

NEW FACTS ON POVERTY IN PORTUGAL*¹

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1. INTRODUCTION

Poverty represents a deprivation of the basic right of individuals to fully participate in the social, economic, cultural and political life of their communities. The poor tend to be excluded from several markets, face limited access to legal and political institutions and invest insufficiently in acquiring assets that optimize their participation in economic activities, in particular human capital. Further, this exclusion tends to be transmitted across generations. In a context of imperfect markets, the importance of reducing poverty levels is thus founded not only on equity but also on efficiency grounds.

The persistently high poverty rates in Portugal represent an inescapable issue of the Portuguese development process in recent decades. A growing literature has analysed this question, starting with the seminal works of Silva (1982) and Costa *et al.* (1985). Subsequent important contributions may also be highlighted, in particular Silva *et al.* (1989), Pereirinha (1996), Ferreira (2000), Albuquerque *et al.* (2006), Rodrigues (2007) and Costa *et al.* (2008). This article builds upon these works and aims to present recent evidence on the characteristics of the poor in Portugal and on several mechanisms that determine poverty in Portugal.

Relative to the above references this article presents several novelties. First, it is based on the latest expenditure survey in Portugal, with data for 2005/06. The survey is also used to uncover evidence on a number of important phenomena, such as the life-cycle evolution of households' income and expenditure, the intergenerational transmission of education and the existence of positive assortative mating along education lines in Portugal. Second, the poverty indicators are based not only on income aggregates but also on expenditure aggregates, which potentially give different insights on the composition, dynamics and determinants of poverty. Finally, the article presents an analysis of several poverty determinants based on multivariate regressions, which allows assessing the relative contribute of each explanatory variable, controlling for the impact of the other.

To understand recent poverty trends in Portugal and to design optimal policies to fight poverty it is important to move beyond the simple statistical measurement of poverty and disentangle the mechanisms influencing poverty spells. Poverty may be usefully understood as the combination of (i) individuals and families' decisions in face of aggregate and idiosyncratic shocks; (ii) the set of institutional features characterizing the economy, including the socio-demographic structure, the level of hu-

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man capital and the functioning of goods, labour and credit markets; and (iii) the myriad of public policies affecting the choice-set and the incentive structure facing individuals. Naturally, these three dimensions are strongly interrelated. Below we will present several insights regarding the contribution of these features in explaining recent poverty trends in Portugal, even though it will not be possible to statistically identify, for each factor, causality in a strict sense.

The remainder of this article is structured as follows. In Section 2 we clarify the concept of poverty as well as several methodological assumptions adopted in the analysis. Section 3 presents a thorough account of poverty in Portugal in 2005/06 and a brief presentation of the main trends for the period 1994/95 – 2005/06. Section 4 estimates the quantitative importance of several covariates of poverty in Portugal within a Probit regression framework. Section 5 presents the main conclusions and, in this light, previews several forces influencing poverty dynamics in the near future.

2. CONCEPTS AND METHODS

There is probably no definition that captures simultaneously all the dimensions that characterize living in poverty (see Lang, 2007 and Jantti and Dazinger, 2000). In this article poverty will be conceptually defined as a situation of deprivation based on lack of resources which limits individuals from fully participating in society (for close definitions see Rodrigues, 2007, or Costa *et al.*, 2008). Two dimensions should be highlighted concerning this definition. On the one hand, the requirement of full participation in society implies that the poverty concept is relative and that the poverty threshold is linked to the overall resources of society in each period.² This implies that the evaluation of the existence of a situation of lack of resources includes “not only the commodities which are indispensably necessary for the support of life, but whatever the customs of the country renders it indecent for creditable people, even of the lowest order, to be without” (Adam Smith, *The Wealth of Nations*, 1776). On the other hand, the definition refers to the lack of economic resources as defining poverty and thus abstracts from broader concepts such as social exclusion or multidimensional poverty. In the latter case, the analysis would also focus on issues such as the inadequate access to housing, education, health care and justice, as well as to individual vulnerabilities preventing the fulfilment of basic human needs. It is nonetheless important to note that economic deprivation, as analysed in this article, is an important determinant of multidimensional poverty (Berthoud and Zantomio, 2008).

We will consider an individual to be poor within a given time period if her level of equivalized income (expenditure) is below 60 per cent of the median equivalized income (expenditure) in Portugal in that period. There are five dimensions of this definition worth clarifying and qualifying.

First, the definition of a poverty line equal to 60 per cent of median equivalized income (expenditure) follows the Eurostat definition of an individual “at risk-of-poverty”. The link between the poverty line and median income reflects the relative nature of our poverty concept. This contrasts with the concept of

(2) In this context it is interesting to note that, as argued by Sen (2003 and 2006), a position of relative poverty in the space of income may contribute to a position of absolute poverty in the space of capabilities (where capabilities refer to the individual's freedom and ability to pursue the basic entitlements in society, whether material, social or political).²

absolute poverty, where the poverty line is defined with respect to the value of a specific basket of basic goods, which usually remains fixed over long periods.³ There are no definite arguments in the literature sustaining the choice of one of these concepts. In practice, almost all studies undertaken in the European Union and a growing number of studies for the remaining advanced countries use measures of relative poverty (see Jantti and Dazinger, 2000, European Commission, 2009, OECD, 2008, or Jesuit and Smeeding, 2002). In the present study, the choice for a definition based on relative poverty is based in addition on the overall reasonability of the poverty lines using the admittedly ad-hoc threshold of 60 per cent of median income (expenditure).⁴ In fact, we estimate that the poverty line computed using total expenditures, for the case of a household composed by just one individual, was €406 per month in 2006 (at 2006 prices). In turn, the poverty line computed with monetary income stood at €382 per month in 2005 (at 2005 prices)⁵. According to the equivalence scale used in this study (see below), those values would be multiplied by a factor of 2.1 in the case of a family composed by 2 adults and 2 children. To put these figures in perspective, it can be noted, for example, that the gross monthly income of an individual earning the minimum wage in 2006 stood at €437.

Second, we will compute the poverty measures using data from the latest three household expenditure surveys, conducted by Statistics Portugal (INE). The surveys were conducted in 1994/95, 2000 and 2005/06.⁶ Around 10000 non-overlapping households participated in each survey. The surveys provide information not only on the income and expenditure patterns of each household but also on several socio-demographic characteristics of the households and the comprising individuals. Total income and expenditure include both monetary and non-monetary components. The non-monetary components correspond to owner-occupied housing, self-consumption, wages paid in goods and other non-monetary transfers. The measure of household income in the expenditure survey includes social transfers and is liquid of taxes and contributions to social security regimes. The surveys also provide household weights that allow extrapolating the results to the population as a whole (INE, 2008a). These weights were used in all computations in the present study. It should finally be noted that while the household expenditures refer to the main year of each survey (1995, 2000 and 2006), the income aggregates refer to the year preceding the survey (1994, 1999 and 2005, respectively).

Third, given that the measurement unit in the expenditure surveys is the household, we assume that resources are fully shared within each household. Everyone living in a poor household is thus equally poor. In addition, household income and expenditure has been rescaled in order to take into account the fact that different households – in terms of size and composition – have different needs. There is some dispute in the literature on the extent of economies of scale within households and thus on how

(3) For example, in the US, the official poverty line is computed with the method proposed by Orshansky (1965). This method starts by estimating the minimum cost of a nutritional diet for families of different sizes. Subsequently, this cost is multiplied by a factor corresponding to the inverse of the weight of food expenditures in total expenditures. The poverty line thus obtained is adjusted annually for inflation using the CPI-U. This methodology has been subject to numerous critiques in the literature (see Meyer and Sullivan, 2008b).³

(4) This conclusion contrasts with the one obtained if poverty lines were computed based on absolute concepts of poverty. In this case, as reported in Costa et al. (2008), the poverty line calculated on the basis of an absolute concept of poverty “for most recent dates is too high, leading to implausibly high poverty rates”.⁴

(5) The poverty lines for all income and expenditure aggregates used in this article are presented in Table 1.⁵

(6) The first two surveys were named Survey to Household Budgets (*Inquérito aos Orçamentos Familiares - IOF*) and the most recent was named Survey on Household Expenditure (*Inquérito às Despesas das Famílias - IDEF*). For a thorough presentation of the questionnaire and sample design of the latest *IDEF* 2005/06, see INE (2008a).⁶

to “equivalize” income and expenditure. In this article, we use the OECD modified equivalence scale, which attributes a weight of 1.0 to the first adult in the household, 0.5 to other adults and 0.3 to children (below 15 years). Whenever income and expenditure measures are mentioned in this article they will always refer to equivalized aggregates.

Fourth, the analysis conducted in this article will focus symmetrically on income and expenditure aggregates. This contrasts with most of the recent studies for Portugal, which are uniquely based on income aggregates, but is consistent with the insights in the literature that no single measure yields a perfect account of the degree of resource deprivation (see Blundell and Preston, 1998). The authors favouring income measures typically underline that entitlement to a minimum income is a prerequisite for participation in society. In this case the premise is that there is a minimum right to resources (Atkinson, 1998). Those favouring expenditure measures focus primarily on the existence of a minimum standard of living. They also argue that expenditure captures best not only long-term living standards but also the role of government programs and credit markets (Meyer and Sullivan, 2008). Furthermore, there is evidence of underreporting of income in these types of surveys (Rodrigues, 2007). These arguments suggest that poverty indicators based on expenditure aggregates are, at a minimum, indispensable complements to the indicators based on income aggregates (see Meyer and Sullivan, 2008b, for an analysis of the evolution of poverty in the US using consumption and income indicators). Below, we will show that both measures yield several different conclusions regarding the level, composition and recent trends in poverty during the last decade but yield close insights as regards the underlying factors associated with poverty.

