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# Economic Polarization and Governability in Mexico

Rodolfo De la Torre\*

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## ABSTRACT

The purpose of this essay is to assess alternative hypotheses regarding the origins of recent social rebellions in Mexico and to shed light on the theory that it was a severe rise in poverty and not social polarization that preceded the origins of violent conflicts. A consequence of this belief has been that attempts made by the Mexican Government to deactivate the economic factors that, in their view, led to social unrest did not necessarily upgrade poverty-reduction policies.

The complexity of issues that must be taken into consideration do not generate simple results, but the picture that emerges from the data shows a weak but steady economic recovery before the Zapatista uprising. In this essay, several relative deprivation and polarization indexes are calculated in order to appraise frustration and redistribution of power as theories for rebellion. There was no uniform trend that could be observed from examining frustration indicators, but when relative deprivation is combined with economic polarization and the resources of those with less income, the probability of an organized uprising increases significantly, as was the case before the Chiapas rebellion. It seems very likely that the main economic thrust that detonated civil violence was the polarization of income, even in the case of the Ejército Popular Revolucionario (Revolutionary Popular Army). The evolution of poverty-reduction expenditure shows that after four years of targeted programs and social rebellion, the poorest states continued to suffer on account of severe under-spending errors.

The uprising of the *Ejército Zapatista de Liberación Nacional (EZLN)* (Zapatista Army for National Liberation), focused attention on declining economic conditions as a key factor

for understanding the radicalization of political tension that culminated in social revolt<sup>1</sup>.

The economic crisis of December 1994 and the eruption of the *EPR* in 1996 seem to confirm the association of an unfavorable economic performance with the violent challenge to political authority. By changing the balance of power amongst economic groups, civil violence opens the opportunity for changes in social policies<sup>2</sup>. One particular form of this concept considers the increase in poverty as the most important single variable behind social rebellion. In this light, the 1994 crisis and the stabilization policies it generated, avowed by market-oriented views, only

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\* Director of the Sustainable Development and Social Justice Research Institute at *Universidad Iberoamericana*. De la Torre has been Editor of *El Trimestre Económico*, Professor of Economics at the *Instituto Tecnológico Autónomo de México (ITAM)*, and has taught Political Economy at *El Colegio de México*, *Centro de Investigación y Docencia Económica (CIDE)* and *Universidad Nacional Autónoma de México (UNAM)*. Alicia Santana and Dora Ordoñez are gratefully thanked for their helpful assistance in the calculation of distribution indexes.

<sup>1</sup> Rus (1995, pp. 71,72) states: "... economic and political conditions *are* at the root of the rebellion,..., those conditions have deteriorated noticeably since the mid-1970s, most especially since the early 1980s." Dietz (1995, p. 33) adds: "The economic factors that trigger the uprising affect all the country..." Serrano (1997, p. 92) concludes: "...radicalization was the outcome of the compounded effect of deteriorating socio-economic conditions, a distinctive process of polarization, and violent forms of repression".

<sup>2</sup> Serrano (1997, pp.92, 93) adds: "...radicalization, by significantly altering the correlation of forces among traditional actors in Chiapas, has opened a window of opportunity for social change in the region....the zapatista movement, by changing the balance of power among regional actors, may have undermined the power of the local elite and could, in the mid and long-term, help the process of social and political change in Chiapas..." .

worsened an already adverse situation for the reduction of poverty. A logical conclusion would then be: the government being challenged should raise the quality of life of at least the poorest of its population by improving the effectiveness of poverty-reduction programs if it wishes to suppress some of the elements fuelling social rebellion by non-violent means. It could be said that poverty finally had become important enough to merit serious attention, as it now represented a threat to the ability to govern.

The purpose of this essay is to show that it is not conclusive that the decline in the standard of living, in particular, an increase in poverty, preceded the origins of social revolt in Mexico. Although, at the time of the uprising, very high poverty indexes are undeniable, it can be demonstrated that poverty plays a secondary role in generating social conflict and that it decreased shortly before the Zapatistas resorted to armed confrontation. It is a different phenomenon, social polarization, which, in fact, is primarily associated with the origins of organized civil violence. Therefore, an upgrade in poverty-reduction policies would not necessarily mean success for the Mexican Government in its attempts to deactivate economic factors that could lead to social unrest.

### THE ORIGINS OF CIVIL VIOLENCE IN CHIAPAS<sup>3</sup>

There is no simple, economic or political explanation for the January 1994 rebellion in Chiapas. Neither the socio-economic conditions, the repression of the peasant and indigenous population nor the external influence of religious groups and political activists *per se* elucidate the complex interplay of factors that lie beneath the causes for the organized rebellion. Clearly, many of the causes were economic and political, but the weight that each one carried is not evident. However, several elements are helpful in understanding the economic characteristics of the civil violence in Chiapas.

In the first place, the Chiapas uprising has not been an isolated or merely local, social movement. The stability of the Mexican countryside was damaged by the dismantling of the Agrarian Reform and the decreasing participation of the State in rural life.<sup>4</sup> Focusing

on this perspective, in order to understand civil social upheaval, it becomes advisable to analyze, not only regional, but also national economic conditions.

Secondly, indigenous populations and peasant resettlements more frequently since the 1960's and the increased flow of migrants and refugees to the region in the 1970's and 80's led to growing and conflicting property claims. An already fragile structure of property rights was submitted to additional pressures by Presidential Decrees that have attempted to redistribute land or create natural reserves, while local agrarian policies have made confrontations on overlapping property claims more hostile. Finally, in 1992 the Constitutional Reform of Article 27, withdrew the right to claim land and increased the amount of land that could be concentrated in the hands of one person or contained in an *ejido*<sup>5</sup>; this ruling, admittedly, resulted in uncertain and low expectations of resolving land petitions but was, nonetheless, important for social stability. At the heart of the conflict were the quarrels over the control of scarce productive assets.

Thirdly, to already-existing hardships, arduous labor conditions and poverty in Chiapas, the late 1980's brought sharp drops in subsidies and in the price of coffee. In addition, the *Programa Nacional de Solidaridad (PRONASOL)* (National Program for Solidarity) operated a poorly targeted poverty-reduction program which assigned a growing, but still insufficient budget aimed at improving social conditions. A national policy which following international prices determined the allotment of resources –while compensations to the least profitable agricultural activities were made through public spending– was responsible for the changes in the price of coffee, the decrease in subsidies and poverty-reduction allocations. The result of this situation was that market forces and public policies greatly influenced the redistribution of income at a regional and national level, a fact that could potentially explain the outburst of social revolt.

Besides economic factors, other elements such as population pressures, inter-ethnic conflicts and religious confrontations have played an important part in explaining civil violence in

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proportions with roadblocks and massive assaults on public offices".

<sup>5</sup> Even among *ejidatarios*, the concentration of land in a few hands was extremely high. In 1992, nationwide, 5% of the *ejidatarios* owned 38.1% of all the land allotted by the Government for cultivation. Chiapas was the fifth most important culprit to this type of control of land in the country. See Vélez y De la Torre (1993).

<sup>3</sup> This section is based on Serrano (1997).

<sup>4</sup> As Serrano (1997, p. 75) states: "Indeed, the Chiapas uprising, while distinct in its methods and the content of demands, should also be seen within the context of mounting protest spreading among agricultural producers. In Chihuahua, Durango, Coahuila and Jalisco this protest reached violent

Chiapas. However, polarization and organization are two non-economic factors that are at the base of social rebellion. In the indigenous communities since the 1960's, social groups that include the Catholic Church, Maoist activists, indigenous groups defending property rights, credit unions, civil rights activists, ejidal and peasant organisations and external political groups increased amongst the indigenous communities an awareness of property, labour and civil rights and developed the foundation for coherent social movements.

Although the actual date of creation of the *EZLN* remains unclear, the fact is that the organizational basis for civil violence was present well before the 1994 uprising, possibly since the mid-1980's. The strength of the mounting social protests in Chiapas was increased by elements resulting from the 1982 incursions of the Guatemalan Army into Mexico and by the Central American crisis, all of which produced an increase in the militarization of the region and indiscriminate political repression. By the early 1990's<sup>6</sup> the presence of the Mexican Army and the appointment of Governors with little regard for human rights, had blocked the hopes of attaining a peaceful economic reform or a political change in the region. Conditions had deteriorated to such an extent that in January 1994 the *EZLN* rose up in arms against the Government.

### **VIOLENT REPUDIATION OF AUTHORITY**

In essence, the Government's authority over a specific region of Chiapas was violently disowned by the 1994 Zapatista movement. However, if we take into account that the *EZLN* is not just a local movement but also the embodiment of a broader protest, its challenge, in the national context, meant the repudiation of the authority of both Local and Federal Governments.<sup>7</sup>

<sup>6</sup> As Serrano (1997, p. 91) points: " In an important sense, the interplay between peasant protest and grassroots repression bolstered the radicalisation of the movement, tilting the balance in favour of armed resistance".

