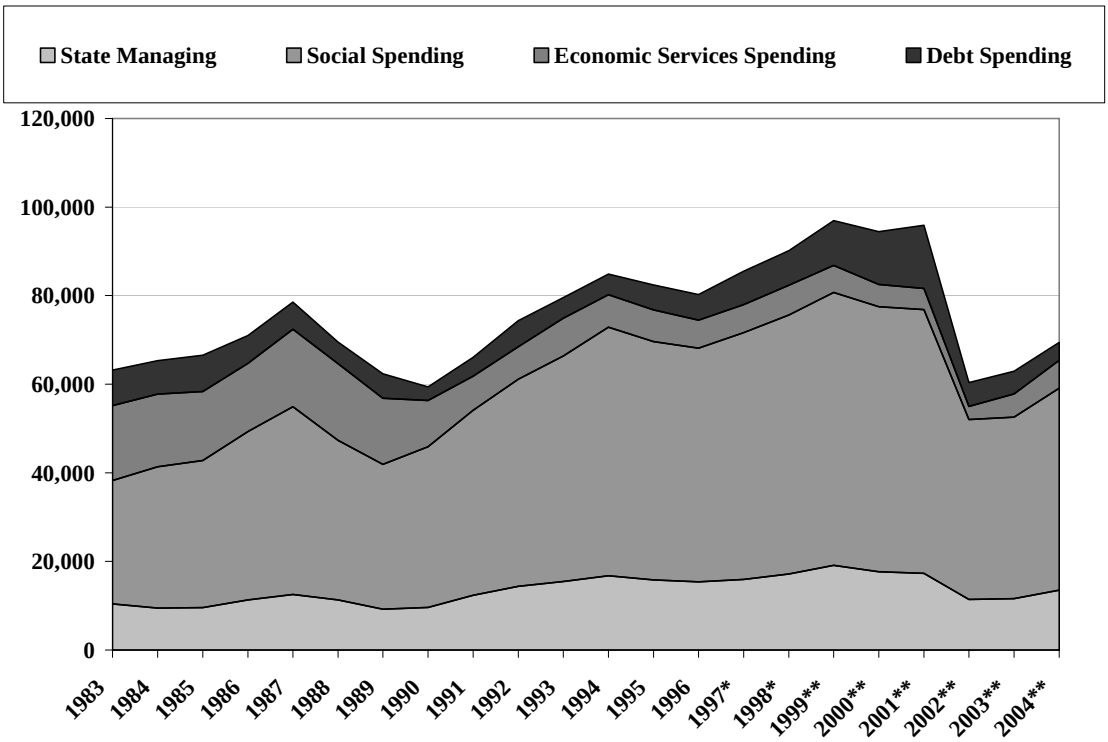
Perhaps the most emblematic and well-studied policy of this phase was TRABAJAR, a program aimed at reducing poverty by simultaneously generating employment opportunities for the poor and improving social infrastructure in poor communities.[8] Introduced as a pilot program in 1996 in response to economic crisis and unemployment rates of over 17 percent, TRABAJAR expanded through three phases. The program offers relatively low wages in order to attract ("self-select") poor, unemployed workers as participants. The infrastructure projects that participants are hired to work on are proposed by local governments and NGOs, which must cover the nonwage costs of the project. Projects are approved at the regional level according to central government guidelines. Extensive efforts have been made over time to improve targeting of the poorest families

[8] The discussion of TRABAJAR borrows liberally from Baker (2000).

and geographic areas, as well as to strengthen the capability of provincial offices for helping poor areas mount projects and to raise standards of infrastructure quality.

Policies such as this, aided hugely by the proceeds of rapid economic growth, had the aggregate effect of raising social spending in Argentina above its 1980s levels. Figure 9 shows that in constant peso terms, rises in social spending in the mid 1980s were reversed in the late 1980s, and social spending did not achieve a sustained increase until the 1990s, when it eventually doubled. Much of this latter increase was in turn reversed in 2001-02.

Figure 9: Evolution of Consolidated Public Spending in Argentina by Purpose, 1983-2004 (constant pesos 2001)



** preliminary; ** estimated*

Source: World Bank (2008); originally prepared by CIPPEC based on data from Dirección de Análisis de Gasto Público y Programas Sociales. MECON.

Fiscal Policy Reforms Contributed to Rising Inequality

The new Argentine model of social service provision was based on partial privatization, where the better-off tended to opt into the private sector. This set up very different incentives from the previous regime, incentives to which providers and consumers quickly responded. Thus a fast-growing private sector in health, education, etc soon became markedly higher-quality than public services, leading to sharply higher inequality in the standard of services received by different segments of the population (World Bank 2008). This inequality spanned both the interpersonal and

spatial dimensions, and showed itself markedly in differences between the standard of services in the three major cities and the three richest provinces, versus the rest of the country.

The postscript to the Menem-dominated 1990s was a comprehensive economic collapse in 2001 under the successor government, and the largest sovereign default in history. The immediate cause of the crisis was the collapse of the Convertibility Plan, which had so successfully reduced both inflation and inflationary expectations during this period. Some of the deeper causes included an overvalued exchange rate that progressively hobbled exports, excessive spending by provincial governments, and a politically weak government unable to act decisively. This crisis proved the worst ever in Argentina's colorful history of economic crises, a sort of social and political cyclone that swept away much of the political establishment, and plunged large swathes of the middle class into poverty. Unemployment – already high – rocketed in the wake of the collapse, and the official poverty rate in Argentina – for generations a middle class country – rose to 58% of the population (Blanco 2005).