Further, we will study not only poverty indicators based on total expenditure and income but also indicators based on expenditure excluding rents and monetary income. Considering these latter aggregates is important (i) for comparability reasons, given that most poverty studies in the European Union refer to monetary income poverty; (ii) because imputed rents display a questionable surge between the 2000 and 2006 surveys, which significantly affects the intertemporal comparability of the results (see Subsection 3.3 below); and, (iii) because it is not clear theoretically whether housing services should be included in the income and expenditure measure.⁷ For these reasons, in this article we will typically analyse two measures of income (total and monetary) and two measures of expenditure (total and excluding rents).

Finally, the cross-section nature of the data sets prevents an assessment of the degree of persistence of poverty in Portugal, an analysis of the main poverty triggers and mitigating factors, as well as a study of the reasons explaining the duration of poverty. It should be clear that analysing poverty dynamics is crucial to develop not only a better understanding of the causes underlying poverty experiences but also to design more effective policies targeted against poverty. The new EU Statistics on Income and Living Conditions (EU-SILC), available for Portugal since 2004, is an important step in this direction

(7) As mentioned by Lang (2007), the analysis of a measure of income and expenditure excluding housing services may be justified if the household depends on remaining in that specific house to participate fully in society.⁷

(see Costa *et al.*, 2008, for an analysis of poverty dynamics in Portugal using the European Union Household Panel, for the period 1995-2000).

3. UPDATED FACTS ON POVERTY IN PORTUGAL

In this section we present some facts on poverty in Portugal using the most recent expenditure surveys. Subsection 3.1 documents aggregate measures of poverty in 2005/06. Subsection 3.2 then presents several poverty profiles, identifying the main characteristics of the poor in 2005/06. Finally, Subsection 3.3 assesses the main poverty trends in Portugal over the last decade.

3.1 A picture of aggregate poverty in 2005/06

Chart 1 shows the distribution of the expenditure and income aggregates in Portugal in 2005/06. As can be seen from the figure, these distributions are highly skewed, with around 65 per cent of individuals having expenditure and income levels below average.⁸ The figure also suggests that a significant number of individuals lies below the poverty line in each case.

Table 1 quantifies these observations. The table presents three indicators of poverty, as suggested by Foster *et al.* (1984).^{9,10} These indicators take the form:

$$FGT(\alpha) = \int_0^z \left(\frac{z-y}{z} \right)^\alpha f(y) dy, \quad \alpha \geq 0$$

where z represents the poverty line and y represents either the income or expenditure level. $FGT(0)$ corresponds to the headcount ratio, i.e., the proportion of the population that is poor. $FGT(1)$ corresponds to the average normalised poverty gap, i.e., the average distance between income and expenditure of poor individuals and the poverty line, as a fraction of the poverty line. $FGT(2)$ squares the average distance to the poverty line thus attributing more weight to the poor individuals that are farthest from the poverty line.

In Table 1, these indicators are presented with bootstrapped standard errors in parenthesis. The standard errors account for the fact that the data stems from a survey of households and thus inevitably contains some margin of error. When drawing comparisons between indicators or when analysing the evolution of a certain indicator over time it is important to take these standard errors seriously in order to be able to draw conclusions that are statistically significant.

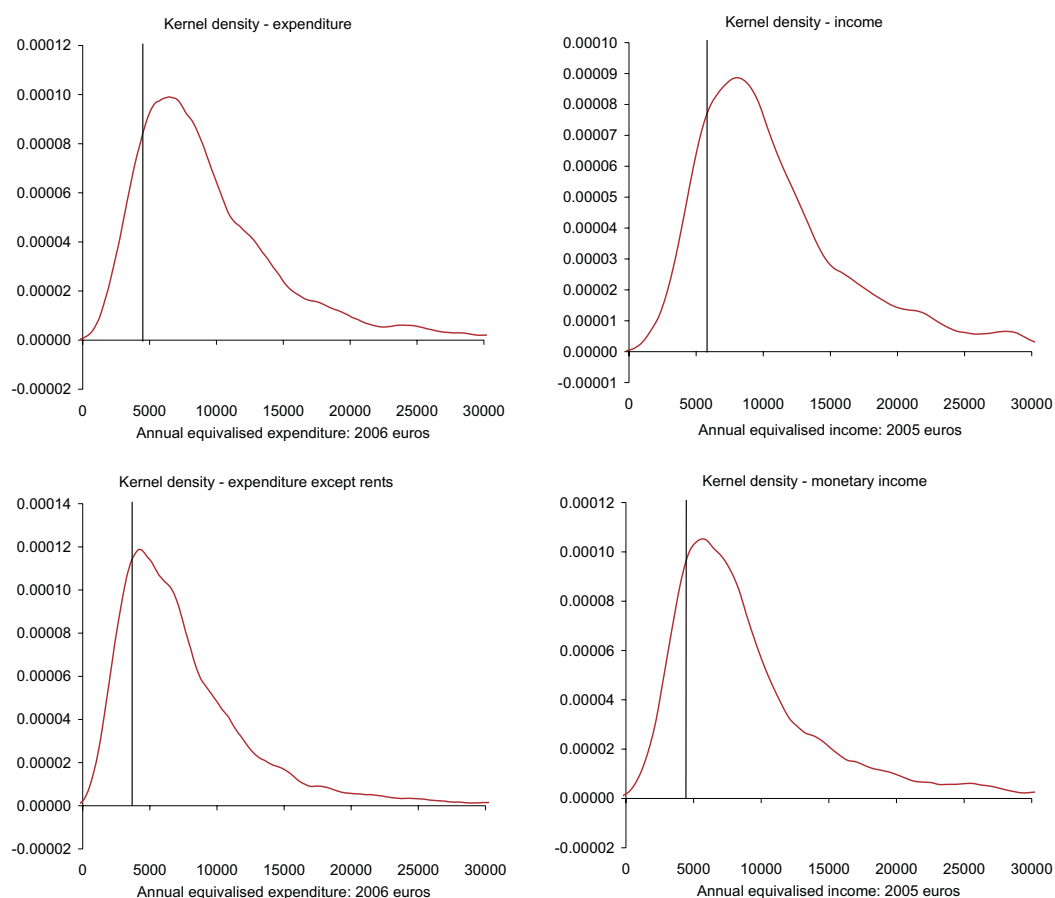
(8) According to the survey, the mean of total annual expenditures (total income) was €9793 (€12278); the 90th percentile of total annual expenditures (total income) was €17373 (€21944) and the 99th percentile of total annual expenditures (total income) was €35574 (€47605).⁸

(9) These indicators fulfil several important properties (see Jantti and Dazinger, 2000). In particular, they are additively decomposable, which allows straightforward breakdowns of poverty across groups in the population. See, however, the critique to the general decomposability nature of these indicators in Sen (2006).⁹

(10) For completeness Table 1 also presents some inequality indicators, namely the Gini index and several decile expenditure/income shares.¹⁰

Chart 1

DISTRIBUTION OF EXPENDITURE AND INCOME



Source: IDEF 2005/06.

Note: The vertical line represents the poverty line for the case of a sole person.

There are important insights on aggregate poverty in Portugal that can be drawn from the table.¹¹ First, the level of poverty in Portugal is high irrespective of the indicator under analysis. In terms of international comparisons, while the proportion of poor in Portugal measured with monetary income stood at 18.5 per cent in 2005, the corresponding Eurostat figure for the European Union and the euro area at that time was 16 per cent. Only three euro area countries – Spain, Greece, and Ireland – displayed a slightly higher income poverty rate compared to Portugal, even though not statistically different at standard confidence levels (taking into account the standard errors reported in Table 1). In turn, the lowest poverty rates in the European Union – standing close to 10 per cent – were observed in Sweden, the Netherlands, the Czech Republic and Denmark.

Second, the table quantifies the number of poor in Portugal, also with a breakdown by age group, for the income and expenditure measures analyzed in this study. Taking into account the uncertainty

(11) Table 2 also highlights the strong inequality in the distribution of income and expenditure, one of the highest in the European Union. As a striking illustration of this pattern, it can be mentioned that the income (expenditure) of the highest decile amounts closely to the sum of the income (expenditure) of the first five deciles of the respective distribution.¹¹

Table 1

	Expenditure		Income	
	Total	Exc. rents	Total	Monetary
Poverty lines: one person household (euros per year)	4 869.41	3 796.24	5 815.49	4 584.00
Foster-Greer-Thorbecke poverty indices				
FGT(0): headcount ratio (proportion poor)	0.184 (0.005)	0.211 (0.006)	0.162 (0.005)	0.185 (0.005)
FGT(1): average normalised poverty gap	0.047 (0.002)	0.060 (0.002)	0.038 (0.002)	0.049 (0.002)
FGT(2): average squared normalised poverty gap	0.019 (0.001)	0.026 (0.001)	0.014 (0.001)	0.020 (0.001)
Number of poor				
Children (under 15)	1 951 033	2 235 992	1 717 759	1 959 267
Prime-aged adults (15-64)	282 618	326 476	299 158	313 396
Individuals aged 65 or over	1 102 760	1 259 934	979 179	1 116 875
Gini index	0.329 (0.004)	0.357 (0.004)	0.344 (0.005)	0.373 (0.006)
Decile group shares (in percentage)				
Q1 (first decile)	3.016 (0.051)	2.629 (0.047)	3.139 (0.060)	2.765 (0.058)
Q2 (second decile)	4.607 (0.053)	4.159 (0.057)	4.607 (0.062)	4.220 (0.064)
Q10 (tenth decile)	25.473 (0.344)	27.033 (0.372)	27.569 (0.515)	29.631 (0.594)

Source: IDEF 2005/06.