<sup>7</sup> The fact that the *Zapatista* revolt goes beyond local demands is confirmed by the introduction of problems like national democracy, NAFTA and Constitutional Reforms in the early stages of peace negotiations. But even without the self-proclaimed national character of the *Zapatista* movement, massive demonstrations and meetings, like the Convencion Nacional Democratica, held in August 1994, or the formation of the Frente Zapatista de

Authority is the legitimate exercise of power; it is a structure of rights through which the actions of others are controlled.<sup>8</sup> Strictly speaking, and according to this definition, the *EZLN* did not represent a serious threat to the power of the Government, since its military force was rather small.<sup>9</sup> However, it was an important challenge to the legitimacy of the Government. The disavowal of its right to control, threatened to spread beyond Chiapas and undermine the consensus on which national authority rests; widespread sympathy and receptivity towards the Zapatista movement pointed in that direction.

But why is a government's legitimacy to control revoked by force? There are at least three possible explanations to this question: declining economic conditions, the frustration of expectations and the redistribution of power.<sup>10</sup>

### **DID SOCIAL REVOLT OCCUR WHEN ECONOMIC CONDITIONS WERE DECLINING?**

Common sense suggests that civil violence is more likely to occur when the living conditions of a given population are deteriorating. Authors like Marx considered that the descent of the people's standard of living, would increase the probability of social rebellion: the escalating impoverishment of the proletariat under capitalism would lead workers to become conscious of their interests and revolt. However, in Marx's case and in other instances –like the French Revolution, the student riots in 1968, the overthrowing of the Sha in Iran, the post-Stalinist

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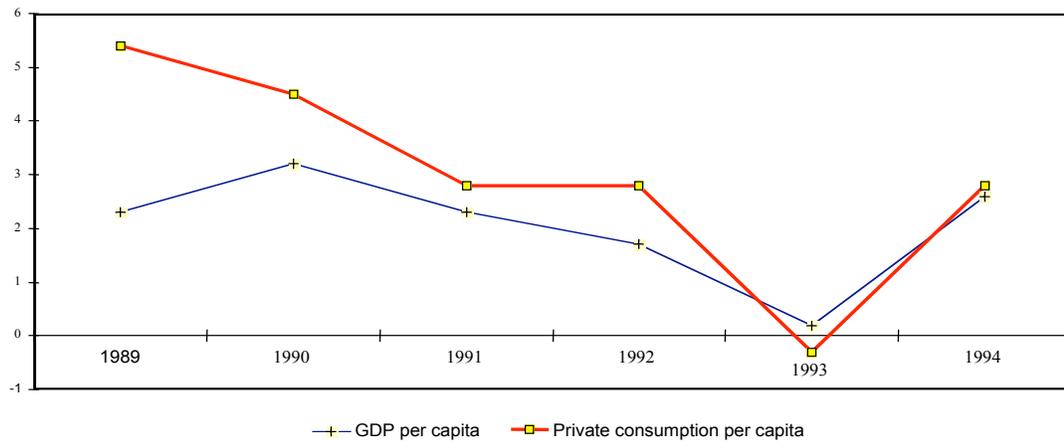
Liberacion Nacional in September 1997, confirm the wider impact of the rebellion.

<sup>8</sup> See Coleman (1990 p. 466, p.68): "Authority systems are structures of rights. Those rights have the social character that all rights have: They exist through a consensus of the relevant actors, that is, all those who are part of the system. In the case of an authority system, this consensus is what we meant by legitimacy of authority". Coleman identifies government authority as an involuntary transfer of rights from the individual to other agents because, in general, individuals are born in societies where a consensus on rights already exists. If rights to control actions are held by the person, this allocation of rights is self policing "...because it places rights of control in the hands of that actor with de facto control.... But that is not true for any other allocations...In other words, authority that is not voluntarily vested by an actor in another must be backed by coercive power if it is to be enforced".

<sup>9</sup> Only five out of more than 2395 *municipios* (municipalities) in Mexico were briefly occupied by zapatista forces.

<sup>10</sup> See Coleman ( 1990, pp. 470-502)

**Figure 1**  
Real GDP and private consumption per capita growth rates (%)



Source: *OECD* (1997), *CEPAL* (1995)

dissidence in the Soviet Union, the workers' movement in Poland in the 1980's and the South African rebellion— this hypothesis has received little factual support since sometimes an improvement in economic conditions precedes social uprisings. When poverty rises, the population appears to sink into increased passivity. However, does the decline in economic conditions explain the Zapatista uprising? Did living conditions worsen in Mexico just before the *EZLN* revolt?

Although the Salinas Administration had a disappointing record of growth, it did manage, almost every year (see figure 1), to get real increases in GDP and private consumption per capita<sup>11</sup>. In 1993 GDP per capita growth was a mere 0.1% and private consumption per capita fell 0.3%<sup>12</sup>. Nevertheless, it is unlikely that such small changes in GDP and in private consumption per capita deteriorated living conditions drastically and generated the rebellion. If this hypothesis were true, the 1984-1989 period, when GDP per capita fell 4.8%, would have been a much more likely time for civil violence.

Information at household level, which computes available net income, non-monetary consumption and other development indicators

<sup>11</sup> Figure 1 shows the evolution of GDP and consumer spending per capita calculated using the new 1993 base. This base uses new weights for output by sector, it is not just a price adjustment.

<sup>12</sup> *OECD* (1996) calculated with the *GDP* base 1993 and a population growth rate of 1.8% according to *ECLAC* (1995). Quarterly data shows that *GDP* per capita fell 5.96% from the second to the third quarter, but grew 8.6% towards the end of the year. However, such sudden changes are explained by production seasonality.

showed an improvement in living conditions. Table 1 presents several measures of the standard of living<sup>13</sup> before and during the year of the Zapatista uprising.

**Table 1**

Standard of living indicators*	1984	1989	1992	1994
National income per capita	397.67	485.69	565.91	603.29
National consumption expenditure per capita	286.75	435.99	504.56	522.65
Rural income per capita	241.51	258.57	231.41	244.75
Rural consumption expenditure per capita	172.56	236.14	221.1	216.51
Poverty (individuals, official method)	-	-	52.6	55.6
Extreme poverty (individuals, official method)	-	-	22.5	21.1
Rural poverty (individuals, official method)	-	-	65.0	72.0
Rural extreme poverty (individuals, official method)	-	-	35.6	36.8
Human Development Index	74.8a	75.7b	-	77.1c

Source: Cortés et al. (2002) and my own calculations with information from ENIGH, 1984-89, INEGI. UNDP (2003)  
\* Income and expenditure in 1994 pesos.  
a- 1980 b-1990 c-1995

The picture that emerges from this data does not correspond to an astonishing economic catastrophe that would be likely to provoke

<sup>13</sup> In August 2002 the Mexican Government announced an official method for the measurement of poverty. In Table 1 extreme poverty is obtained in the official method with the lowest poverty line. The Human Development Index is the simple average of life expectancy, educational level attained and GDP per capita indicators, and in Table 1, HDI is calculated using the same method each year.

civil violence. The information shows a weak but steady economic recovery in consumption and expenditure; even extreme poverty diminishes before the beginning of the revolt. From 1984 to 1994 real income per capita grew 51.7%, real consumption per capita expanded 82.2%, although general poverty increased 3 points. It is important to point out that rural poverty, general or extreme, increased from 1992 to 1994. On the other hand, the Human Development Index (HDI), which measures the average achievements in a country with respect to longevity, education and standard of living, increased 1.8% from 1990 to 1995.

### **FRUSTRATION OF EXPECTATIONS?**

An alternative explanation to armed rebellion corresponds to increased frustration. The subjective perception of those subordinated to authority, which differs from the outlook of external observers, is the focal point of this hypothesis. From the point of view of those involved in a revolt, things are getting worse, while that of the external observers' is that they are improving. Aggression would be the outcome of falling short of an expected result, a situation that, in turn, would lead to revolt.

There are several ways to define the kind of frustration that would lead to disowning authority. In the first place, an improvement in economic conditions brings about rising expectations, since the possibility of an improved standard of living seems to become something real. But, people's expectations grow at a faster rate than their actual living conditions. As a consequence, the gap between prospects and the objective state of affairs widens resulting in people viewing reality with increased frustration. Although, this emotion originates with a simple discrepancy between expected outcomes and results, it can be compounded with the fact that the authorities could be behind the creation of unfulfilled expectations. If this is the case, the discrepancy between the Government economic forecasts and actual performance would be an index of the kind of failure of expectations mentioned.

A situation which creates a gap between expectations and objective conditions is a second form of frustration that occurs when a short-term setback, such as a recession or a sudden rise in prices, interrupts economic recovery. From this perspective, price or quantity shocks are searched for in a period of general economic development just before the revolt; this kind of setbacks could be detected

through unemployment or real income indicators.

Another form of frustration involves relative deprivation as when there is a rapid improvement in the economy some conditions improve more rapidly than others. Those for whom conditions are not improving very quickly see others doing much better and they feel left behind; frustration emerges which leads to a revolt. To detect relative deprivation, the evolution of a group's economic conditions should be compared to the average or to the conditions of other groups.