Inequality in social services, combined with the changes in the labor market and welfare policies noted above, contributed significantly to increasing income inequality in Argentina during this period. In the 1980s Argentina's Gini coefficient hovered around 0.40; immediately after the 2001 collapse it reached 0.55 (Blanco 2005). For the sake of comparison, Sweden and Norway boast Gini coefficients of less than 0.30, whereas the most unequal countries in Latin America have Ginis of 0.60 (see Figure 1 above). Note that Argentina's newly high inequality statistics incorporate a number of workfare and income transfer programs explicitly designed to cope with the effects of the crisis. Without these, far more people would have sunk into deep poverty, and Argentine inequality would have rivaled Latin America's worst.

Thus the increasing trend in total inequality in Argentina from the 1970s onwards. Many studies have confirmed this fact, and many have sought to establish its causes (Santos 2005). But what about our main concern here – spatial inequality?

Increasing spatial income inequality in Argentina was driven by inequality in social services – especially in education. Although this topic deserves further research, Santos (2005) provides convincing empirical results that support this interpretation. After noting the long-term increase in inequality in Argentina after 1974, she finds that

> "…education plays a very important role in the determination of spatial income inequality. Urban agglomerations with a high percentage of people who have completed primary education appear to have lower inequality, while urban areas with a high percentage of people who have completed secondary education show higher inequality. Urban areas with higher unemployment rates, higher returns to education and a lower percentage of people employed in the secondary sector tend to have higher levels of inequality. Areas with a higher percentage of people with unsatisfied basic needs and a higher percentage of households with indigenous members also show higher levels of inequality, although the

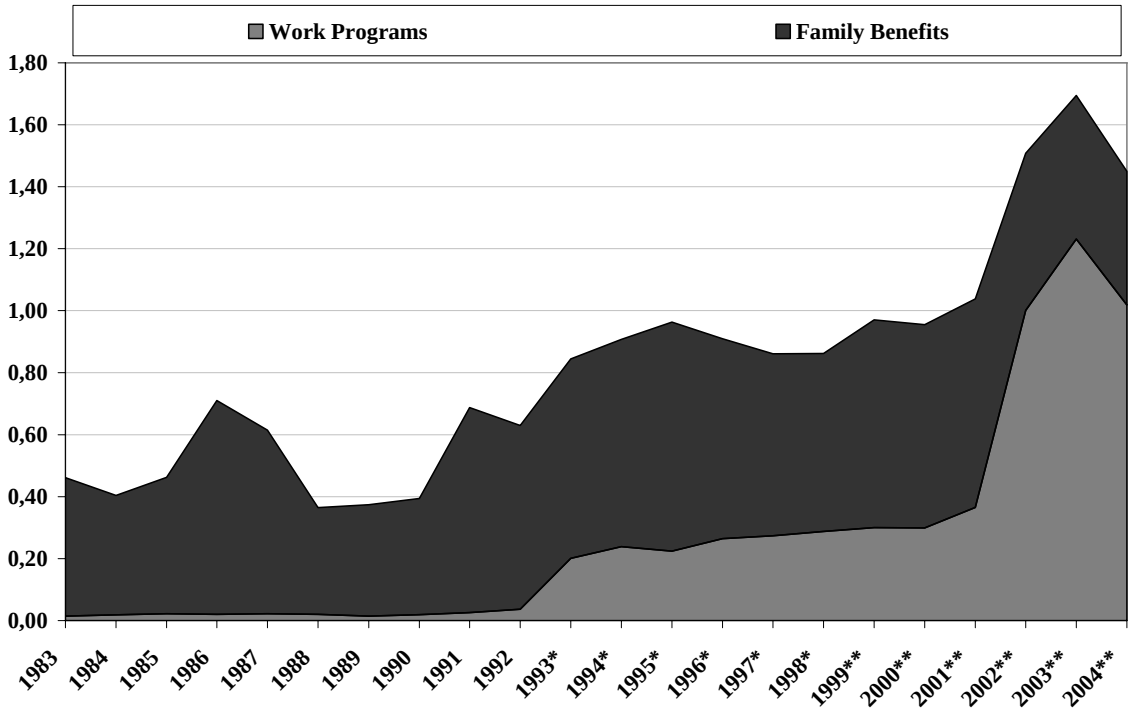
effect of ethnicity is small. We also find association between spatial inequality and dependency and the level of development." (p.4)

Fiscal Policy Responses to Inequality[9]

The single most important policy innovation in response to Argentina's crisis was probably the *Plan Jefas y Jefes de Hogar*. This income transfer program provided direct income support for families with dependents who had lost their main source of income. The program was large-scale, reaching more than 1,000,000 beneficiaries half a year after its implementation, but also highly targeted. It is interesting to note that this targeting empowered new social actors who were direct beneficiaries of these social programs (Lodola 2005). The best known example is the *piqueteros* movement with *Planes Jefas y Jefes de Hogar* and *Trabajar*. *Piquetero* leaders achieved privileged positions in the administration of both programs, providing them with a potential source of patronage, and hence a base of political power. Some were able to exploit these conditions to their benefit with non-trivial success (Rodgers 2005). Even though work programs were already relevant during the 90s (different versions of *Trabajar* were the largest) an impressive rise in the budget occurred in 2002. This rise is explained by the *Plan Jefas y Jefes de Hogar*. Figure 10 shows how spending on work and income transfer programs changed over time in Argentina.

[9] This section relies liberally on the World Bank (2008) study "Public Spending in Social Services."

