2 How Much Inequality Can be Explained?

To verify the hypothesis that the shifts in income distribution in Mexico between 1984 and 1992 were determined by the fact that economic liberalization provided better opportunities to the individuals who were in a better position to take advantage of them, it is first necessary to know why some individuals were in a better position at the start. This chapter addresses this issue by asking how much of the income inequality in Mexico can be explained.

In the literature on inequality measurement, two applications to explain inequality are found. One consists on decomposing inequality by population subgroups to identify the influence of certain population characteristics in the distribution of resources, and the other focuses on decomposing inequality by factor components, which allows us to explore the relation between total inequality and each source of income.

The first approach has been the most widely used mainly because the range of inequality measures that fulfill the criteria for the decomposition generate robust interpretable results, but methods for decomposing inequality by factor components are seldom used in applied research due to the existence of various theoretical problems.

To apply the last method and obtain robust conclusions, this chapter builds on some previous research to explore ways of solving some of the theoretical difficulties in the decomposition by factor components, and suggests a method to do so. The methodology we develop can be easily extended to generate information on the causes of a change in inequality as well as on the impact of some government interventions on income distribution. Thus, we will also extend the methodology here, but the extension will be applied later in Chapter 3.

This chapter is divided into four sections. Section 2.1 deals with the theoretical aspects of the decompositions. Section 2.2 applies the decomposition by population subgroups. Section 2.3 focuses on the decomposition by income source and Section 2.4 draws some conclusions.
2.1 DECOMPOSING INEQUALITY

The most common application of inequality measures, consists on examining the relation between overall inequality $I$ and the inequalities that arise in specific subgroups of the population. This procedure consists on selecting some characteristic ($\pi$) to divide the subgroups (usually one that is relevant for policy discussion, such as labour market status, age, gender, regional location, and so on), and then calculate $I$ as a sum of the inequalities within the subgroups ($I_w$) plus the inequality arising from the differences between the subgroup means ($I_B$). This allows to express some inequality indexes included in $I$, as:

$$I = f(I_w(\pi), I_B(\pi))$$

where $I$ is required to be additively decomposable.

As proved by Bourguignon (1979), Cowell (1995) and Shorrocks (1980 and 1984), the only inequality measures that fulfill all the desirable requirements of an index and are additively decomposable at the same time, belong to the family of ‘Generalized Entropy Indices’, which include some well known measures such as the Atkinson and Theil indexes, but exclude the Gini and other commonly used indicators.

For the purposes of this work, we will use the Theil index weighted by population (denoted $T$) which can be expressed as:

$$T = T_w(\pi) + T_B(\pi)$$

The ‘within-group’ component $T_w$ is obtained through the weighted sum of the inequalities within each group (the population shares are used as weights), and it is usually interpreted as the inequality that would be eliminated if the income of every individual in the subgroups was identical. The ‘between-group’ term $T_B$ represents the inequality that is due to the differences between the subgroups defined by $\pi$, and is normally thought of as the inequality that would be eliminated if the average incomes of all the groups were equal.

As explained by Cowell and Jenkins (1995) the between-group term measures the inequality ‘accounted for’ or ‘explained’ by the characteristic chosen to divide the population, and these authors