Notes: Average values and poverty lines defined per equivalent adult. Values in euros per year (evaluated at 2005 prices for income and 2006 prices for expenditure). Observations weighted with sample weights. Bootstrapped standard errors in parenthesis.

around each of these measures, as well as the differing conclusions using each measure of income or expenditure, it can be concluded that the number of poor in Portugal in 2005/06 stood close to 2 million, of which around 300000 were children. These figures are globally in line with those reported in Rodrigues (2007), European Commission (2009) and INE (2008a, 2008b). They represent a representing a disquieting reality in the Portuguese development process.

Third, according to the expenditure survey, the non-monetary income components decrease the incidence and depth of poverty. This is mainly related to the prevalence of owner-occupied housing in Portugal, also among the poor. This finding, reported also in Rodrigues (2007), implies that the traditional monetary income indicators may overstate the true level of poverty in Portugal.

A fourth insight implicit in Table 1 is that the poverty depth – for example computed with – is not extremely deep. This is in part related to the fact that the survey does not capture the most destitute in society, who are thus also excluded in a statistical sense. In terms of income (monetary income), the mean of poverty gaps in 2005 stood at around €1350 (€1200) per year. Coupling this information with the properties of the income distribution in Portugal, we are able to calculate that the poverty gap in Portugal in 2005 corresponded to 3.9 percent per cent of the monetary income of the 30 per cent rich-

est individuals (3.5 per cent if total income was considered). This illustrates markedly the high income inequality prevailing in Portugal.

Finally, the table also highlights that the level of poverty measured with expenditure aggregates is higher than the one computed with income aggregates. This raises a natural question of understanding whether the individuals identified as poor when the expenditure aggregates are used coincide with those identified as poor with income aggregates.

Table 2 aims to answer this question. The main conclusion of the table is that the intersection between those groups is limited. From the group of individuals who are expenditure poor, only around half are also income poor. From the group of individuals who are income poor, around 63 per cent are also expenditure poor.¹² These are seemingly low figures but have also been reported for other economies (see Brewer *et al.*, 2006, for the case of the UK). The reasons behind this non-overlap may be three-fold. First, expenditures may be lumpy in the short-term, in particular due to the acquisition of durable goods, and this may change the relative position of individuals in the expenditure/income scale. Second, expenditure surveys usually display significant measurement errors. In particular, it is well known that income is usually underreported in these surveys. Third, income varies significantly over the life-cycle of individuals and also in response to idiosyncratic shocks, such as unemployment, disability, work bonuses, retirement or breaks from employment due to family responsibilities. In face of these shocks, agents tend to smooth expenditures, by changing the level of savings or debt. This is actually

Table 2

INTERSECTION BETWEEN THE INCOME POOR AND THE EXPENDITURE POOR					
	IDEF 2005/06			IPEF 2006	
	Fraction	Expendit. (euros)	Income (euros)	Fraction	Net wealth (euros)
Expenditure poor	100.0	3 628.2	6 192.4	100.0	25 642.5
Expenditure poor and Income poor	51.1	3 350.6	4 237.2	51.2	18 659.1
Expenditure poor and Income non-poor	48.9	3 905.6	8 146.4	48.8	32 390.7
Expenditure poor and Expenditure exc. Rents poor	89.3	3 498.1	6 145.2	89.5	26 697.2
Expenditure poor and Expenditure exc. Rents non-poor	10.7	4 520.0	6 515.4	10.5	18 326.2
Income poor	100.0	4 947.3	4 454.2	100.0	23 787.1
Income poor and Expenditure poor	62.7	3 350.6	4 237.2	63.0	18 659.1
Income poor and Expenditure non-poor	37.3	7 044.3	4 739.2	37.0	30 682.4
Income poor and Monetary income poor	83.8	4 913.3	4 253.4	84.1	27 123.3
Income poor and Monetary income non-poor	16.2	5 096.1	5 333.7	15.9	9 317.1
Expenditure non-poor and Income non-poor	100.0	11 577.6	14 493.4	100.0	80 098.0

Sources: IDEF 2005/06, IPEF 2006.

Notes: Observations were weighted with sample weights; variables defined per equivalent adult. Net wealth is computed only for the subset of households in the IPEF. Values defined in euros per year (evaluated at 2005 prices for income and 2006 prices for expenditure and net wealth).

(12) The Table 2 also highlights that there is a large intersection between the expenditure poor and the "Expenditure excluding rents" poor, as well as between the income poor and the monetary income poor.¹²

one of the reasons why expenditures may better represent the permanent income position of the agents instead of the more volatile information stemming from monetary income.¹³ In this case, the information based on expenditure may better reflect longer-lasting poverty spells. The last column in Table 2 suggests this may actually be the case in the IDEF 2005/06. In particular the level of net equivalized wealth of the income poor individuals who were not expenditure poor was significantly higher than the net wealth of the remaining income poor (while the net wealth of the former stood at slightly above €30000, the net wealth of the latter was below €20000).¹⁴ This fact suggests the existence of a relevant role of wealth in the smoothing of expenditure decisions by the income poor households.

The fact that different conclusions arise from the use of different aggregates implies that a thorough analysis of all the data is important to draw a robust and consistent picture of poverty in Portugal. In the next subsection we thus analyse a number of poverty profiles for various measures of income and expenditure.

3.2 Who were the poor in Portugal in 2005/06?

This subsection presents a set of disaggregate facts on poverty in Portugal, breaking down the aggregate poverty incidence across a number of socio-economic characteristics. These poverty profiles are presented in Table 3, based on geographical location, household size, marital condition, age, education and employment status (with the latter three features related to the household's representative).¹⁵ It is important to note upfront that these poverty profiles do not establish causal relationships and do not allow inferring the underlying relationships between each variable and the incidence of poverty. A step in this direction will be undertaken in the regression analysis presented in Section 4.

Some fundamental facts are worth highlighting from the table.¹⁶ In terms of geographical breakdown, the regions with the highest poverty rates are, in descending order, Madeira, Azores and Alentejo.¹⁷ The Lisbon region and the Algarve consistently present the lowest poverty rates in Portugal. In this context it is important to note that the poverty lines are the same for all regions, which implies that differences in price levels – also associated with differences in the respective levels of income per capita – are not controlled for when measuring regional poverty.

As regards household size, the highest poverty rates are observed for households composed of 6 or more individuals (with poverty rates ranging between 31 to 42 percent). Households with just one indi-

(13) A quite striking example is reported in Costa *et al.* (2008), where it is shown that between 1995 and 2000 almost half of households in Portugal lived in poverty for at least one year. This high figure is in part associated with the fact that the analysis was based on monetary income aggregates.¹³

(14) The net wealth measure is computed with the latest Household Wealth and Indebtedness Survey (IPEF) carried out by Statistics Portugal and Banco de Portugal during the last quarter of 2006 and the first quarter of 2007. The sample of the survey is a sub-set of the respondents to the IDEF 2005/06, and is composed of about 8500 households. For a detailed presentation of the characteristics of the IPEF, see Farinha (2008).¹⁴

(15) The household representative is loosely defined as the member over 14 years which is recognized as such by the other members, and which must always reside on the same house.¹⁵

(16) The conclusions reported in table 3 for the incidence of poverty, FGT(0), would be qualitatively unchanged for other measures of poverty, such as FGT(1) or FGT(2). These results, as well as the corresponding bootstrapped standard errors, are available from the author upon request.¹⁶

(17) The North also records one of the highest poverty rates when total income is considered.¹⁷