Figure 10: Evolution of Consolidated Work Spending as a Share of GDP (1983-2004)



** preliminary; ** estimated*

Source: World Bank (2008); Originally prepared by CIPPEC based on data from Dirección de Análisis de Gasto Público y Programas Sociales. MECON.

The policy response covered the health sector as well. Public spending in health covers several sub-areas: (i) public health provision (hospitals and health centers); (ii) unions' health providers (*obras sociales*), and (iii) the pensioners' health system (*Instituto nacional de seguridad social de jubilados y pensionados*, INSSJyP). The last two constitute spending allocated to people with formal employments and pensioners. Further reforms implemented in the 1990s provided workers with the possibility to choose their health provider, as well as establishing several emergency programs implemented to deal with the crisis such as *REMEDIAR*.

In the area of social assistance and promotion, some of the most relevant programs were two food programs (PROSONU and POSOCO) managed by the provinces. Other food programs in the hands of the federal government were the Child Food and Nutritional Program, ASOMA which was oriented to elders, and PROHUERTA which was oriented to families. These programs were subsequently merged into a single program called UNIDOS. In order to address the critical situation regarding nutrition after the 2001 crisis, the government launched the Emergency Nutrition Program (*PEA* in Spanish), the budget of which reached $330,564,540 in 2003 (equal to 6.4% of the social assistance budget). Along with PEA, the Families for Social Inclusion program is the other large program created as a consequence of the 2001 crisis, with a budget of $265,461,778 in 2003 (5.2% of the social assistance budget). This program aims to give subsidies to needy families that

receive no other assistance, as well as to facilitate their access to public education and health systems.

Table 5 summarizes the most important laws governing social policy (including employment) in Argentina today at the national, provincial, and municipal levels.

Table 5: Most Important Laws Regarding Social Policy

Area	Law	Number	Year
Health	Mandatory Health Insurance	18610	1970
	Creation of the PAMI	19032	1971
	Creation of the Integrated National Health System		1974
	Decentralization	21883	1978
	Integral Protection System for Handicapped People	22431	1981
	Creation of the National Health Insurance System	23661	1989
	Creation of the National Office of Social Health Insurance	23660	1989
	Decentralization	24061	1991
	Work Hazards	24557	1995
	National Regulating Entity for Unions' Health Providers	Dec. 1615	1996
	Modification of the Social Health Insurance System	Dec. 1141	1996
	Institution of the first mandatory medical program	Res. 247	1996
	Creation of the Basic System for Integral Care for Handicapped People	24901	1997
	Monotributo Tax	25865	2004
Pensions	Regime for Hired Workers	18037	1969
	Regime for Independent Workers	18038	1969
	Pension System Reform	24241	1994
	Rule on Deficit of non Centralized Provincial Pension Systems	25239	1999
	Repeal of Special Regimes	25568	2002
	Moratorium on Pensions Contributions	25994	2005
Work	Unemployment Benefit	24013	1991
	Work Programs Financing	25400	2000
	Plan Jefas y Jefes	Dec. 165 and 565	2002
Housing	Creation of FONAVI	21581	1972
	FONAVI Reform	24464	1995
	FONAVI Reform (50% of the funds can be directed to non housing programs)	25235	2000
	FONAVI Reform (the funds can be directed to non housing programs)	25270	2002
Water	Water Company (Obras Sanitarias) Privatization	23696	1989
	Creation of the Regulatory Body (ENOHSA)	24583	1995
Education	Education Decentralization	24049	1992
	Federal Education Law	24195	1993
Social Protection	Alimentary Emergency Program	Dec. 108	2002
	Programa Familias	Dec. 808	2002

Source: World Bank (2008); originally prepared by CIPPEC based on data from Bertranou and Bonari (2006)

Who Benefitted?

Who benefitted from these fiscal policy initiatives? Consider the case of TRABAJAR, which continued through the 2001 crisis and became one of the government's backbone policies for coping with its social effects. TRABAJAR was carefully and rigorously evaluated by independent researchers. Baker (2000) reports that without access to the program, about 85 percent of program participants would have fallen in the bottom 20 percent of the national income distribution – and would therefore be classified as poor in Argentina. However, matching-method estimates of forgone income are sizable, so that average net income gained through program participation was about half of the TRABAJAR wage. Even allowing for forgone income, the distribution of gains was decidedly pro-poor, with 80 percent of program participants falling in the bottom 20 percent of

the income distribution. Net income gains were virtually identical for male and female TRABAJAR participants.

Targeting thus seems to have been quite effective in TRABAJAR, helping to reduce both interpersonal and spatial inequality. Although the program's effects on spatial inequality has not been specifically studied, the fact that a department with 40% of its population classified as poor can expect to receive as much as five times the mean departmental allocation implies potentially strong equalizing effects. However, large variations amongst allocations to departments of this description reveal a lack of reliability in spatial targeting performance, and thus an area for improvement. Some of the reforms in TRABAJAR II addressed precisely these issues, and seem to have successfully enhanced geographic targeting outcomes. More generally, evaluation results provide clear evidence that program participants do come largely from among the poor, and thus that self-selection of participants by offering low wages is a strategy that works in Argentina (Baker 2000).

An investigation by Gasparini (2004), cited in World Bank (2008), comes to similar, but much broader, conclusions. Gasparini concludes that consolidated public social spending is pro-poor.