A final form of frustration arises when improved economic circumstances lead people to expect a parallel increase in political power, an advance that does not materialize. From this perspective, the divergence amongst the different aspects of personal conditions is also responsible for creating the gap between actual and expected outcomes. Political repression amidst a period of economic recovery is an indicator of this kind of inconsistent expectations.

A weakness of the frustration theories of revolt is that frustration is a characteristic of the individual while a rebellion is a social phenomenon; simple congregation of frustrated individuals does not account for organized revolt. An armed response to governmental authority, such as the *EZLN* uprising, is not the sum of spontaneous individual riots, but the outcome of a highly organized and carefully planned social movement. However, frustration could account for the population's response to a revolt.

Organized leadership creates the opportunity for a social uprising, but the probability of supporting, or even participating in a revolt, would depend on the level of frustration of expectations. Frustration is a requirement at the individual level for a revolt to occur or for supporting the rebels. But, the question is, was there growing frustration amongst the population just before the Zapatista uprising?

It could be said that the Salinas Administration was a period of increased expectations. After a closely-contested election, Salinas lost no time in offering results that backed his market-oriented promise of economic development. In 1990, the Brady Plan helped to reduce foreign debt and from 1989 to 1992 the fiscal deficit was turned into a surplus: macroeconomic policies eliminated hyperinflation, the deregulation of domestic economic activity was broadened by the Government and, from 1990 to 1991 foreign

investment more than tripled. Indeed, the prospect of economic stability and structural reform brought massive amounts of foreign capital, strengthening the view that there would be fewer constraints to financing future economic development.

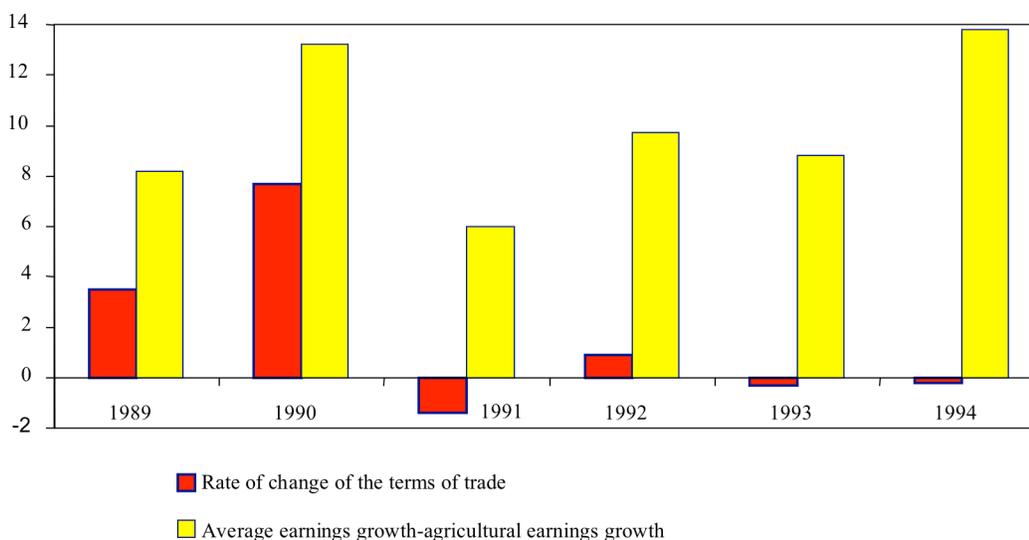
Other reforms achieved mixed results. For instance, several Tax Reforms reduced the fiscal burden on middle income groups, such as the 1993 cut in VAT, a purchase tax that excluded food; however, the tax base was extended. Thus, the future benefits that people expected from this Fiscal Reform became part of the rather abstract idea of healthy public finances. Another example was *PRONASOL*, which gradually increased social spending policies for the poor, but whose target was erratic as the limited resources of the program and its lack of explicit criteria for selecting recipients, caused persistent uncertainty amongst possible beneficiaries.<sup>14</sup>

significant change in private investment. On the other hand, the idea of gradual and future improvements in labor-intensive industries was introduced by NAFTA negotiations, but, for a time, private investment was held up awaiting the ratification of the agreement by a new U.S. Administration.

In Mexico, Salina's present image is severely tainted by the record of his last year in office: the guerrilla uprising, political assassinations and his contribution to the "December Crisis". Allegations of corruption did not improve his reputation. However, before the *Zapatista* rebellion, Salina's Administration was very successful in raising expectations and in convincing Mexicans and foreigners to risk their resources on them. It seemed that only a momentous shock, which was nowhere in sight, would prevent the Mexican economy from obtaining the necessary resources to achieve continuous growth.<sup>15</sup>

Figure 2

Change in the terms of trade and agriculture



Source: *OECD* (1997)

A final group of reforms brought more expectations than results, such were the cases of the Agrarian Reform and of the North American Free Trade Agreement (NAFTA). The 1992 Reform of Article 27 purported to inject a significant amount of new investment into the agricultural sector by protecting and increasing property rights, but the reform did not yield a

The collapse of oil prices in 1982 and 1985 was a determining factor in the sudden changes that occurred in economic variables. During those years the Mexican economy received severe shocks in its terms of trade that resulted in the deterioration of fiscal and debt imbalances. However, no such changes occurred during the Salinas Administration and such sources of potential instability disappeared. On the other hand, the

<sup>14</sup> *PRONASOL* did not publish its objectives and policies as other Government programs did. It did not disclose detailed information about the allocation of resources until its last year of operation.

<sup>15</sup> It is symptomatic that well-argued warnings of unsustainable current account deficits did not have a significant effect on foreign investment until it was too late.

combination of a more open economy and adverse terms of trade generated price shocks particularly in the agricultural sector, which was already falling behind the rest of the economy (see Figure 2).

Setbacks in the terms of trade clearly existed before the Zapatista movement, but they were minor compared to the 1986 terms of trade shock;<sup>16</sup> it is difficult to attribute social revolt to such changes. More important was the relative deprivation of people related to agriculture, since Constitutional changes to property rights and the negotiation of NAFTA intended to foster rural development and labor-intensive production. Real earnings of people in the agricultural sector, were relatively lower than in any other sector. In this light, it makes sense to consider the Chiapas uprising as part of wider rural discontent as expectations were consistently generated and frustrated.

Other indicators show additional grounds for increased frustration (see Table 2). Government forecasts at the beginning of the Salinas Administration considered a gradual increase in GDP growth. However, the gap between expected growth and actual growth widened. In 1993 the National Development Plan fell short by almost 6 points in its forecast of actual growth. On the other hand, one of the factors frequently associated with the Chiapas uprising, as shown in Table 2, was the drastic fall of coffee prices from 1985 to 1992. Although, these picked up slightly from 1992 to 1993, the result was ambiguous since, although some relief was brought to coffee producers, the increases probably did not live up to their expectations.

A decline in employment was another factor associated with frustration. The end of a brief recovery (1989–1991) raised urban unemployment rates to 3.7% in 1993; unemployment in the rest of the country showed the same trend. The 2.3% annual increase of population that reached working age plus a growing participation rate in the labor market<sup>17</sup> resulted in a growing number of people frustrated by the lack of employment opportunities.

<sup>16</sup> That year oil prices fell 24.3%.

<sup>17</sup> Participation rates rose by a strong 0.5 points per year between 1991 and 1995 according to OECD calculations.

**Table 2**

Frustration indicators	1984	1989	1992	1994
GDP growth gap	-0.6*	0.2	3.5	3.2
Coffee prices (dollars per pound)	1.456 b	0.892 d	0.633	0.699f
National open unemployment	4.4	2.8	3.8	3.9
Income share of the poorest 20% (national)	4.83	4.39	4.28	4.35
Income share of the poorest 20% (rural)	5.36	5.38	5.47	6.13
Relative political power	100a	98.6c	101.6	102.8f
Relative human rights complaints**	N/A	100e	217,000	189f

Source: My own calculations with information from *PND*, *CEPAL*, *ENIGH-INEGI*, Foweraker (1995), *OECD* and National Commission for Human Rights..

\* Based on the 1982 estimate of economic growth  
\*\*1989=100

a-1983, b-1985, c-1987, d-1990, e-1991, f-1993

Relative deprivation in agriculture was a source of frustration, but it is important to comment that it did not translate into the relative decline of the poorest 20% of the population. From 1992 to 1994 this group increased its real income 1.6 points above the national average. Thus, relative deprivation is not an evident phenomenon since, according to some methods of measurement, in fact, even decreased. Another tool that provides information that contradicts the hypothesis of increased frustration is the evolution of the Index of Political Power in relation to economic conditions. To construct this Index, the recoded Humana Index of Political Rights<sup>18</sup> is divided by the GDP Per Capita Index; from 1987 to 1993 there was a relative increase in political and civil rights. There was no stagnation of gains in political power amid economic recovery, on the contrary, when economic growth was very low, there was slight progress in the protection of political rights.