Table 3

BREAKDOWN OF POVERTY INCIDENCE, BY THE CHARACTERISTICS OF THE HOUSEHOLD OR THE REPRESENTATIVE

	% sample	Expenditure		Income	
		Total	Exc. rents	Total	Monetary
Total	100.0	0.184	0.211	0.162	0.185
Region					
North	35.4	0.185	0.205	0.191	0.213
Center	22.5	0.232	0.248	0.160	0.201
LVT	26.3	0.110	0.145	0.122	0.120
Alentejo	7.2	0.260	0.293	0.167	0.207
Algarve	4.0	0.151	0.198	0.136	0.187
Azores	2.3	0.264	0.333	0.217	0.232
Madeira	2.3	0.298	0.357	0.187	0.235
Urban / rural					
Rural	12.4	0.362	0.355	0.272	0.338
Semi-urban	16.7	0.224	0.243	0.196	0.235
Urban	70.9	0.144	0.179	0.135	0.147
Household size					
1	6.1	0.268	0.329	0.254	0.346
2	20.8	0.211	0.265	0.181	0.218
3	29.8	0.134	0.163	0.109	0.142
4	28.0	0.146	0.154	0.124	0.140
5	9.8	0.202	0.231	0.242	0.202
6 or more	5.6	0.422	0.395	0.330	0.313
Age					
Less than 25	0.7	0.152	0.288	0.178	0.186
25-34	9.9	0.136	0.196	0.131	0.149
35-44	28.7	0.146	0.168	0.146	0.153
45-54	22.0	0.146	0.158	0.136	0.156
55-64	17.6	0.173	0.191	0.145	0.183
65-74	13.4	0.284	0.305	0.218	0.236
Equal or over 75	7.7	0.356	0.422	0.278	0.354
Education (completed)					
None	11.5	0.450	0.472	0.388	0.422
4 years	39.0	0.234	0.255	0.200	0.232
6 years	16.9	0.141	0.174	0.134	0.150
9 years	12.8	0.084	0.127	0.083	0.106
12 years	10.4	0.051	0.091	0.052	0.061
Tertiary	9.5	0.015	0.028	0.012	0.010
Employment status					
Worker (non self-emp.)	47.8	0.126	0.157	0.107	0.111
Self-employed	15.4	0.120	0.141	0.121	0.175
Unemployed	6.4	0.306	0.325	0.339	0.353
Retired	25.2	0.278	0.304	0.218	0.252
Non-worker	5.2	0.303	0.322	0.305	0.373
<i>For memory: subset of households with working-age representative (age over 14 and under 65 years)</i>					
Representative with no spouse/companion					
Working	8.7	0.135	0.135	0.188	0.152
Not working	3.9	0.359	0.342	0.349	0.402
Representative with spouse/companion					
Both working	50.8	0.096	0.060	0.121	0.063
One working	28.5	0.203	0.231	0.223	0.272
Both not working	8.2	0.226	0.249	0.247	0.270
of which: both unemployed	0.8	0.489	0.443	0.501	0.421

Source: IDEF 2005/06.

Notes: Average values and poverty lines defined per equivalent adult. Values defined in euros per year (evaluated at 2005 prices for income and 2006 prices for expenditure). Observations weighted with sample weights.

vidual also face significantly higher than average poverty rates. The lowest poverty rates are observed for households with 3 or 4 individuals, which represent more than half of the population.

With respect to age, the highest poverty rates are clearly concentrated in households with representatives older than 64 years and, in particular, in households where the representative is older than 74 years. All the other age brackets record lower than average poverty rates (with the exception of households where the representative is younger than 25 years, which represent a negligible fraction of the population).

The number of years of education of the representative is an important variable to identify the incidence of poverty. In fact, the poverty rate consistently decreases as the number of years of completed education increases. This relation holds robustly across all income and expenditure measures. It is noteworthy that over 40 per cent of households whose representative has zero years of completed education – mainly older households – are in poverty according to most measures. Households whose representative has only 4 years of completed education also record higher than average poverty rates (these households correspond to almost 40 per cent of the population). In contrast, households with representatives with 12 years or more of education face poverty rates clearly below 10 percent, which are close to zero in the case of those with tertiary education.

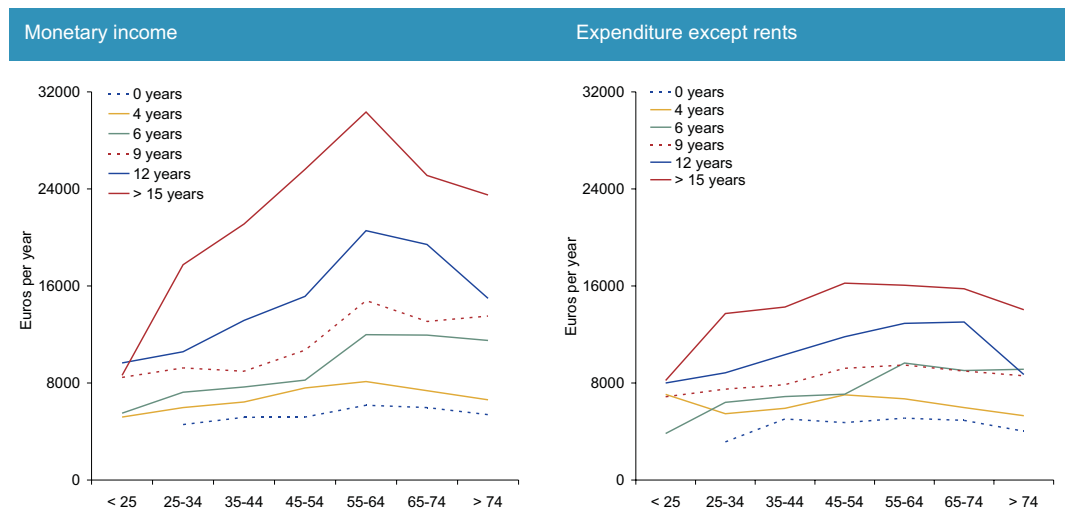
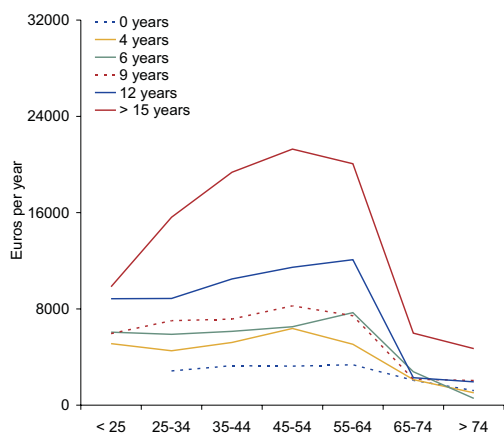
These figures are directly associated with the high returns to education in the Portuguese labour market, which are closely related to the low supply of educated individuals (this issue is explored further in Section 4 below). As shown in Chart 2, households with higher education levels can expect on average higher labour market incomes, higher total monetary incomes and higher total expenditure levels. Chart 2 also shows that these patterns occur along the full life-cycle of the households, with the maximum expected wage earnings - for all education levels - occurring between 45 and 64 years. The returns to education throughout the working life of an individual also translate into the pension levels in retirement. In fact, the sharp fall in labour market earnings occurring at retirement is only partially translated in a fall in monetary income, which is related to the existence of a social security system in Portugal. Finally, in line with theoretical predictions, expenditure displays a smoother profile relative to income, and displays a much milder fall in older age brackets.

In terms of employment status, Table 3 shows that households where the representative works have clearly lower poverty rates relative to the cases where the representative is unemployed, retired or not working for other reasons (this is the case, for example, of students, individuals with disability, individuals in public service or individuals taking care of their home or family). When we focus on working-age representatives (presented in the lower panel of Table 3) we also conclude on the importance of participation in the labour market. Households where the representative (and the spouse/companion) works face much lower poverty rates relative to the case where the representative (or the spouse/companion) is not working¹⁸. A particularly vulnerable situation occurs when both the representative and the

(18) For expositional purposes, from now on references to spouses should be interpreted as including companions as well.¹⁸

Chart 2

THE LIFE-CYCLE PROFILE OF WAGES, INCOME AND EXPENDITURE, BY EDUCATION ATTAINMENT
Wages including self-employment



Source: IDEF 2005/06.
Note: The x-axis refers to the age of the representative. The level of education refers to the maximum education of either the representative or the spouse.

spouse are unemployed. Almost half of the households are in poverty in this case¹⁹. Another vulnerable situation occurs for households with children and a single representative who does not work. In results not shown in the table we conclude that over half of these households live in poverty, regardless of the expenditure and income aggregate analysed.

Despite the impact of participating in the labour market in lowering the incidence of poverty, it must be noted that the shares of poor representatives and spouses who work is quite significant, albeit lower than the corresponding figures for the non-poor. Chart 3 below illustrates this fact. The chart presents the share of working representatives and spouses – for poor and non-poor households - in each age

(19) Note that poverty rates for this group when we use income measures stand at a lower level, around 43 per cent. However, it should be noted that there is a calendar mismatch that may influence the interpretation of the results. In fact, while representatives reported their "usual" employment status, the reported income refers to the full year of 2005.¹⁹

Table 4

BREAKDOWN OF THE POOR					
Per cent					
	Expenditure		Income		Memo:
	Total	Exc. rents	Total	Monetary	% sample
Children	14.5	14.6	17.4	16.0	15.5
Worker	29.3	31.3	25.4	24.8	44.0
Unemployed	7.6	7.4	8.9	8.4	5.4
Retired	29.8	29.3	25.6	26.9	19.3
Other non-worker	18.8	17.4	22.7	24.0	15.8
Total	100.0	100.0	100.0	100.0	100.0

Source: IDEF 2005/06.

Notes: Average expenditure / income and poverty lines defined per equivalent adult. Observations were weighted with sample household weights.