> "Its structure determines that 28.7% reaches the first quintile, 21.9% goes to the second quintile, 18.5% to the third, 16.8% to the fourth and 14.1% to the fifth quintile. Consolidated social spending is also progressive and thus enhances equality among society. According to the estimations by Gasparini (2004), the Gini index without public social spending would be 0.54, while after public social spending, assuming proportional taxes, it would be 0.45." (World Bank 2008)

Table 8 summarizes his results.

Table 1: Concentration of Consolidated Social Spending by Quintile (2003)

	Pro-poor	Pro-rich	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintil
Education, Culture, S&T	x		25%	22%	20%	18%	15,30%
Health	x		19,66%	21,40%	19,30%	21%	18,70%
Water and Sewage			21,58%	19,90%	17,50%	18,60%	22,30%
Housing	x		30,90%	18,30%	23,80%	16,80%	10,10%
Social Assistance and Promotion	x		45%	25%	17%	9%	4,20%
Work	x		49,50%	24,70%	13,20%	8,60%	4%
Urban Services		x	13,90%	16,50%	19,60%	22,90%	27%
Consolidated Social Spending	**x**		**28,70%**	**21,90%**	**18,50%**	**16,80%**	**14,10%**

Source: Gasparini (2004) cited in World Bank (2008)

7. Decentralization and fiscal federalism

Decentralization of service delivery has become very prominent in the development discourse since the 1980s. Advocates of decentralization argue that it increases service provision through two channels: increased accountability, and improved information. Decentralized governments can be held more accountable because citizens are able to exercise 'exit' and 'voice' more effectively. Better infrastructure and public goods provision would attract skilled workers and capital to a municipality, pulling them away from poorly-provided municipalities. Hence, competition between local governments would lead to increased provision (Qian and Weingast 1997, Tendler 2000). "Voice can work through a variety of mechanisms, including elections that vote a party out of office, exposés and critiques in the media, citizen complaints, participation in parent schooling committees, street protests, and even, in a few extreme cases, lynching of the mayor" (World Bank 2006, p 11).

Secondly, local government – being closer to the public – will have better information and thus will be able to ensure better provision. However, the advantages of local level information must be gauged in light of the economies of scale and positive externalities lost in comparison to large scale provision by central government. But before proceeding further, it is important to define the term. Decentralization can be defined as the devolution by central (that is, national) government of specific functions, with all of the administrative, political and economic attributes that these entail, to democratic sub-national (regional or local) governments that are independent of the centre within a legally delimited geographic and functional domain. It is not so much a fiscal policy or specific fiscal reform as it is a broad reorganization of the fiscal relations between different regions of a country, and different hierarchical levels of the state. It is relevant to this paper on account of the effects that many claim it has on inequality. But curiously, there is little agreement about what these effects are.

If we begin with the assumption of high levels of inequality in a country embarking upon decentralization, it is easy to suppose that a large change to the existing set of fiscal relations will produce an improvement in overall inequality. Proponents of decentralization argue along these lines. Centralized policy making often favors particular regions or cities at the expense of others, and burdens all regions with overly uniform policies and public services too unresponsive to local needs and conditions. Such policies, designed to suit the regions that the center cares about most, are part of what holds back development in other regions, impoverishing them and increasing spatial inequality. Along similar lines, Kim (2008) argues that dictatorships, centralized power, and a lack of political legitimacy seem to contribute to a centralized urban population in countries hat can be so described.

Critics of decentralization argue the opposite point. Central government enjoys the advantage of much more easily redistributing resources from more to less advantaged regions, and has a strong interest in producing public services and policies to a common standard, that treat citizens in all areas of a country equally. Combating inequality is an important justification for having central government. Decentralization, by contrast, shifts decision-making power over services and policies to local authorities, who are expected to finance them to a greater extent from locally-raised resources. By stripping the center of some of its most powerful fiscal tools, decentralization hobbles its ability to achieve such goals, leaving the field open to the economic forces, such as economies of scale, agglomeration, and other spillovers, that naturally drive inequality higher in an economy. And a reform that ties the production of public services to a local tax base will tend to further increase inequality, as richer regions can afford better services and infrastructure, which then increase the wealth gap further.

Which side of this argument does the evidence support? Empirical evidence surveyed by Kim (2008) suggests that "countries with strong state and local governments may have greater spatial equality as compared with countries that have a relatively strong federal government" (p. 39). Shankar and Shah (2003) conduct an extensive study of both developed and developing countries, and find that unitary countries are more unequal when compared to federal countries. Amongst federal countries, they find that India (with inequality indices some two to three times US levels) has shown an increase in inequality from 1980-96. Their explanation for this is three-fold: (i) India was at an early stage of development and hence at the wrong side of the Kuznets curve; (ii) there were high barriers to interregional trade thus barring convergence over time; and (iii) the central government's regional policies and the intergovernmental transfer system serve to exacerbate inequality. Pakistan (with inequality comparable to the US and Canada), by contrast, has a very low level of regional inequality. This, they argue, is largely due to the concentration of Pakistan's population in its two largest provinces. Measured this way, inequality in Pakistan would manifest itself as interpersonal, and not spatial.

Mexico (with inequality five times that of the US) has a high, but stable, level of regional inequality. This is blamed partly on the centralized nature of the Mexican state, especially regional governments' reliance on central government transfers. Brazil (with inequality three to four times that of the US) has shown considerable variation in its level of spatial inequality over time. And Russia has seen a dramatic increase in it's level of regional inequality. This could be explained by the major economic and political change it has undergone.

For unitary countries they find that smaller cases, such as Romania, Sri Lanka, Uzbekistan and Chile, have shown a reduction over time in levels of inequality. Sri Lanka, with the lowest level of spatial inequality amongst the centralized countries they study, is more unequal than India.