<sup>18</sup> The Humana Index is calculated by scoring forty questions on political, civil and social rights. All Humana questions are drawn from the Universal Declaration of Human Rights. The recoded Index includes only civil and political rights as freedom from torture, freedom from serfdom, freedom from political censorship and freedom for multiparty elections. The maximum score is 100 for complete protection of rights (See Foweraker, 1995). The GDP Per Capita Index is calculated according to the 1980 base. The Index of Relative Political Power is set at 100 for 1983. For 1993 the Humana index of 1992 is used assuming no changes in political and civil rights have occurred.

Another indicator of relative political power is the number of complaints related to human rights violations per capita divided by the GDP per capita. The Relative Human Rights complaints index shows an actual decrease from 1992 to 1993 confirming that before the *Zapatista* uprising, there was no loss of civil rights with respect to economic performance.

There is no uniform trend in frustration indicators. There is evidence of rising expectation and price and quantity setbacks, but it is difficult to conclude that there was an imbalance between political power and economic conditions. On the other hand, relative deprivation increased but it was a phenomenon related only to a particular sector, not exclusive of the national or rural poor.

### REDISTRIBUTION OF POWER

A third explanation of social revolt defines organized rebellion as a rational action dependent on the expected net gains resulting from engaging in civil violence. In turn, the expected net gains depend on the costs of participating in social rebellion, on a significant change in political and economic conditions being gained when governmental authority is successfully challenged and on the perceived probabilities of such success. It is rational for an agent to engage in social revolt or at least to support it when net gains obtained from disavowing authority and the probability of successfully doing so are high

The costs of participating in a rebellion are the time and resources sacrificed in order to join organized violence; these opportunity-costs are generally low for those in extreme poverty. However, a more important set of costs involves the penalties enforced by the authorities, or by their supporters: arrest, confiscation of resources, torture or even death may be the price paid for armed rebellion.<sup>19</sup> These possible consequences usually discourage individuals in extreme poverty, as they tend to be more averse to risks that could result in potential losses or that could endanger their lives.<sup>20</sup> Another consideration is that, if the rebellion is unsuccessful, the expected punishment by

governmental authorities is usually dearly paid for by the leaders of the revolt, although not so much by the rest of the rebels.

The benefits of participating in organized civil violence are those associated with the change of regime. Some examples of this are: increased economic resources, redistribution of existing income and wealth, political power or legal concessions. These benefits are almost independent of an individual's participation in the rebellion. However, a second set of rewards such as a position in the new structure of authority does depend on the individual's participation in the revolt and on its success. This type of rewards are scarce and selective and are not widely inclusive; it constitutes the set of reciprocal reinforcements of individuals acting together and sharing the same goals that promote wider, collective action. Ideology provides the setting that allows closely associated individuals to generate rewards that are not conditioned by the expected success of the revolt. This last kind of benefits involves lower costs and adds to the subjective rewards of working towards the realization of the common vision.

Some rebellions become revolutions with mass participation, but the activists of organized civil violence usually constitute only a small part of the population. This set of individuals not only finds a net benefit in snatching the right to control their actions away from the government but also in investing time and resources in building and expanding an organization capable of finding an alternative to the actual exercise of authority. This net benefit surpasses the net gains of continuing to regard the actual power structure as legitimate. Authority is divested when individuals no longer believe that a government can, or will, provide a social order that generates and distributes beneficial rights and economic results of a superior nature than those that a successful revolt can probably provide.

The estimated probability of generating an actual change depends on how the power of the rebel force against that of a government is perceived. This power, in turn, depends on the number of individuals that find a net gain in their investment in the rebellion and in challenging authority; as contagious effect can be generated if a great many persons join the revolt. On the other hand, if a government is perceived as weak in its exercise of power, the estimated probability of a successful revolt increases;

<sup>19</sup> These costs may be low in the initial stages of the revolt if public opinion curbs human rights violations or the use of force to confront the rebels.

<sup>20</sup> See Levy (1994, p.67)

not only its net gains look more attractive than those of the vacillating authority, but also its punitive ability is seen as diminishing. The relative net value for a given probability of success is hoisted by both these factors as it nourishes itself in that this perception in turn increases the number of individuals willing to participate and invest in the revolt and this again raises its estimated probability of success.

Taking into account the above explanation, an improvement in economic conditions might increase the revolt's perceived chances of success for it would add power and resources to those attacking the status quo. The effect of improved conditions may be as well to strengthen the belief in the potential success of those opposed to government authority among the population as a whole, unless the improved conditions greatly reduce dissatisfaction and thus undermine the evaluation that the regime is worse than one that might replace it. From this perspective, it is not important for the rebels to convince the entire population of the benefits of an alternative regime, but rather to make certain that they themselves are regarded by the population as powerful. Popular support will flow, not on the grounds of ethnic considerations, but on the actual possibilities of gaining the right to exercise legitimate power.<sup>21</sup> What matters in a social revolt is the people's belief regarding the relative power of the antagonists and about what will happen if they support one side or the other. However, how the general population feels about the revolt is not irrelevant, since it will determine if the rebels are able to move freely within the areas of conflict; to achieve unimpeded actions only passive support is necessary, not the sharing of abstract goals.

The theory of redistribution of power can dispense with the explanation of frustration as

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<sup>21</sup> Why did the *EPR* not win as much popular support as the *Zapatistas*? Both movements emerged in poor States and involved similar claims. One element that could explain this phenomenon is the relative weakness of the new rebels in comparison to the *EZLN*. At the beginning of the social uprising, the *Zapatistas* invaded four municipalities, declared war on the Federal Government and established a stronghold in the *Selva Lacandona* (Lacandonan Jungle). *EPR* actions, on the other hand, were intermittent and geographically disperse. It did not embody a credible threat to governmental authority and also were not regarded as a viable alternative to the exercise of legitimate power.

the basis for revolts. In organized civil violence, even when dissatisfaction is decreasing, if there is a credible threat to governmental authority, there will be grounds for support and involvement. A feeling of frustration will persist if even in the presence of a strong challenge, the regime remains in power. However, frustration and redistribution of power are better seen as complementary explanations for rebellion. This view regards insubordinate actions as the product of dissatisfaction with the existing social order and the belief that revolt against it will be successful, but frustration by itself is not the cause of organized civil violence. So the question that now arises is: Are there grounds for believing that before the *Zapatista* uprising took place, the potential net gains of a revolt were increasing by comparison to the those provided by the status quo maintained by the Government?

There is ex post evidence that the existing conditions were adequate for the *EZLN* to emerge. The costs of the rebellion in the first year of its uprising were significantly reduced by decreasing poverty, additional resources for low-income groups, a more active human rights defense and the pressure of national and international public opinion. The highly organized nature of the *EZLN* consisting of "professional soldiers", an army of peasants, the *Comité Clandestino Revolucionario Indígena* (Clandestine Indigenous Revolutionary Committee) and a Communal Assembly<sup>22</sup> shows a lower opportunity cost for investing resources in the rebellion. On the other hand, a world-wide press coverage of the military mobilizations in Chiapas prompted a stop to an armed "solution" that was led by human rights concerns and by pressures brought on by public opinion. Two weeks after the uprising, the Federal Government conceded a "unilateral truce" that formally reduced the sanctions for the rebel forces that took part in the conflict. The costs of participating in the revolt did not vanish as the Government broke the truce in February 1995. However, in 1996, a law granting amnesty to rebels willing to negotiate and withdraw from the armed conflict was decreed. The costs of an unsuccessful rebellion, if the rebels surrendered, were practically reduced to zero by this law.

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<sup>22</sup> See Gunther Dietz (1995) for a more detailed account of the organizational nature of *EZLN*.

The benefits of revolting also seem clear ex post: six weeks after the Zapatista uprising, the Federal Government was at the negotiating table during the *Jornadas por la Paz y la Reconciliación* (Conference for Peace and Reconciliation) with 32 proposals in reply to the 34 initial demands of the rebels<sup>23</sup>. A special office that would hear indigenous claims was set up, and in 1995, the share in poverty-reduction expenditure for Chiapas was almost doubled. The Government was ready to discuss legal changes for the indigenous communities, an Agrarian Reform at a national level, and new electoral and justice laws at a local level. The San Andrés Larrainzar Accords included the autonomy of the indigenous communities. In 1997, in a mass demonstration in Mexico City the creation of the *Frente Zapatista de Liberación Nacional (FZLN)* (Zapatista Front for National Liberation), the political branch of the *EZLN*, was announced; several supporters of the Zapatistas, who at one time had been jailed, became leaders of the new organization. The uprising obtained the Government's non-repressive attention, resources, legal concessions, political power and the necessary conditions for developing ideological ties amongst their supporters.