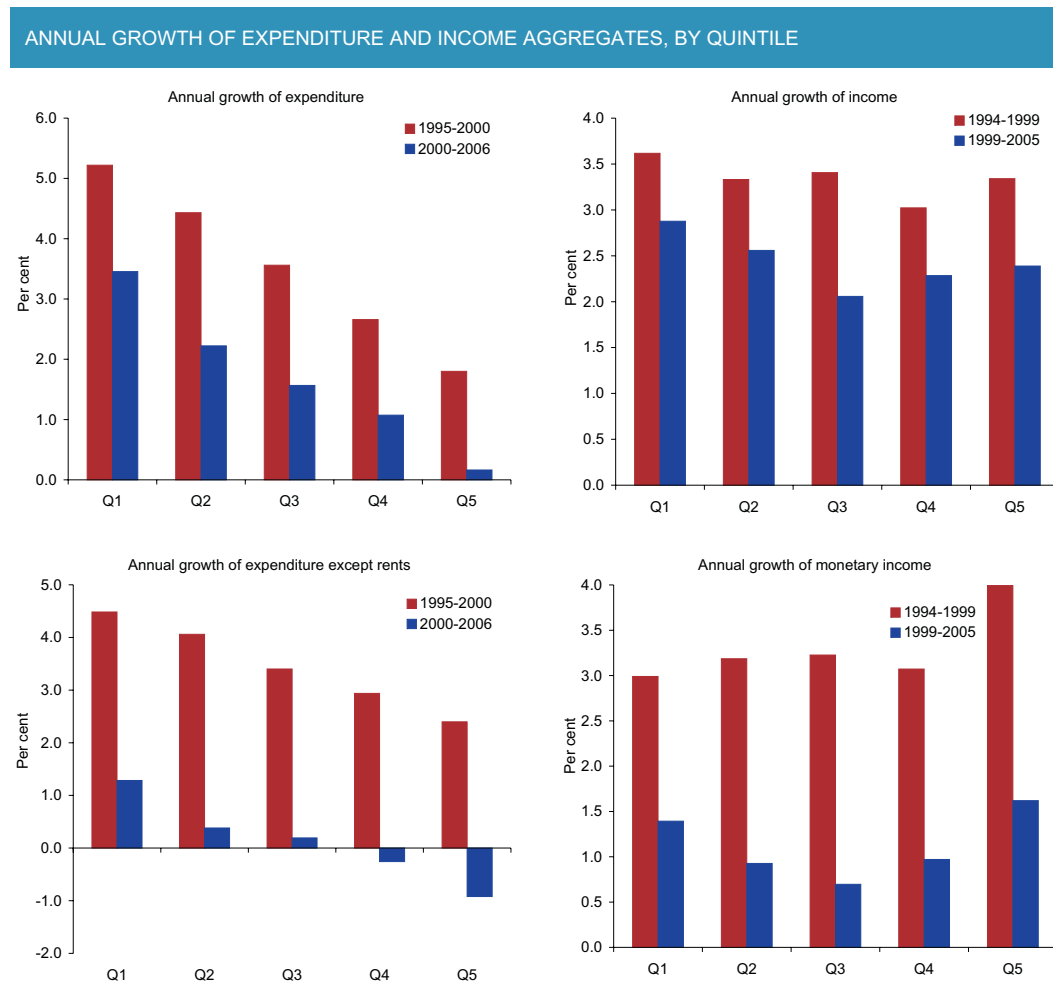
3.3. Recent trends in poverty in Portugal: 1994/95-2005/06

There is a long-standing conviction that poverty levels in Portugal have stood at high and relatively stable levels in recent decades (see Rodrigues, 2007, and Costa *et al.*, 2008). According to the most recent Eurostat statistics, poverty rates in Portugal, measured with monetary income, declined gradually from levels around 21 per cent in 1995 to 18 per cent in 2006 (even though it should be underlined that there is a methodological break in 2004). Further, INE (2008a) showed recently that according to the latest expenditure survey the incidence of poverty declined between 1999 and 2005. In this subsection we assess the recent poverty trends in Portugal with evidence from the three latest expenditure surveys (IOF 1994/95, IOF 2000 and IDEF 2005/06). We will show that recent poverty trends differ whether one uses expenditure or income aggregates. Further, we will also conclude that the sample design in each survey significantly affects the results. The breakdown of the sample in terms of education is particularly critical in this respect.

We start by presenting in Chart 4 the annual average growth of expenditure and income in Portugal in the sub-periods between the three expenditure surveys, for each quintile of the distributions. The main messages arising from the figure are the following. First, the average rate of growth of expenditure and income in the second half of the 90s was significantly higher than in the first half of the 00s, for all quintiles of the distributions. Second, between the 2000 and 2005/06 surveys there was an abnormal increase in the value of rents (which is included in the non-monetary components of expenditure and income). In particular, imputed rents grew over 50 per cent in cumulated terms between 1999 and 2005, according to the expenditure surveys. This is equally clear in Chart 4 when we compare the rate of growth of expenditures including or excluding rents. This fact leads us to favour an intertemporal analysis of poverty using expenditure excluding rents and monetary income.

The third feature worth highlighting from Chart 4 is that the evolution across quintiles is clearly different when we focus on expenditure or income aggregates. From the lower panel of Chart 4, it is clear that

Chart 4



Sources: IOF 1994/95, IOF 2000 and IDEF 2005/06.

when we look at the behaviour of expenditure excluding rents between 1994/95 and 2005/06 the lowest quintile consistently observed the highest rates of growth and the highest quintiles consistently observed the lowest rates of growth. This implied a decline in relative poverty and in the inequality of the distribution of expenditure except rents throughout this period. When we turn to the behaviour of monetary income, the picture is quite different. In fact, the lowest quintile did not perform significantly better than the median quintile and the highest quintile consistently observed the highest rate of growth of monetary income throughout the decade. This behaviour implied a slight increase in the inequality of the distribution of monetary income, while no conclusion can be drawn regarding the evolution of the poverty rate.²²

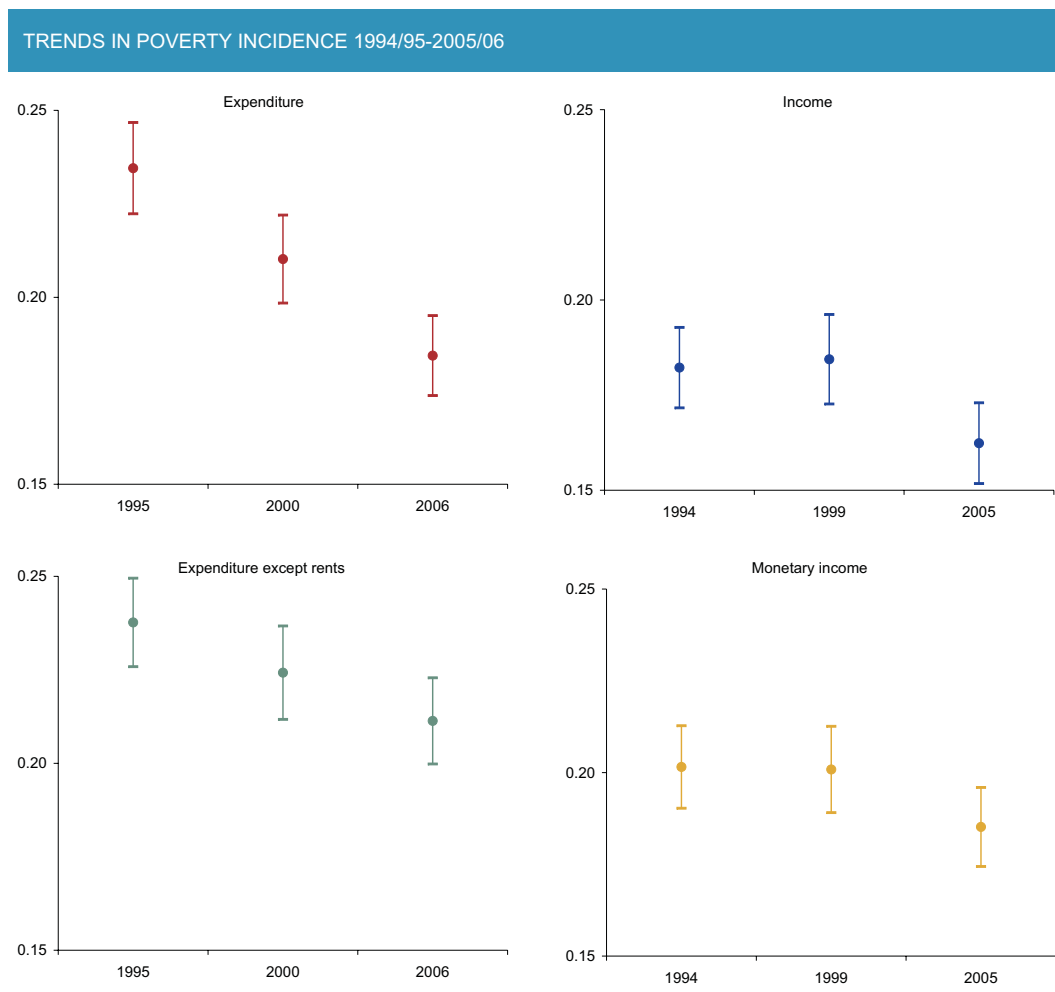
In order to start analysing the main poverty trends between 1994/95 and 2005/06 Chart 5 presents the evolution of poverty rates during this decade, with 95 per cent confidence intervals around the point es-

(22) A more thorough analysis of the evolution of inequality throughout this period is available from the author upon request. For completeness, it is worth reporting here that the Gini coefficients for monetary income in 1994/95, 2000 and 2005/06 were, respectively, 0.354, 0.364 and 0.373. The corresponding Gini coefficients for expenditure excluding rents were, respectively, 0.395, 0.377 and 0.357.²²

timates. A straightforward interpretation of the figure would lead one to conclude that poverty rates computed with expenditure measures declined between 1995 and 2000, and again between 2000 and 2006, albeit not significantly in statistical terms in the case of expenditure except rents in each sub-period²³. In turn, according to the income measures, we would conclude that poverty stayed broadly constant between 1994 and 1999 and declined significantly between 1999 and 2005. However, as we will show below, these conclusions are most likely not robust and must be qualified.