This inequality can be explained by a low level of infrastructural development in poor regions, the concentration of industry around ports, and a decline in agriculture can explain. Larger unitary countries have substantially higher levels of regional inequality than comparable federal countries, such as China, Indonesia and Thailand.

Shankar and Shah's overall conclusion is that federal countries do better for three reasons:

1. Regional inequality posses a greater political risk in federal countries.
2. National political parties have to compete in multiple regions, making it infeasible to neglect regions.
3. Regional governments are more accountable to their local electorates, and so pursue policies that are more developmental.

Curiously, we now find ourselves in the opposite situation from section 3 above. The predictions of theory about decentralization's effects on inequality are ambiguous, but the evidence appears to be clearer: more decentralization and fiscal federalism are associated with lower levels of inequality. But we must admit that the empirical basis for such an assertion is unsatisfyingly weak – one (admittedly broad) cross-country study. Such evidence is subject to the same criticisms leveled in section 3 above, and hence to a similar solution. Ultimately, the best way to research the effects of decentralization on inequality is through detailed case study, where processes of policy reform (i.e. cause) can be identified, and their effects on inequality traced in detail. For this reason, we turn to the remarkable case of decentralization in Bolivia.

Case Study: Bolivia

Bolivia entered the 1990s with a highly centralized state apparatus, the legacy of the 1952-53 revolution which nationalized the "commanding heights" of the economy and concentrated state power in the hands of reformers in La Paz who sought to smash the economic power of the mining and landowning elites, and remake social relations throughout the country (Klein 1993). The insurgents of 1952 succeeded in revolutionizing Bolivia's economy, and in freeing the country's large indigenous majority from the political and legal oppression they endured. But they were less successful in changing social relations, and so real economic and political power remained in the hands of a small, largely white and mixed-race urban elite, at the expense of the indigenous, rural and peri-urban majority. Hence at the advent of decentralization, Bolivia continued to be a country marked by high levels of interpersonal and spatial inequality.

Popular participation in Bolivia

Decentralization was announced to an unsuspecting nation in January 1994. The scale of the change in resource flows and political power that it brought about were enormous. The core of the law consists of four points (Secretaría Nacional de Participación Popular, 1994).

The Bolivian Decentralization Reform

1. **Resource Allocation.** Funds devolved to municipalities doubled to 20 percent of all national tax revenue. More importantly, allocation amongst municipalities switched from unsystematic, highly political criteria to a strict per capita basis.
2. **Responsibility for Public Services.** Ownership of local infrastructure in education, health, irrigation, roads, sports and culture was given to municipalities, with the concomitant responsibility to maintain, equip and administer these facilities, and invest in new ones.
3. **Oversight Committees** *(Comités de Vigilancia)* were established to provide an alternative channel for representing popular demand in the policy-making process. Composed of representatives from local, grass-roots groups, these bodies propose projects and oversee municipal expenditure. Their ability to have disbursements of Popular Participation funds suspended if they find funds are being misused or stolen can paralyze local government, and gives them real power.
4. **Municipalization.** Existing municipalities were expanded to include suburbs and surrounding rural areas, and 198 new municipalities (out of some 315 in all) were created.

This was followed by the Law of Decentralized Administration (1995) and the Law of Municipalities (1999), which further defined the municipal mandate and located it in a broader governmental architecture.

The change in local affairs that these measures catalyzed was immense. Before reform local government was absent throughout the vast majority of Bolivian territory, and the broader state present at most in the form of a military garrison, schoolhouse or health post, each reporting to its respective ministry. After reform, elected local governments sprouted throughout the land.

The Impact of Decentralization in Bolivia

The extent of the change is perhaps best appreciated by examining the changes in resource flows decentralization catalyzed. Before decentralization, 308 Bolivian municipalities divided amongst them a mere 14 per cent of all centrally devolved funds, while the three main cities took 86 per cent. After decentralization the shares reversed to 73 per cent and 27 per cent respectively. The per capita criterion resulted in a massive shift of resources away from the richest, most developed urban centers. Amongst smaller, poorer rural districts, resource increases of 50,000 – 100,000 per cent were quite common.

A more important change was to the geographic distribution of resources amongst Bolivia's municipalities before and after decentralization. We compare central(-only) investment in 1991-1993 with local(-only) investment in 1994-1996. Figures 9-11 show total investment per capita in all Bolivia's municipalities, where each municipality is a dot. An equitable distribution of investment would appear as a narrow band of points. What do the data show? Figure 3 shows that per capita investment before decentralization was indeed highly unequal, with large investments in three districts and the vast majority at or near zero. Figure 10 corrects for the skewing effect of the highest observations by excluding the upper 12, allowing us to expand the vertical axis and see more detail. Though the distribution now appears less unequal, the density of dots increases steadily as we move downwards. Fully one-half of all observations lie on the horizontal axis. These municipalities received nothing. Closer examination reveals that these are disproportionately Bolivia's small, poor, rural districts.