It was now obvious, that the *EZLN* had the capacity to mobilize men and resources for violent and peaceful tasks. From the initial military mobilizations to the creation of the *FZLN*, the Zapatistas image was that of a unified group which had become a powerful challenge to authority. Even though the militarily capabilities of the Zapatistas were no match for the Mexican Army, it was clear that the charisma of *EZLN* was able to attract press coverage and public attention, thus, drastically reducing the possibility that force would be used against them. Weaknesses in Government policies in detecting and dissolving the rebellion, are evident today: the National Security co-ordination was impaired when an experienced Secretary of the Interior, Fernando Gutiérrez Barrios was replaced in 1993 by a former Governor of Chiapas, Patrocinio González. Even after several Zapatista training camps were detected by the Mexican Army several months before the uprising, Government Intelligence had no coherent picture of the nature of the movement. The power of the Zapatista movement and the weaknesses of the Government resulted in a rebellion with probability one.

<sup>23</sup> The resignation of President Salinas, as originally demanded by the *Zapatistas*, was rejected and the reply to their demand for effective and democratic national elections was that both aspects of Mexican political life were already in progress.

Ex post, the characteristics of the revolt were consistent with the redistribution of power theory<sup>24</sup>. But what about ex-ante indicators?

It is very difficult to gather data regarding the costs and benefits of a prospective revolt. Not only there is little evidence about the actual expenses and expected returns of a social uprising in its stages of formation, but much of the information, that influences the decision of an individual to participate, is subjective. Which is the set of rewards that potential rebels perceive as an alternative to the economic and political status quo? How much relative power in the revolting coalition is apprehended by individuals? However, if the theory of redistribution of power aspires to be more than an ex-post rationalisation of organised civil violence, it must justify itself with, at least, some indirect evidence on the probability of a revolt.

#### **REBEL IDEOLOGY, RELATIVE DEPRIVATION AND POLARIZATION**

Under reasonable assumptions, income distribution indicators, albeit not the traditional ones, can provide indirect information about the expected economic gains of a revolt and its probability of happening. The starting point is the idea

<sup>24</sup> There is more evidence that conforms to the redistribution of power theory. Coleman (1990, pp. 500-502) indicates that the rebels' optimal strategy involves early success in displaying power; severe punishment for acting in support of the other side; not engaging in indiscriminate terror; demonstration of the weaknesses of the authorities; seeking external support; an utopian ideology that challenges authority; incorporation of existing grievances of the population into proposals and isolation of potential recruits from non-supporters. The *EZLN* actions follow this pattern: it began by the spectacular taking of five towns simultaneously, two days later it kidnapped the former Governor of Chiapas, Absalón Castellanos, it judged him and declared him guilty of crimes against the people, but instead of executing him, he was released; the authorities appear to be unable to identify, locate and attack the *zapatista* forces and, when they do, national and international media and public opinion prevent military actions; the Declarations of the Lacandonan Jungle and several of Marcos' letters provide severe criticism of the Government, justify civil violence and demand widely-supported social and economic changes. Finally, when the movement became under attack, it withdrew to a region with a high degree of closure within groups of supporters.

that the probability of a revolt depends on the number of individuals that find a positive expected net gain in rebelling. The expected net gain is the alternative income multiplied by the probability of a successful revolt, minus the actual income weighted by the probability of failure. Rebel ideology contains, among other things, a proposal for an alternative income distribution that maximizes the size of the coalition that finds a positive net gain in organized civil violence. On the other hand, government authorities could reply by setting penalties or re-distributive rewards that minimize the net gains of engaging in rebellion.

The above set of conditions indicates that rebel ideology, in order to recruit potential members, will have to make known in advance, a progressive, re-distributive proposal. If the "middle" classes are small, antagonistic coalitions will form more quickly. The progressive, distributive proposal will generate dissatisfaction with present income distribution among low-income groups who, if they join the revolt and the revolt succeeds, will obtain rewards. The comparison between the *status quo* and the expected gains of a revolt arouses relative deprivation feelings that fuel frustration and a predisposition to rebellion. On the other hand, the formation of a coalition becomes easier if a cluster of low-income, potential rebels exists. A redistribution proposal will divide a broad, middle-income class, as some will support the rebellion and some will not, and some will be undecided, which will weaken collective action. If income distribution is polarized, the middle class will play a minor role in stopping the formation of a coalition. On similar grounds, John Roemer (1985) has developed a model of revolutionary activity that concludes that if a revolt is highly probable, then the optimal rebel strategy is to propose a progressive income distribution. Furthermore, if rebellion is highly probable, it is because it is highly polarized: the undecided middle class disappears.

There are additional reasons to consider relative deprivation and polarization as indicators of potential revolt. The comparisons between "haves" and "have-not's" generate discontent, envy or feelings of unfairness in a society. Envy is a powerful emotional force behind social upheaval and shared perceptions of unfair treatment facilitate the formation of common ideological beliefs that decrease

the costs of collective action. Besides, the presence of groups with substantial intra-group homogeneity and inter-group heterogeneity reduces the costs of articulated rebellion and of generation of tensions. A society divided into two well-defined and separate coalitions, exhibits a high potential for social conflict.<sup>25</sup> The implications of these arguments are that an index of dissatisfaction with the present income distribution and an indicator of the importance of the middle classes are good proxies for the probability of revolt.

An initial way to think about relative deprivation is to consider dissatisfaction with present income distribution independently from any proposed option. From this point of view, an individual is relatively deprived with respect to other individuals if that person has less income than the others. However, a person attaches more weight to comparisons with individuals who have a similar income; comparisons with extremely rich persons carry little weight.<sup>26</sup> Total relative deprivation felt by an individual amounts to the sum of all income differences perceived. The degree of relative deprivation in a society as a whole, is the sum of the total relative deprivation of all individuals belonging to it.

Social relative deprivation is zero if there is an equal income distribution. Because deprived individuals only compare to one extremely distant person, total relative deprivation is very low if maximum inequality exists, that is to say, that one person has all the income and the rest of the individuals have nothing. For a given total income, maximum relative deprivation exists when half the population has no income and the other half divides the total income equally amongst them. In this last case, we have the maximum number of comparisons

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<sup>25</sup> Podder (1997, p.372) indicates that "Obviously, when relative deprivation is maximum in the society, discontent is also maximum and this is the stage at which the probability of a social conflict is the highest". Esteban y Ray (1993, p.5) add: "...the more polarized a society is, more probable is that interest differences lead to an open conflict."

<sup>26</sup> Individuals tend to compare with the reference group with which they interact. Dissatisfaction is mainly elicited when the next-door neighbor commands a greater quantity of resources, not when the position of someone, socially or economically distant, improves. On this point see Podder (1997, p. 358-359).

between the “haves” and “have-not’s” with not very different incomes.

On the other hand, polarization means the presence of significantly-sized population clusters, such that each cluster has members with similar characteristics, but different clusters have members with dissimilar characteristics. Society is an amalgamation of groups in which high polarization occurs when there is a high degree of homogeneity within each group, a high degree of heterogeneity across groups and a small number of significantly-sized groups. Isolated individuals or groups of insignificant size carry little weight, since the interest is on organized, collective action and not spontaneous, singular expressions of social exclusion. In this perspective, individuals feel identified with those who have similar incomes, if there is a large number of persons in the same income class, and feels alienated from others whose incomes are different. Because alienation depends on income differences, low-income individuals feel estranged from rich individuals and vice versa. The effective antagonism of an individual against others, depends on the degree of identification or alienation that person feels towards them. Total polarization is the sum of all effective antagonisms.

If there is an equal income distribution among individuals, all members of society belong to the same income class and identify with each other, therefore, no alienation or

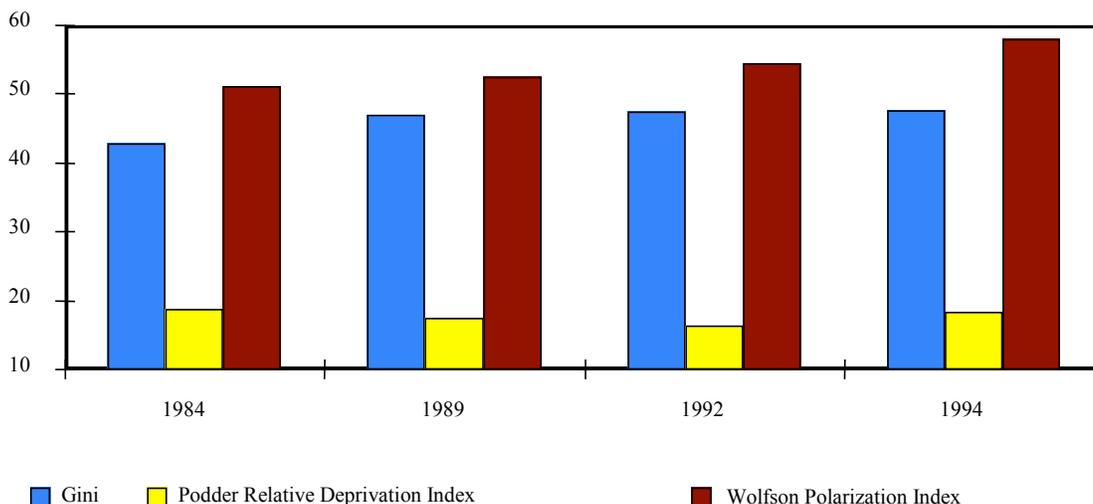
antagonism exist. If maximum inequality occurs, then polarization is very low since one individual gets all the income and the rest of society gets nothing. In this case, most of the individuals would identify with each other and feel alienated in respect to only one person. Maximum polarization exists when half of society is in a zero-income class and the other half divides the total income equally. In this case, the minimum number of groups achieves maximum identification among the groups and maximum antagonism across the groups. This last situation means the dissolution of the middle class into rich and poor income categories.<sup>27</sup>

When there is an equal income distribution, relative deprivation, polarization and inequality are at their lowest. Maximum inequality generates low, relative deprivation and low polarization. Maximum relative deprivation and maximum polarization emerge with an intermediate degree of inequality, when society divides equally between the “haves” and “have not’s”. Clearly, relative deprivation and polarization can move together, and very differently, than inequality. However, relative deprivation and polarisation are different phenomena. Relative deprivation measures dissatisfaction with present income distribution while polarization captures the relative importance of the middle class.