The main problem is that the survey samples do not consistently reflect the population under study in the respective years, in particular in 2000. In fact, while the 1994/95 and 2000 surveys were both designed based on the 1991 Census of the population, the sample for the 2005/2006 survey was based on the 2001 Census. This implies that in 2000 the survey was designed to reflect the structure of the population observed almost a decade earlier. Moreover, it turns out that older individuals are over-represented in the 2000 survey. For example, the share of individuals older than 64 years is 20.3 per cent

Chart 5



Sources: IOF 1994/95, IOF 2000 and IDEF 2005/06.
 Note: Evolution of poverty rates, FGT(0), with 95 per cent confidence intervals around the point estimates.

(23) These results were confirmed with formal statistical tests.²³

in the IOF 2000, which contrasts with 16.4 per cent the 2001 Census of the population (17.3 per cent in the IDEF 2005/06).²⁴ This evolution has a direct counterpart in the breakdown of the sample by education attainment. For example, in the IOF 2000, 65 per cent of the population over 25 years had at most 4 years of completed education. In the IDEF 2005/06, this figure drops to 51 per cent. This evolution is impossible in demographic terms. As we already attested above, education is a crucial covariate of poverty in Portugal. This implies that the incidence of poverty should be overstated in the IOF 2000.

To evaluate the impact of these sampling errors, several simple counterfactual scenarios were estimated, aiming to simulate how poverty rates would have evolved between 2000 and 2005/06 for different assumptions concerning the breakdown of the population in terms of years of education (Table 5).

A first counterfactual scenario presented in Table 5 estimates the evolution of poverty rates in case the breakdown of the population in terms of years of education had remained constant between 2000 and 2005/06 (and the poverty incidence by education group had evolved as described in the surveys). The table suggests that the poverty incidence would actually increase markedly between those years in this counterfactual exercise, instead of decreasing significantly as in Chart 5. However, this is obviously a very extreme exercise given that the stock of education has surely improved during this period. We thus computed a second counterfactual exercise taking into account an estimated evolution of the stock of attained education between 2000 and 2006 (using a conservative evolution of the education pyramid in the Census 2001). The results, also shown in Table 5, suggest that poverty rates may have actually stayed broadly constant during the 00s.

Given that the samples in the IOF 1994/95 and IDEF 2005/06 are both consistent with the Population Census undertaken a few years earlier, we think the results between these two surveys should be broadly comparable. Compiling all the above observations, it can be concluded that poverty rates decreased significantly between 1994/95 and 2005/06, in particular when measured with expenditure aggregates. Further, the evidence suggests that poverty rates decreased more markedly between

Table 5

	Expenditure				Income			
	Total		Except rents		Total		Monetary	
	2000	2006	2000	2006	1999	2005	1999	2005
Poverty incidence - FGT(0)								
Observed	0.210	0.184	0.224	0.211	0.184	0.162	0.201	0.185
Counterfactual based on constant education ^(a)	0.210	0.222	0.224	0.248	0.184	0.194	0.201	0.220
Counterfactual based on estimated education ^(b)	0.210	0.207	0.224	0.232	0.184	0.182	0.201	0.207

Sources: IOF 2000 and IDEF 2005/06.

Notes: (a) Computations based on constant 2000 population shares, by education attainment. (b) Computations based on the estimated poverty incidence in 2000 and the likely evolution of education of the population between 2000 and 2006, estimated with standard mortality rates, the education pyramid in the Census 2001, and assuming a constant population.

(24) These figures are weighted with sample weights.²⁴

1994/95 and 2000.^{25,26} In results available from the author upon request, it can also be concluded - using the “TIP curve” analysis proposed by Jenkins and Lambert (1997) - that the overall decline in poverty between 1994/95 and 2005/06 is robust to the level of the poverty line and to the equivalence scale used, but only in the case where the poverty indicators are computed with expenditure measures.

The above discussion highlights the importance of moving beyond the simple statistical measurement of poverty trends and trying to understand the factors determining these trends. Further, it stresses the importance of keeping track of the quality of the sample, in particular in what regards the breakdown by education.

4. SOURCES OF POVERTY IN PORTUGAL

In the last section we described several social-economic characteristics of households living in poverty in Portugal. The problem with these poverty profiles is that they do not allow distinguishing the relative importance of the various factors associated with poverty. This section aims to tackle this issue. To this end we run several multivariate regressions, which incorporate the poverty covariates that are identifiable with the IDEF 2005/06.

In particular, we will estimate regressions where the dependent variable is binary, taking the value 1 when an individual is poor and 0 otherwise. The estimated model is called a Probit and can be formalized as follows:

$$\Pr(y_i = 1 | x_i) = \phi(x_i\beta)$$

In this equation, the probability that the dependent variable y_i equals 1 (i.e., the probability that an individual i is poor), given a set of explanatory variables x_i , is specified as a non-linear function of the explanatory variables x_i . β represents the vector of coefficients to be estimated and ϕ is the normal cumulative distribution function. The estimation of the model is undertaken by maximum likelihood.

Before presenting the results of the estimations, it is important to underline three potential problems associated with this approach. First, representing poverty as a binary situation ignores information concerning the depth of poverty. In addition, when poverty is represented by a binary characterization, even marginal changes around the poverty line move the position of the households from the set of poor to non-poor (or vice-versa). Second, even though the multivariate regression framework is a step forward in understanding the covariates of poverty, it is important to underline upfront that these regressions do not identify causal relationships. Finally, there is an important problem associated with

(25) Further, as argued in Rodrigues (2007), during this period the depth of poverty was reduced, due in particular to the introduction of the *Rendimento Mínimo Garantido* (a minimum guaranteed income scheme, which was set at levels significantly below the poverty line).²⁵

(26) The reasons underlying the poverty decline in the late 90s – in particular when expenditure aggregates are used – are beyond the scope of this study. Here it is worth highlighting that this evolution may be related *inter alia* to the significant increase in current transfers from the general government to households during this period, as well as to an increased access to debt of households who were traditionally excluded from the credit market for consumption (see Farinha, 2008, and references therein).²⁶

the endogeneity of the variables.²⁷ In what follows, we proceed with this note of caution in mind, hoping that the overall results may be robust to this issue.

Table 6 presents the results of the Probit regressions for the poor population identified with each income and expenditure aggregate. The explanatory variables of the model include geographical data (region of the household and urban/rural breakdown), characteristics of the household (household size, number of members working beside the representative, maximum education level of the representative/spouse, existence of a spouse in the household) and characteristics of the representative (age and working condition). In Table 6 the estimated coefficients measure the marginal effect of each variable on the probability of an individual being poor, controlling for the impact of all the other covariates.²⁸ The standard errors of each coefficient are presented in parenthesis.

We turn now to the analysis of the results for each explanatory variable. It is important to note upfront that the sign and statistical significance of the estimated coefficients are globally robust to the expenditure and income aggregates used (with the exception of the dummy variables referring to the region where the household resides).

In what concerns the household size, Table 6 allows us to conclude that each additional household member significantly increases the probability that the household is poor, even controlling for the impact of the remaining explanatory variables. This effect is directly influenced by the fact that both expenditure and income are computed per equivalent adult.

In addition, the table includes results on whether having a spouse in the household influences the probability of the household being poor. For all expenditure and income aggregates, it can be concluded that having a spouse significantly decreases the probability of the household being poor. This is probably related to the existence of insurance mechanisms within the household but may also be affected by the existence of several economies of scale which are probably not captured accurately in the simplified equivalence scale used in this article. Anyway, this result confirms the aggregate evidence that was already observable in the lower panel of Table 4.

Regarding the variables related to geographical factors, it is clear that households living in urban areas have a lower probability of living in poverty, when compared with households living in rural areas. Furthermore, it is confirmed that households living in the Lisbon region and in the Algarve face a relatively lower probability of being poor.

Focusing now on the age of the representative, the table shows that there is a significant relation between the individuals' life cycle and the probability of living in poverty. In fact, the lowest probabilities of living in poverty occur when the representative belongs to the age bracket between 45 and 64 years (in

(27) The relation between education and poverty may be useful to illustrate this issue. It should come as no surprise that we will find that a low level of education is a significant determinant of poverty. The problem with this conclusion is that the permanence of children in poor households also implies, on average, lower levels of education attainment relative to comparable age-brackets in the rest of the population. This kind of endogeneity is inescapable in our data sets. Analogous examples could actually be presented for other variables such as unemployment or illness (see Smith and Middleton, 2007).²⁷

(28) It is important to note that these marginal effects are evaluated at the mean of the independent variables, except in the cases of the variables which, when assuming a value equal to 1, imply that other associated variables are equal to zero (which is the case of the dummy variables representing the region, age, employment status and education). In these cases, the evaluation of the marginal effects takes into account the null restrictions over the respective associated variables.²⁸

the case of the poverty indicators based on expenditure) and to the age bracket between 55 and 74 years (in the case of the poverty indicators based on income). In turn, the highest risk of poverty is observed in the lowest and highest age brackets

Table 6 subsequently presents the impact of the employment status of the representative. A first conclusion in this respect is that households with an unemployed representative observe significantly higher probabilities of being poor relative to households where the representative is working. This effect amounts to about 15 percentage points when poverty indicators are based on expenditure aggregates and to about 20 percentage points when poverty indicators are based on income aggregates. A similar result – albeit of a lower magnitude – is found when the representative does not work (for reasons other than retirement or unemployment).