Figure 9:

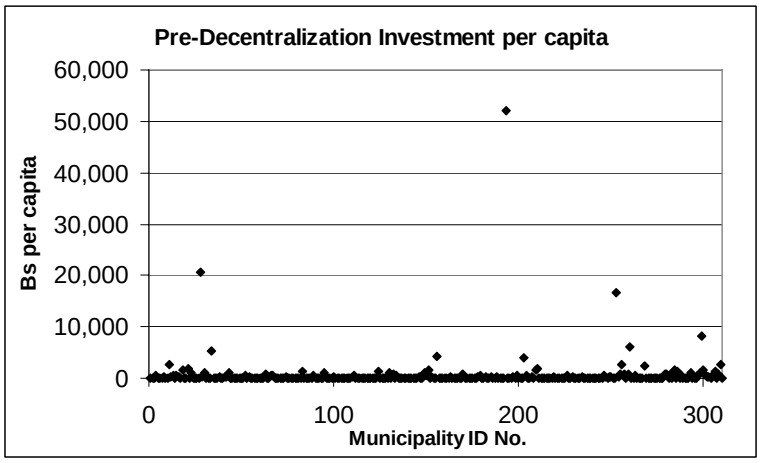
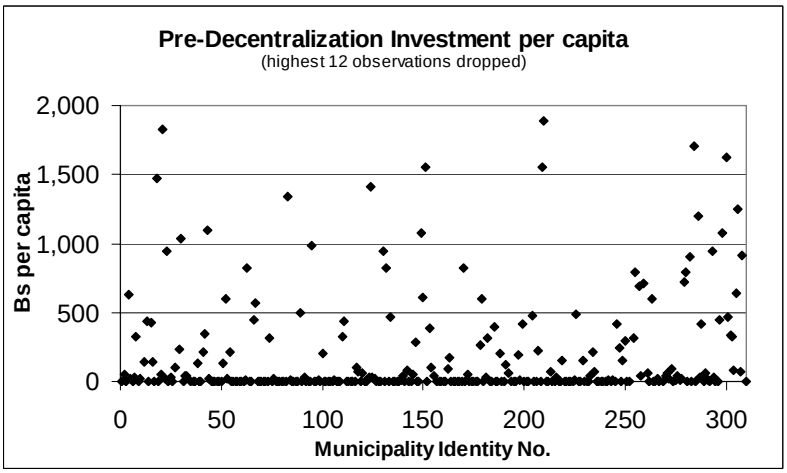


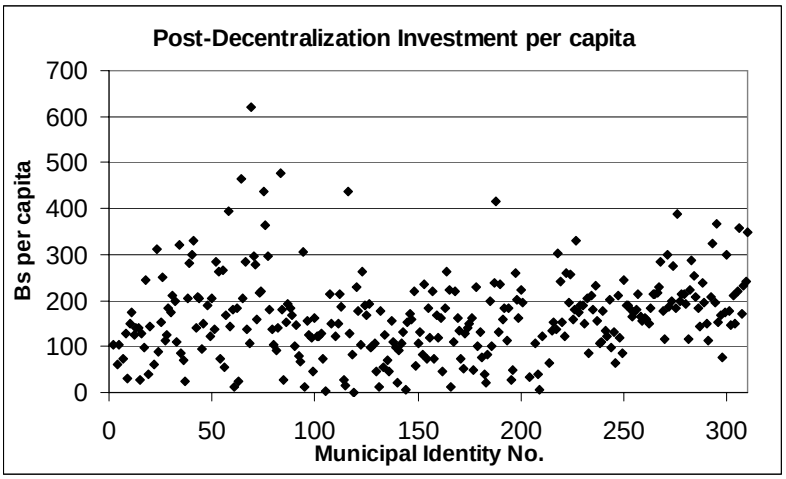
Figure 10:



Investment under centralized government was thus hugely skewed in favor of a few municipalities that received enormous sums, a second group where investment was significant, and

the unfortunate half of districts which received nothing. Compare this to figure 11, which shows municipal investment after decentralization. This chart shows no district over Bs.700/capita, a broad band with greatest density between Bs.100-200/capita, and only a few points touching the axis. Average municipal investment for this period is Bs.208/capita, and thus the band contains the mean[10]. These crude indicators imply that decentralized government distributed public investment much more evenly than centralized government. Equality in per-capita terms is, of course, largely a result of the design of the reform, as noted in section 2.1, point 1. The *ex-post* result is thus not as surprising as the *ex-ante* one: central government, with a much larger budget and free rein over all of Bolivia's municipalities, consistently chose a highly unequal distribution of investment across space. We return to this point in lesson six below.

Figure 11



Source: National Secretariat of Public Investment and External Finance; original calculations.

Did these changes of allocation across space lead to any deeper changes in the *quality* of public investment? Ideally we would investigate such a question by comparing quality-adjusted units of public outputs before and after decentralization. But such information is unfortunately not available for Bolivia (nor, indeed, for most countries). But we can investigate a related question, regarding decentralization's effects on the responsiveness of public investment to local needs. As noted above, improved responsiveness to local citizens is one of the central – and most disputed – arguments in favor of decentralization, and hence any evidence in this respect is of particular interest.

Figure 12 shows scatter plots of central government investment (left-hand side graphs) vs. local government investment (right-hand side graphs) in education, agriculture, water and sanitation, and urban development. The graphs plot central government investment during the last

[10] Investment sums here are much lower because they exclude central government funds.