Recently, different sets of axioms and descriptive techniques provided several relative

**Figure 3**

Inequality, relative deprivation and polarization indicators



Source: My own calculations with information from ENIGH, 1984,1989,1992,1994, INEGI.

deprivation and polarization measures: Podder's Relative Deprivation Index, Wolfson's Polarization Measure and the family of polarization indicators by Esteban and Ray are examples of this. However, they are only approximations of distribution dissatisfaction and of the formation of antagonistic groups. On one hand, present relative deprivation must be compared with the one that would exist with an alternative income distribution. On the other hand, the population clusters weighted by polarization measures do not necessarily coincide with those with actual positive, net gains obtained by engaging in civil violence. Since alternative income distribution proposals and potential rebel coalitions are hard to detect, relative deprivation and polarization measures are used for this purpose.

Figure 3 shows data on the evolution of inequality, relative deprivation, and polarization as measured by the Gini, Podder and Wolfson indexes.

The Gini coefficient is a standard measure of income inequality that ranges from zero (perfect equality) to one (maximum inequality). The Podder index measures relative deprivation using a logarithmic weighting of incomes, and ranges from zero (perfect equality) to one (maximum relative deprivation).<sup>28</sup> The Wolfson index measures polarization according to a Lorenz curve transformation and it ranges from zero (perfect equality) to one (maximum polarization).<sup>29</sup> The salient feature of this data is the very high, polarization index that increases 13.7% from 1984 to 1992,<sup>30</sup> from 1992 to 1994 polarization posted a 6.14% increase. On the other hand, relative deprivation does not appear to be very high although it increased by 12.4% from

1992 to 1994. Finally, after an important increase from 1984 to 1989, inequality remained relatively stable from 1989 to 1994.

From the Podder and Wolfson indexes it is possible to conclude that a combination of relative deprivation and polarization preceded the Zapatista uprising. Although the indicators moved sharply in the key period 1992-1994, a more careful analysis is needed to appraise the joint importance of these factors.

Table 3 provides additional information on the deepening of relative deprivation and polarization. At a national and rural level, from 1984 to 1994, the poorest 70% of the population obtained less than the average income, while the richest 30% earned more than the average income. The relative income of the poorest group approached the degree of relative deprivation. This measure clearly shows a widening gap between the less-than-average income population and its complement. On the other hand, the income share of the intermediate 60% of the population serves as an indicator of the decreasing relative importance of the middle class. The trends were different for rural areas in the 1992-1994 period. However, these indicators are still crude approximations to the notions of relative deprivation and polarization. The Esteban and Ray family of polarization indexes provides a more precise measure of this phenomenon.<sup>31</sup>

The Esteban and Ray simple polarisation index uses absolute income differences to measure antagonism and population frequencies to incorporate intra-group identification. It is similar in its conception to the Wolfson index, and ranges from zero (perfect equality) to one (maximum polarization).<sup>32</sup> Although it seems very low, it is quite high when compared to previous calculations of the same index.<sup>33</sup> Of particular importance is the fact that from 1984 to 1994 it increased 5.8%. The Esteban and Ray polarization indicators are very versatile,

<sup>27</sup> In fact, as argued by Wolfson (1994, p.353), polarization is a shorthand for the phenomenon of the disappearing middle class.

<sup>28</sup> Relative deprivation is calculated as  $RD = \sum_i \sum_j (\ln I_i - \ln I_j)$  for  $I_i > I_j$  and then divided by the maximum level of relative deprivation  $M = [N/2] 2 \ln[(2It/N) - 1]$ , where  $I_i$  is the income of the  $i$ th individual,  $N$  is total population, and  $It$  is total income.

<sup>29</sup> The Wolfson index is  $(2 - 4L_m - 2G)/(Im)$  where  $L_m$  is the accumulated income share of 50% of the population and  $Im$  is the median income divided by the average income.

<sup>30</sup> Polarization is higher than inequality (so they can be compared, both range from zero to one). Wolfson (1994, p. 357) has reported for Canada labor income polarization indexes that range from 33.8 to 41.7.

<sup>31</sup> In order to more easily appraise their properties and extensions, the Esteban and Ray basic indexes were derived axiomatically.

<sup>32</sup> Simple polarization is calculated as  $Ps = 2 \sum_i \sum_j P_i^2 P_j I X_i - X_j z I$  where  $P_i$  is the population share of income class  $i$  and  $X_i$  is the income share of income class  $i$ . This equation is very similar to the one that defines the Gini coefficient, which is closely related to the Lorenz curve.

<sup>33</sup> Esteban and Ray measure polarization of world growth rates. For Gini coefficients, similar to those for Mexico, they obtain polarisation levels of 0.44.

allowing the incorporation of different ways of measuring social antagonism. If instead of using income shares in the index the natural logarithm of income is used, the indicator becomes similar to the Podder Relative Deprivation Index.<sup>34</sup> This combined polarisation relative deprivation coefficient increased by 31.9% from 1992 to 1994.

Finally, the poor might feel alienated from the rich, but not vice versa, as sense of identification could depend on economic power. If so, it is possible to obtain a weighted index that captures relative deprivation, the polarization of the poor and the potential resources that were invested in a conflict.<sup>35</sup> This index is the main indicator of potential rebellion and steadily increased by 35.32% from 1984 to 1994.

**Table 3**

Relative deprivation and polarization indicators (%)	1984	1989	1992	1994
Relative income (richest 30% / poorest 70%)	161,00	185,00	190,00	193,00
"Middle class" income share (II-VIII quintiles)	45.67	42.06	41.54	41.12
Relative income (rural)	147,00	151,00	147,00	142,00
"Middle class" income share (rural)	47.61	46.95	46.88	47.4
Esteban and Ray simple polarization index	1.82	1.89	1.9	1.93
Esteban and Ray logarithmic polarization index	78.36	55.98	50.65	66.85
Esteban and Ray weighted asymmetric logarithmic index (WAL)	56.29	70.3	74.52	76.17

Source: My own calculations with information from ENIGH, 1984,1989,1992 and 1994, INEGI.

A convincing conclusion can be reached: although, from 1984 to 1994,

<sup>34</sup> This index is  $P_s = (4 / \ln 2 \ln m) \sum_i \sum_j P_i^2 P_j I \ln |i - j|$  where  $\ln 2 \ln m$  is the natural logarithm of twice the average income,  $P_i$  is the population share of income class  $i$  and  $\ln |i - j|$  is the natural logarithm of income of individual  $i$ . This equation is very similar to the one that defines the Podder relative deprivation index, except for the squared  $P_i$  and the fact that all comparisons between rich and poor are considered.

<sup>35</sup> The index weighs the comparisons between the poor and the rich using the natural logarithm of income of a poor individual. Zero weight is attached to the comparison of a rich agent with a poor person. The index becomes  $P_s = \sum_i \sum_j P_i^2 P_j (\ln |i - j|) I \ln |i - j|$  for  $|i| < |j|$ . In this case no homogenization of the index is done (the index does not range from zero to one) so richer deprived agents in a polarized society are more prone to rebel.

relative deprivation and polarization indexes did not always change in the same direction, from 1992 to 1994, they all pointed to a significantly increased possibility of a potential social conflict. When the key concept of relative deprivation is not considered (the use of the logarithmic scale means that individuals attribute more weight to comparisons with persons of similar income groups) polarization always increases. The probability of an organized revolt grew from 1984 to 1994 as a result of the combination of relative deprivation with social polarization and the resources of those with less income. It seems that income polarization is the main economic ingredient for civil violence.