In case the representative is retired, the probability of being poor (compared with the case of a working representative) is positive but quantitatively close to zero. This fact suggests that, with the rules governing the fiscal and pension systems in 2005/06, moving into retirement did not imply a significant reduction in liquid income or expenditure. This result is not surprising given that the net replacement rates (relative to the final earnings before retirement) at the time were on average above 90 per cent (see OECD, 2007). Note that this figure reflects not only the gross replacement rates - which were on average close to 75 per cent - but also the difference in social security contributions and personal income taxes paid by workers and pensioners. It should be mentioned that after 2005 several new rules governing the expected liquid income after retirement were approved. These new rules significantly decreased the net replacement rate.

Table 6 also shows that the probability of being poor significantly diminishes with each additional working member in the household (besides the representative). Each additional working member decreases the probability of being poor by around 7 percentage points when poverty indicators are based on expenditure aggregates and in over 11 percentage points when poverty indicators are based on income aggregates.

The last evidence in Table 6 refers to the role of education in determining the probability of living in poverty. The table confirms that the education level of the representative/spouse is a fundamental element in determining that probability. In fact, compared with households whose representative and spouse had no formal education, households where the representative and/or spouse had 4 years of education displayed lower probabilities of being poor, by about 15 percentage points. The probability of being poor was over 35 percentage points lower in households where the representative and/or spouse had tertiary education. Thus, it is clear that the education level is an important explanatory factor of poverty levels in Portugal.

It is instructive to recall that from the poverty profiles in the last section it would not be possible to distinguish whether the high poverty incidence among the elderly was due to life-cycle issues, to their low average level of education or to their retirement status. The multivariate analysis in this section suggests that education is quantitatively the most relevant factor among the three.

Table 6

PROBIT REGRESSIONS - MARGINAL EFFECTS				
	Expenditure		Income	
	Total	Exc. rents	Total	Monetary
Household size	0.051 (0.000)	0.041 (0.000)	0.055 (0.000)	0.049 (0.000)
Family with spouse/companion	-0.038 (0.000)	-0.033 (0.000)	-0.039 (0.000)	-0.030 (0.000)
Urban	-0.088 (0.000)	-0.058 (0.000)	-0.057 (0.000)	-0.081 (0.000)
Region (relative to North)				
Center	0.046 (0.000)	0.047 (0.000)	-0.011 (0.000)	-0.001 (0.000)
Lisbon region	-0.017 (0.000)	-0.004 (0.000)	0.002 (0.000)	-0.024 (0.000)
Alentejo	0.058 (0.000)	0.074 (0.001)	-0.019 (0.000)	-0.016 (0.000)
Algarve	-0.007 (0.001)	0.015 (0.001)	-0.019 (0.000)	0.004 (0.001)
Azores	0.019 (0.001)	0.086 (0.001)	-0.023 (0.001)	-0.024 (0.001)
Madeira	0.053 (0.001)	0.107 (0.001)	-0.040 (0.000)	-0.016 (0.001)
Age of representative (relative to 25-34 years)				
Less than 25 years	0.027 (0.002)	0.118 (0.002)	0.113 (0.002)	0.077 (0.002)
35-44 years	-0.033 (0.000)	-0.072 (0.001)	-0.020 (0.000)	-0.036 (0.000)
45-54 years	-0.052 (0.000)	-0.100 (0.001)	-0.039 (0.000)	-0.040 (0.000)
55-64 years	-0.055 (0.001)	-0.092 (0.001)	-0.058 (0.000)	-0.049 (0.001)
65-74 years	-0.027 (0.001)	-0.046 (0.001)	-0.058 (0.001)	-0.069 (0.001)
Equal or over 75 years	0.005 (0.001)	0.029 (0.001)	-0.040 (0.001)	-0.019 (0.001)
Employment status of the representative (relative to working representative)				
Unemployed	0.152 (0.001)	0.152 (0.001)	0.191 (0.001)	0.206 (0.001)
Retired	0.026 (0.000)	0.001 (0.000)	0.022 (0.000)	0.008 (0.000)
Other non-worker	0.100 (0.001)	0.095 (0.001)	0.123 (0.001)	0.173 (0.001)
No. members working (besides representative)	-0.068 (0.000)	-0.073 (0.000)	-0.117 (0.000)	-0.148 (0.000)
Maximum years of education of the representative / spouse (relative to 0 completed years of education)				
4 years of education	-0.168 (0.001)	-0.153 (0.001)	-0.169 (0.001)	-0.146 (0.001)
6 years of education	-0.249 (0.001)	-0.227 (0.001)	-0.242 (0.001)	-0.228 (0.001)
9 years of education	-0.287 (0.001)	-0.259 (0.001)	-0.288 (0.001)	-0.265 (0.001)
12 years of education	-0.344 (0.001)	-0.319 (0.001)	-0.327 (0.001)	-0.319 (0.001)
Over 15 years of education	-0.385 (0.001)	-0.390 (0.001)	-0.355 (0.001)	-0.355 (0.001)
Memo:				
Poverty rate	0.184	0.211	0.162	0.185
Pseudo R2	0.180	0.171	0.209	0.223
Prob > chi2	0.000	0.000	0.000	0.000

Source: IDEF 2005/06.

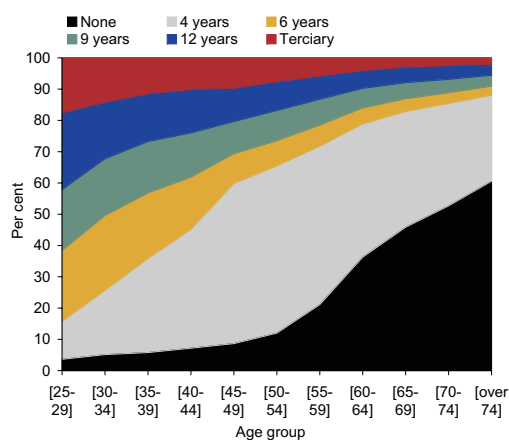
Notes: Standard errors in parenthesis; Observations were weighted with sample weights; dependent variables defined per equivalent adult.

Given the importance of education levels in determining the probability of a household being poor in Portugal, it is important to underline several elements of this relation which can be illustrated with the IDEF 2005/06. First, the stock of human capital in the Portuguese economy is particularly low (Chart 6). According to the information in the Census 2001, 55 per cent of the individuals aged above 24 years had 4 years or less of completed education (47 per cent for the subset of individuals aged between 25 and 64 years).²⁹ The most recent cohorts have a significantly higher level of education attainment, even though they continue to lag behind the respective average figure for the European Union. Again according to the Census 2001, 15 per cent of the individuals aged between 25 and 29 years had 4 years or less of completed education, only 62 per cent completed the mandatory level of 9 years of education and only 18 per cent had a tertiary degree. This low level of the stock of education – coupled with a slowly improving flow – contributes to the high returns on education in Portugal (see Machado and Mata, 2001).

A second element worth highlighting of the relation between education and the risk of poverty is the high positive assortative mating along education lines in Portugal (in line with the evidence for other countries). This means that spouses tend to have analogous levels of education. The share of women with education attainment below the current mandatory level of 9 years marrying with men within that education bracket lies around 80 per cent, according to the information in the IDEF 2005/06 (Chart 7). The same occurs for higher levels of education. This trend has not changed significantly in Portugal in the last decades, as can be observed by comparing the results for the different age brackets in Chart 7. Given that the education attainment of individuals is an important poverty risk factor, the prevalence of assortative mating along education lines hampers a sharing of this risk within the household: This in-

Chart 6

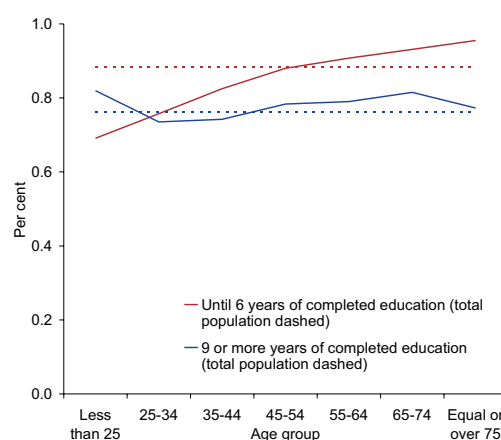
DISTRIBUTION OF EDUCATION ATTAINMENT IN PORTUGAL - CENSUS 2001



Source: Census 2001.

Chart 7

SHARE OF MARRIAGES WITHIN EDUCATION GROUPS (FROM THE PERSPECTIVE OF THE SPOUSE) - 2006



Source: IDEF 2005/06.

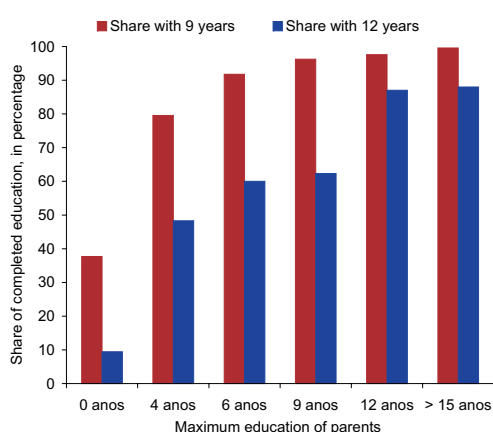
(29) In the weighted sample of the IDEF 2005/06, 51 per cent of the individuals aged above 24 years had 4 years or less of completed education.²⁹

creases the returns of education at the household level and enhances the risk of poverty facing households on average.