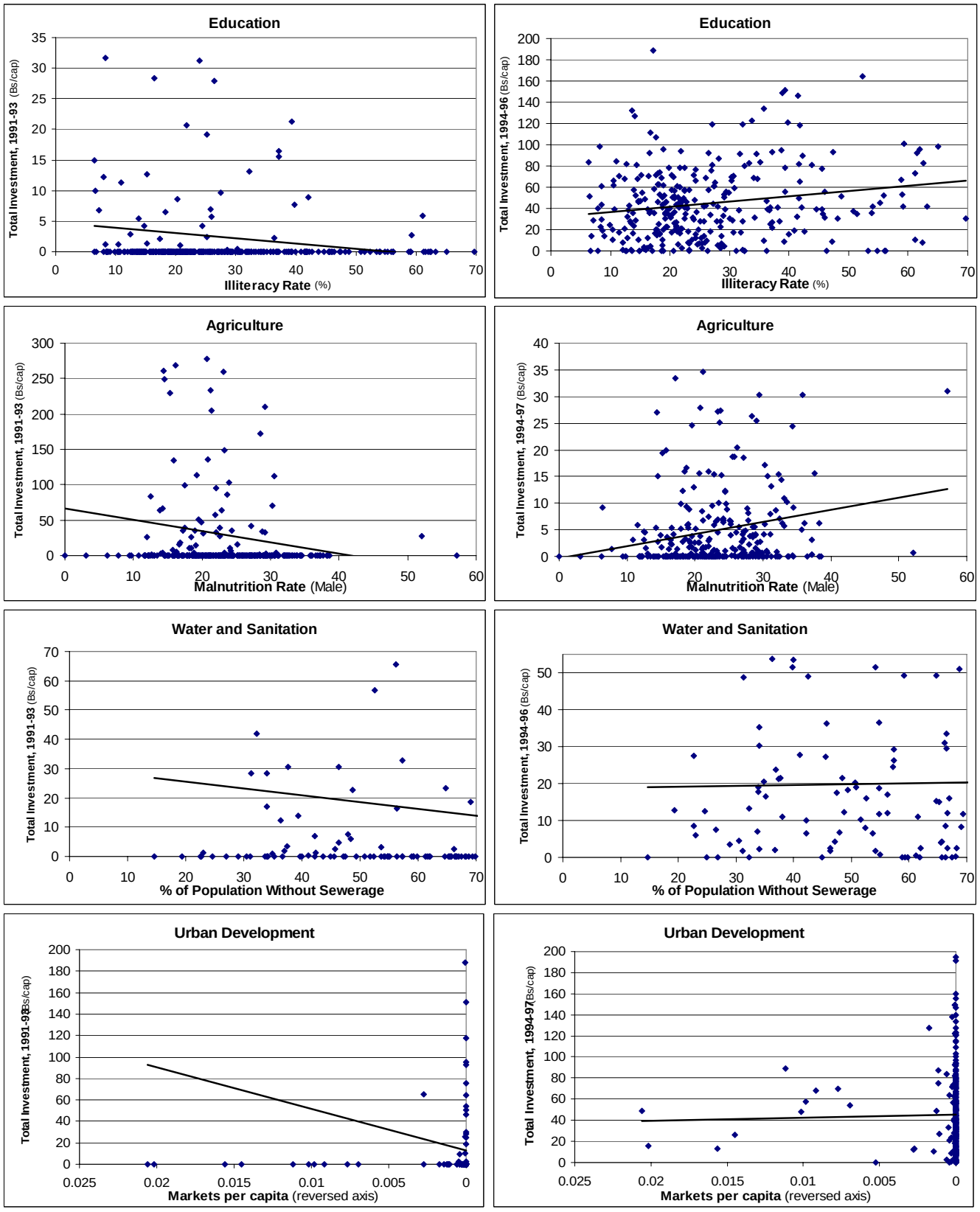
three years before decentralization vs. local government investment during the first three years after decentralization, against objective indicators of real local need in each municipality. Each graph includes a regression line summarizing the overall relationship.

The first comparison shows that central education investment fell as the illiteracy rate rose, meaning central government chose to concentrate education resources where literacy was higher. This is the opposite of what we would expect if central government were investing in areas of greatest need. After decentralization, by contrast, local governments invested progressively more where illiteracy was higher. Both regression lines are statistically significant – at the 5 per cent and 0.1 per cent levels respectively. Note how many municipalities received no education investment at all under centralized rule. The following two graphs show a similar pattern for agriculture. Central government invested less where malnutrition rates were higher, whereas local governments invested more where malnutrition was higher. Both of these regression lines are significant at the 5 per cent level. The pattern is similar, though less dramatic, for water and sanitation, and urban development[11]. In both sectors, strong tendencies to concentrate investment where it was least needed were reversed with decentralization, although in both cases local governments' progressiveness is weak and statistically not significant. But even if we assume both decentralized regression lines have a slope of zero, this marks a significant change from central investment that increased where need was lower.

[11] Note that the x-axis is reversed for urban development, for comparability. This is because the dependent variable used here is a positive, and not negative, concept.

Figure 12

Central Gov't Investment, by Municipality **Local Gov't Investment, by Municipality**



Sources: National Institute of Statistics, National Secretariat of Popular Participation, National Secretariat of Public Investment and External Finance; original calculations.

These graphs imply that decentralization increased government responsiveness to real local needs. After 1994, investment in education, agriculture, and water and sanitation was higher where illiteracy rates, malnutrition rates, and sewerage non-connection rates were higher; and urban development investment was higher in places where public infrastructure such as marketplaces was more scarce. That is to say, although median investment in these sectors increased throughout Bolivia after decentralization, the increases were even higher in those districts where the objective need for such services was greatest.

Thus decentralization served to re-orient public investment from a regressive pattern of systematically favoring better-off municipalities, and thus increasing already-high levels of spatial inequality, to one that favored poorer, worse-provided municipalities, and thus decreased inequality. It is notable that these changes were driven by the actions of Bolivia's 250 smallest, poorest, mostly rural municipalities investing newly devolved public funds in their highest-priority projects. This evidence supports the findings of Faguet (2004), which investigates a similar question.