### IS CIVIL VIOLENCE A LOCAL PHENOMENON?

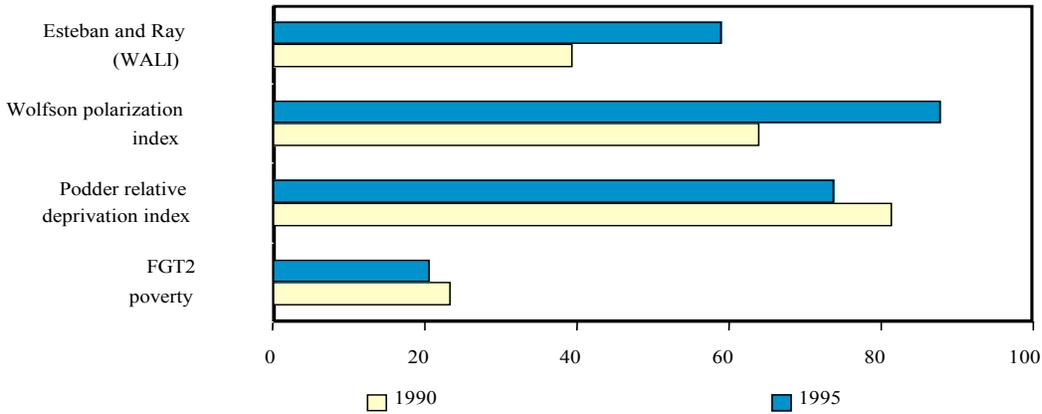
Up to now, the Zapatista rebellion has been considered the expression of a national phenomenon. But, should it not be considered just a local movement disguised in pompous clothing? Perhaps in this light, poverty is the explanation of civil violence and not other factors. The information available for several poverty, relative deprivation and polarization indexes at state level are presented in figure 4.<sup>36</sup> The data clearly shows that from 1990 to 1995, while polarization increased in Chiapas, relative deprivation and extreme poverty decreased. This information is consistent with the theory of redistribution of power and does not contradict the general results at a national level. Although it may be reasonable to consider that local polarization reinforced a national phenomenon and vice versa, it is difficult, in any case, to argue that a fall in the living conditions of the extremely poor triggered the revolt.

If local and national polarization reinforce each other, an interesting question emerges.

<sup>36</sup> This information is not strictly comparable to the previous indexes, since national census and household surveys do not use the same definition of income. However, although the *level* of the indexes differs, the broad *changes* they indicate are captured by the data. It should be noted that since 1995 incorporates the effects of the 1994 December crisis, the indexes overestimate the extent of poverty, relative deprivation and polarisation at the beginning of 1994, so a note of caution is due before any interpretation. The only clear-cut result seems to be that extreme poverty did not increase in Chiapas before the Zapatista uprising.

**Figure 4**

**Poverty, relative deprivation and polarization indicators in Chiapas 1990,1995**



Source: My own Calculations with 1990 and 1995 Census data, INEGI.

Which states are prone to social conflict? The answer is found in Table 4 which shows the states with the larger indexes of relative deprivation and polarization. The data includes inequality and extreme poverty indexes that confirm that these are not always associated with high, relative deprivation and polarization. States were ranked according to the Esteban and Ray proposition that polarization in small populations is less significant than among larger groups.<sup>37</sup>

**Table 4**

State distribution indicators 1995	Gini coefficient	Extreme poverty FTG2	Podder index	Wolfson index	Esteban and Ray WAL
Federal District	26.27	2.71	32.02	37.77	69.75
Mexico	33.13	8.67	48.38	84.21	56.8
Veracruz	41.52	16.26	66.65	81.94	61.26
Jalisco	35.13	10.75	53.06	83.93	53.78
Guanajuato	38.95	16.43	65.87	74.03	45.11
Nuevo Leon	26.26	6.21	41.74	45.94	63.73
Puebla	42.62	18.74	71.13	75.26	53.61

Source: My own calculations based on the 1995 Census data, INEGI.

<sup>37</sup> Therefore, the WAL multiplied by population was used to determine the ranking. See Esteban and Ray (1994, p.848).

The more populated states exhibit the largest probability of organized civil violence. It is interesting to note that in 1995 Oaxaca and Guerrero, two of the poorest states, were not among those more prone to social conflict. However, in 1996 the *EPR* was active in those States.<sup>38</sup> The explanation of a low Esteban and Ray WAL of potential revolt in Oaxaca and Guerrero was poverty. Those two states have very high relative deprivation and polarization indicators<sup>39</sup>, but the probability of revolt decreased with a single index that combined the available resources of the polarized and deprived groups. There is no information at state level for 1996, but it is possible that, at the beginning of that year, the Esteban and Ray indicator rose when the GDP regained positive growth rates. If so, it seems that the *EPR* uprising could have been triggered by economic recovery combined with very high relative deprivation and polarization.

**CAUSES AND CONSEQUENCES OF RELATIVE DEPRIVATION AND ECONOMIC POLARIZATION**

It is beyond the scope of this paper to explain the origins of relative deprivation and economic polarization as measured by the indexes reported.<sup>40</sup> However, there is a recurrent piece of

<sup>38</sup> *EPR* attacks were also reported in the States of Mexico, Guanajuato, Veracruz, Tabasco and Chiapas. The *EPR* declared that rebel forces were present in Mexico City; unidentified guerrilla activity was detected in Puebla.

<sup>39</sup> For 1995, the Podder and Wolfson indexes are 78.10 and 83.22 for Oaxaca, and 87.37 and 71.16 for Guerrero.

<sup>40</sup> Unlike inequality and poverty indexes, relative

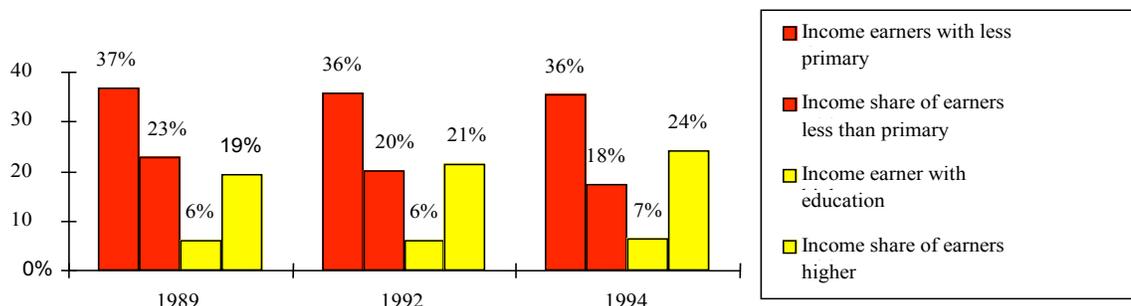
evidence associated with a markedly economic division of society: second only to economic liberalization, human capital differences are the single most important variable explaining poverty and inequality in Mexico.<sup>41</sup> Wages play a key role in understanding not only the evolution of inequality and poverty, but also relative deprivation and polarization.

low-education earners and growing income share of high-education earners.

This relative distance between skilled and non-skilled labor also exists in the composition of the labor force. Table 4 shows wage earners by occupation and their monetary income share. Wage earners with high skills and decision-making jobs, sometimes called the “new middle class”,<sup>43</sup> represent a decreasing percentage

**Figure 5**

Income earners and their income share by education lev



Source: My own calculations based on information from ENIGH, INEGI.

Different analyses show that in recent years the institutional and technological change of the Mexican economy has substituted non-skilled labor by capital, thus, the demand for low education and workers with little education and experience decreased.<sup>42</sup> The impact that this situation has had on the agricultural sector, with its low educational levels and a young and rapidly growing labor force, means that it will continue to lag behind the rest of the national economy. There is a relative gap between average wage earnings and agricultural wage earnings, but the gap between skilled and non-skilled labor is of a general nature.

Figure 5 shows the relative stability of income earners composition according to education levels, the decreasing income share of

deprivation and polarization indicators are not yet open to decomposition analysis that will allow an explanation of the relative importance of different factors related to them.

<sup>41</sup> Szekely (1997) decomposes various inequality and poverty indexes to examine the causes of these phenomena and concludes that 73.3% of the increase in economic inequality, from 1984 to 1992, is explained by the differences in educational levels and 52.0 of the changes in poverty arise because of occupational characteristics related to human capital.

<sup>42</sup> See Epelbaum and Cragg (1994). Dietz (1995, p.78) identifies the substitution of unskilled labor by technology in Chiapas since the mid-1970's.

of the total population of income earners, however their share of monetary income has increased. Nevertheless, the gap is also growing in other sectors of the work force: high-level executives, managers and administrative coordinators make up an almost constant share of total earners whose share of total monetary income has also increased while the income and earners' share of supervisors, professionals and technicians has decreased.

**Table 5**

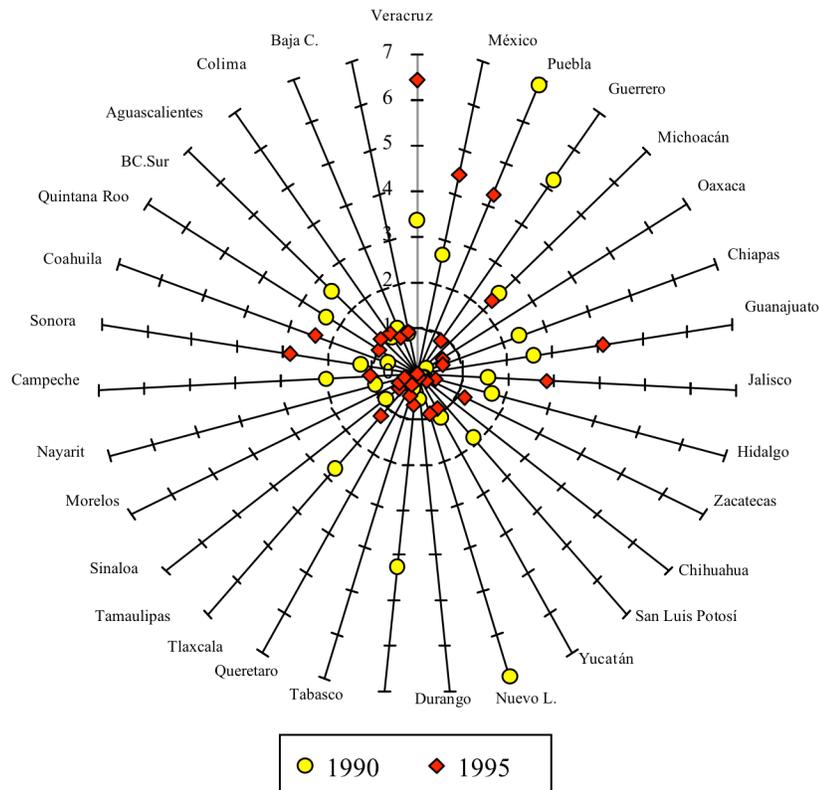
Wage earners and their share of monetary income by occupation	1989		1992		1994	
	E	I	E	I	E	I
High level officials and managers	1.3	3.1	1.9	10.4	1.5	8.8
Administrative coordinators	2.5	4.8	2	4.4	2.3	6.3
Supervisors	1.9	3	1.5	2.7	1.4	2.4
Professionals and Technicians	9.5	16.6	5	10.6	6.8	14
"New middle class"	15.2	27.5	10.4	28.1	12	31.5
Other wage earners	51.7	40.5	61.6	40.4	58.3	40.6
Total of wage earners	66.9	68	72	68.5	70.3	72.1

Source: My own calculations based on information from ENIGH, 1984,1989,1992,1994, INEGI.

<sup>43</sup> See Wrigth (1986)

**Figure 6**

Targeting errors of poverty -reduction social expenditure



Source: My own calculations based on Census data and data in the President's Report, 1990, 1995

No attempt is made to reduce the very complex phenomena of relative deprivation and polarization to one single factor. However, as in the case of poverty and inequality, the human capital returns contribution to the widening gap between skilled and non-skilled labour -and from there to a sharp break in society- makes an interesting hypothesis to explore.

The consequences of civil violence for social policy are, perhaps, a more important point than the origins of relative deprivation and polarization. The hypothesis in this case is that if rebellion does not depend on increased poverty but on the joint contribution of relative deprivation and polarization, social policies oriented to respond to potential conflict will then not coincide with an alleviation of poverty.

Figure 6 shows the targeting errors in public spending for the reduction of poverty, before and after the Zapatista uprising.<sup>44</sup> A

<sup>44</sup> Only targeting errors at state level are considered, a situation that underestimates possible deviations from poverty targets due to intra-state errors. A

targeting error is the difference between a state's share in national poverty and its share in total poverty-reduction expenditure.<sup>45</sup>

Scott and Bloom (1996) detected that social expenditure increased from 1990 to 1995. Seventeen states reduced their targeting errors and the total sum of errors decreased. Table 6 shows the target characteristics of poverty-reduction expenditure.<sup>46</sup> From 1990 to 1994 the Mexican

detailed evaluation of targeting policies is not currently available.

<sup>45</sup> This is done for Levy's (1994) extreme poverty line of 16.61 dollars per person per month at 1984 prices using the average free exchange rate. The Foster-Greer-Thorbecke index with squared terms is used to measure poverty shares. Ravallion and Chao (1989) show that targeting by poverty shares is not the optimal strategy (see Scott and Bloom 1997). However, it is the easiest one and the one finally adopted by the Mexican Government.

<sup>46</sup> To measure the shares of targeting errors and the general index, the sum of squared errors was used to attach more weight to the biggest mistakes. The index used is  $E = 1/2 \sum_j |e_i|^2$ , and  $e = FGT_{si} - G_{si}$ .  $FGT_{si}$  is the poverty share of the state  $i$  and  $G_{si}$  is the expenditure share of state  $i$ . This index ranges from zero (perfect targeting) to one (all expenditures are allocated to a zero poverty state). Mexico City was excluded from these calculations.

Government reduced the average targeting error by correcting over-spending but increased the share of under-spending errors. Not all targeting errors were reduced by the same amount. The difference between the share of social expenditure and the poverty share in Chiapas was almost completely corrected. The six poorest states were allotted better targeting even though they were not benefited as much as Chiapas. The correction of under-spending errors of the poorest states only contributed 39% to the reduction of total targeting errors. However, the general association between targets and instruments increased as measured by the correlation coefficients between poverty and social expenditure. This meant that the correction of targeting errors did translate into a more consistent allocation.

**Table 6**

Targeting characteristics of poverty-reduction expenditure	1990	1995	% Change
Average targeting error (% points)	1.97	1.46	-25.71
Share of over-spending errors (%)	45.09	18.52	-58.92
Share of under-spending errors (%)	54.91	81.48	48.38
Share of errors in the poorest states (%)	45.18	62.56	38.47
Share of errors for Chiapas (%)	2.61	0.27	-89.66
Correlation of poverty and social expenditure	51.66	69.36	35.05
Index of targeting errors	1.92	0.68	-64.58

Source: My own calculations based on Census data and data in the President's Report 1990, 1995

When the biggest targeting errors are weighted more than the small ones, the index of targeting errors shows a very substantial improvement in poverty-reduction policies. The States of Puebla, Guerrero, Michoacan, Hidalgo and Chiapas had the most important correction for under-spending errors. Although Veracruz and the State of Mexico have the largest shares of national poverty, Oaxaca is also a major contributor to poverty, and these states suffered an increase in under-spending errors. Over-spending was corrected mainly in San Luis Potosí, Nuevo León and Tabasco.

We can conclude that even when targeting improved from 1990 to 1995, after the Zapatista rebellion, the poorest states

continued to suffer a severe problem of under-spending. Chiapas clearly obtained an advantage over less conflictive states. It would seem that the Federal Government, more concerned with governability than with poverty, sought control through social expenditure.

### CONCLUDING REMARKS

In January 1996, after seven months of peace negotiations with the *EZLN* and before the *EPR* became active, the Mexican Government officially announced that the main part of the poverty-reduction expenditure (the so called *Ramo 26*) would be allocated to the states according to explicit poverty criteria. The relative reduction of the pressures for immediate governability and the prospect of future stability brought a significant improvement in targeting practices for social policy. However, *Ramo 26's* real expenditure decreased 20.7% from 1994 to 1997 and under-spending errors prevailed in the poorest states after the *EPR* attacks. No poverty-reduction plan was announced until mid 1997, when it was clear that *Ramo 26* was no longer the axis of social policy towards the poor. The new plan took shape through the *Programa de Educación, Salud y Alimentación (PROGRESA)* (Program for Education, Health and Nutrition) that attempted to link school and attendance to health clinics with cash bonuses to buy food. The available studies evaluating the program (see *Progresá*, 2000) show less targeting errors with this new strategy, whose name was changed later to *Oportunidades* (Opportunities). The considerable reduction in civil violence episodes has generated the impression of a more efficient social policy in contrast with the previous perspective of a poverty-reduction expenditure program used as a tool for governing.

On the other hand, if technological change and structural adjustment are behind the increases in polarization, it seems that the Mexican economy will have a less unstable future. In the first place, the most important adjustment towards global technology, through trade liberalization, has already been made, and future technological change is likely to be less traumatic. Secondly, the main institutional changes through privatization and economic deregulation are almost complete. The relative returns of skilled and non-skilled labor could only be changed in a

significant way by the labour market reform, but even if this is the case, an informal economy is already giving flexibility to the price of low human-capital labor. In any case, investment to reduce educational differentials could prove very important in avoiding future cases of organized civil violence.

Unfortunately, the possible improvement in the targeting of poverty-reduction expenditure and the potential decline in economic polarization, do not seem to affect the chances of a rapid solution to the conflict in Chiapas. On one hand, as not only operational problems, but political barriers arise, targeted benefits are difficult to sustain in areas of conflict. New benefits could be blocked by the EZLN, since these could erode the base that supports the rebels. Also, it is likely that the targeted benefits will reach non-supporters of the *Zapatista* rebellion or undecided individuals, thus maintaining or increasing political divisions in the State. On the other hand, even when economic polarization decreases, the optimal rebel strategy is to commit to maximum social change. If the rebel leaders appear indecisive, their base of supporters can become frustrated and seek stronger leadership. However, polarization amongst the rebel coalition could lead to new episodes of civil violence, but this time not as well organized.

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