What explains such dramatic results? Decentralization creates new political 'objects' – in the case of Bolivia, new municipalities. When these 'objects' are suited to the geographic level at which inequality occurs within a country, decentralization can unleash powerful forces that tend to counteract inequality. This occurs via the creation of political identities, and the unleashing of competition around these for control of administrative authorities that are accountable to the residents of these new political units.

Put another way, the fundamental question is not one of economic theory – where the logic whereby decentralization increases inequality is clear – but rather of political economy. Centralization places powerful equalizing tools in the hands of central-government politicians, but too often removes their incentives to use them properly. Where a country's inequality favors urban areas in which central government is physically concentrated, and powerful interest groups with a disproportionate influence over policy making, what exactly is a politician's incentive to help worse-off regions? In such a situation, inequality will not only persist but flourish, as the admittedly powerful anti-inequality fiscal tools at central government's disposal lay dormant, or worse.

Decentralization changes this calculus in fundamental ways. It places power in the hands of those with most to gain from unmaking the inequality that afflicts a country. And it allows them to choose local authorities endowed with the authority and resources to take corrective action. So long as local politics are reasonably transparent and not captured by elites – admittedly a big 'if' – local authorities will have much stronger incentives than central officials have to invest in the types of services and infrastructure that promote local development. And by allowing municipalities the freedom to experiment with different policies, decentralization generates strong incentives for

policy innovation, and then for learning from those experiments that prove successful. Taken as a whole, a decentralized system of policy making and fiscal relations has the potential to generate strong equalizing tendencies in public investment and economic growth. And in Bolivia it did.

8. Conclusion

Latin America suffers high levels of inequality. This is a significant problem in its own right, blighting the lives of millions of Latin Americans and holding back economic growth and technological progress in the region. Economic theory predicts that fiscal policy should provide many of the answers required to solve problems of inequality. But empirical evidence from the region – and indeed from all over the world – is less encouraging. In practice, fiscal policy often seems to have no effects. And occasionally, policy tools that should lessen inequality instead worsen it. Why is this so?

The problem, as we discuss above, is not that the fiscal tools themselves are flawed, or that the theory about their effectiveness is wrong. There are enough cases of success to establish that fiscal policy is capable of operating as intended. The problem, rather, is that fiscal tools are often poorly implemented, or even mis-used, and hence do not achieve the results that economic theory would predict. In the political economy of policy selection and implementation, when a given tool with predictable outcomes is deployed in an unexpected way, the outcomes achieved can be unpredictable or even perverse. Inefficiencies and distortions in the allocation and use of public resources cripple their effectiveness, and fundamentally alter the outcomes that should be achieved. This appears to explain the numerous cases where fiscal policy has effects on spatial inequality that are negligible or even counterproductive.

We see this at work in Mexico, Brazil and Bolivia, where until very recently most of the attempts to combat inequality using fiscal policy went awry because programs became politicized (especially in Mexico) or captured, and resources were wasted. But our three case studies also provide strong examples of successful policy reforms that strongly combat inequality. The first of these is shared by Mexico and Brazil: fiscal policies that explicitly target poverty indices in simple ways can work, so long as the targeting is transparent, and the goods or services in question can be branded so strongly as pro-poor that they become, in effect, stigmatized for the rest of the population. Oportunidades & FAIS in Mexico, Bolsa Familia in Brazil, and TRABAJAR and Plan Jefas y Jefes de Hogar in Argentina are all examples of this logic at work. The helps solve the problem of "benefit leakage", a constant threat for anti-poverty policies. Implementing such targeting techniques can greatly increase the efficiency and effectiveness of anti-inequality programs, as occurred in both countries, with impressive initial results.

A second lesson is that many of the fiscal policies discussed above that do not work seem well designed, and may even have worked during an initial period. Most of the measures tried in Mexico fall into this category. Their subsequent cooptation or deformation by interest groups and regional elites is not necessarily a flaw of the policy tools per se, but rather a problem of the incentives that central authorities face. Patronage, favoritism, and corruption are systematic problems faced by public authorities the world over. To the extent that such authorities are more powerful, and operate in a context with fewer external controls and less accountability, the pathologies expressed by the policy they make will be more severe.

A third proto-lesson, surprisingly, concerns the equalizing effects of universally provided social services, and is inspired by the case of Argentina. In opposition to targeted benefits aimed at the poor, universal services work through two effects and not one. They of course raise the floor in terms of service provision for poor individuals and regions. But they also lower the ceiling by discouraging the development of a fee-paying private sector into which the rich can escape from the public system. It is unclear what aggregate effects such a policy change would have on the overall health or education of a nation. But where inequality is concerned, the effects should be unambiguously equalizing. We term this a proto-lesson because the empirical evidence provided here is no more than vaguely suggestive. But the possibility is sufficiently interesting that it merits further study.

Decentralization provides a second set of solutions to such problems of the mis-application of fiscal policy tools. It operates by reducing the discretion and power of central government authorities, and increasing the oversight and accountability faced by those to whom such power is transferred – local authorities. In other words, decentralization changes the incentives that those charged with public power and resources face. Not surprisingly, the behavior of public authorities then changes as well. Decentralization works because it creates political objects that operate at the level at which spatial inequality operates. These comprise political units, political identities and a competitive dynamic that operate so as to reward political agents who expose regressive policies, and work to deliver resources to backwards regions. Such a set of institutions can reliably and effectively decrease inequality over time. This is what we see in Bolivia.

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