Finally, it should be mentioned that there is a significant intergenerational transmission of education in Portugal, which also contributes to the intergenerational transmission of poverty. Chart 8 illustrates this fact using the information in the expenditure survey for 2005/06. The figure shows, for individuals aged 20-24 and living with their parents, the share which completed 9 and 12 years of formal education, compared with the maximum completed education level of their parents. If no intergenerational transmission of education existed, the completion shares would not depend on the level of the parents' education. The fact that both bars in Chart 8 trend upwards is a clear sign of the existence of intergenerational transmission of education and represents a failure of the education system to overcome differences in family backgrounds, even for the modest levels of mandatory education in Portugal. Analogous results are also reported in Carneiro (2008).

Chart 8

INTERGENERATIONAL TRANSMISSION OF EDUCATION, IN THE SUBSAMPLE OF INDIVIDUALS AGED 20-24 YEARS LIVING WITH THEIR PARENTS



Source: IDEF 2005/06.

5. CONCLUSIONS

This article aimed at contributing to the characterization of poverty and to a further understanding of the main determinants of poverty in Portugal. This analysis was mostly based on the latest expenditure survey in Portugal, with data for 2005/06. In this conclusion we will summarize several main insights stemming from the analysis, and highlight some features that will contribute to shape poverty trends in Portugal in the future.

1. A thorough characterization of the poor requires the analysis of several poverty measures. In this article we focused on poverty measures based on expenditure or income aggregates. We concluded that those aggregates yield different insights concerning poverty profiles and poverty trends in Portugal.

This is not surprising given that only about half of the expenditure poor are also income poor. The past accumulation of human capital and wealth contribute to this non-overlap. In this context, poverty indicators based on expenditure measures may better reflect the permanent income of individuals. Policies targeted specifically at the poor should take this fact seriously. Interestingly, the main insights regarding the underlying factors associated with poverty are overall robust to the type of aggregate used in identifying the poor. This robustness should in principle also apply to the policy interventions targeted at the structural determinants of poverty.

2. Between 1994/95 and 2005/06, there was a significant increase in expenditure and income, for all quantiles of the respective distributions. In the case of expenditure, this increase was sharper in the lower quantiles of the distribution. In this period, poverty indicators declined significantly, in particular when measured with expenditure aggregates. However, the incidence and depth of poverty in 2005/06 still remained at high levels in a European context. Taking into account the inescapable uncertainty due to the sampling design of the surveys, it is fair to conclude that the number of poor in Portugal in 2005/06 stood close to 2 million, of which around 300000 were children. Several types of households are particularly vulnerable to poverty: households where one or more adults are unemployed; elderly (couple or single) with low levels of education; households composed of a single non-working individual with children; and, large families with at least one non-working adult.

3. Labour market participation is an important element in mitigating the risk of falling into poverty. In fact, households where the representative was working in 2005/06 recorded a significantly lower-than-average poverty incidence. In addition, it can be estimated that the additional participation of household members in the labour market had a significant impact in reducing the probability of living in poverty. Still, it is worth noting that around 25 to 30 per cent of the poor in 2005/06 were working individuals.

In turn, households where a working-age representative was not working displayed a significantly higher-than-average poverty incidence. In particular, it is worth underlining that around half of the households where both the representative and the spouse were unemployed lived in poverty in 2005/06. In recent years the unemployment rate in Portugal has increased significantly, to historically highs. This was due to structural reasons and, more recently, to the recessive environment facing the Portuguese economy. In this context, the increase in the unemployment rate stands prominently in the set of factors which will contribute to increase poverty in Portugal in the near future.

4. The level of human capital within the household is a fundamental factor determining structural poverty levels in Portugal. In 2005/06 around 40 per cent of individuals over 14 years with no formal education were poor, while only 3 per cent of individuals with tertiary education were also poor. The transmission of human capital to the levels of household income and expenditure works through several channels. First, there are very high returns to education in the labour market. These returns were particularly high for tertiary education. Second, there is a positive assortative mating along education lines, which contributes to magnify the returns to education at the household level. Third, the level of wages throughout or at the end of the working life translates directly into the pension levels in retire-

ment. Finally, there is a significant intergenerational transmission of education, which contributes to the intergenerational transmission of poverty. In the near future, the new flows of increasingly educated individuals entering the labour market - which face a lower risk of poverty relative to the most elderly generations - should contribute to a decline in the poverty rate in Portugal. This is the case even though the returns to education – in particular for tertiary education – are expected to decrease from their current particularly high levels.

This article has not presented a thorough analysis of the role of public policies in explaining poverty in Portugal. To be sure, this is mainly related to the information contained in the databases under analysis, and not to any underestimation of the importance of these policies. The set of relevant policies in determining the level and dynamics of poverty is necessarily broad-based, crossing most areas of government intervention. Prominent among these are, on the one hand, policies that ensure equal opportunities for all and, on the other, policies that create a safety net which ensures an ample participation in society for every citizen. The former include, among others, a high-quality provision of education, health and child care, an equitable access to the judicial system, the availability of housing and affordable transports, and the general provision of fundamental public services to the children and the elderly. The latter include, for example, the existence of a sustainable pension system, the provision of unemployment benefits, the existence of a guaranteed minimum income scheme, or policies creating incentives for the participation in the labour market, such as the earned income tax credit existing in several developed economies. The effectiveness of these policies in fighting poverty depends crucially on the incentives generated in terms of human capital accumulation, of labour market participation, of the primary distribution of income and of the risk sharing in the economy.

Equity and efficiency arguments support the importance of fighting poverty. In Portugal, the poverty incidence and depth are significantly above the lowest levels observed in Europe. In this context, it is crucial to enhance the social awareness of the underlying causes of poverty. This is particularly important given that the policy willingness to mitigate poverty usually tends to reflect that awareness. In this context it would prove particularly helpful to³⁰ (i) set-up medium-term poverty goals in terms of incidence and intensity, and annually assess the success in achieving those goals, as well as their intertemporal sustainability; (ii) evaluate the poverty impact of specific public policy initiatives; and (iii) develop and analyse new panel datasets, incorporating information on consumption, income, wealth, living conditions and subjective perceptions of poverty.

(30) Several of these policies are embedded in the Parliament Resolution 31/2008, which recommends the setting-up of a poverty line and the evaluation of public policies aimed at eliminating poverty.³⁰

REFERENCES

- Albuquerque, J. (coord.), T. Bomba, R. Fernandes, C. Machado e F. Nascimento (2006), "Medidas de pobreza e exclusão social em Portugal", *Documento de Trabalho*, DGEEP/MTSS, Lisboa.
- Atkinson, A. (1998), *Poverty in Europe*, Blackwell, Oxford.
- Berthoud, R. e F. Zantomio (eds.) (2008), *Measuring poverty: Seven key issues*, Institute for Social and Economic Research, Colchester.
- Biewen, M. e S. Jenkins (2005), "Accounting for differences in poverty between the USA, Britain and Germany", *Empirical Economics*, 30(2), pp. 331-358.
- Blundell, R. e I. Preston (1998), "Consumption inequality and income uncertainty", *Quarterly Journal of Economics*, vol. 113, pp. 603-640.
- Brewer, M., A. Goodman e A. Leicester (2006), *Household spending in Britain: What can it teach us about poverty?*, The Policy Press, Bristol.
- Carneiro, P. (2008), "Equality of Opportunity and Educational Achievement in Portugal", *Portuguese Economic Journal*, 7, 17-41.
- Costa, A., I. Baptista, P. Perista e P. Carrilho (2008), *Um olhar sobre a pobreza – vulnerabilidades e exclusão social no Portugal contemporâneo*, Gradiva, Lisboa.
- Costa, A., M. Silva, J. Pereirinha e M. Matos (1985), *A pobreza em Portugal*, Caritas, Lisboa.
- Cunha, V. e M. Pinheiro (2007), "MISS: A model for assessing the sustainability of public social security in Portugal", *Occasional Paper 2*, Banco de Portugal.
- European Commission (2009), *Joint Report on Social Protection and Social Inclusion*, SEC(2009) 141.
- Farinha, L. (2008), "Indebtedness of Portuguese households: recent evidence based on the Household Wealth Survey", *Financial Stability Report 2007*, Banco de Portugal, Lisboa.
- Ferreira, M. L. (2000), *A pobreza em Portugal na década de oitenta*, Conselho Económico e Social, Lisboa.
- Foster, J., J. Greer e E. Thorbecke (1984), "A class of decomposable poverty measures", *Econometrica*, 52, 761-776.
- Gruski, D. e R. Kanbur (ed.) (2006), *Poverty and Inequality, Studies in Social Inequality*, Stanford University Press.
- INE (2008a), *Inquérito às Despesas das Famílias 2005-2006*, Instituto Nacional de Estatística.
- INE (2008b), *Rendimento e condições de vida 2007*, Instituto Nacional de Estatística.
- Jantti, M. e S. Dazinger (2000), "Income poverty in advanced countries", in *Handbook in Income Distribution*, A. Atkinson and F. Bourguignon (eds.), North Holland-Elsevier, Amsterdam, pp. 309-378.
- Jenkins, S. e P. Lambert (1997), "Three I's of poverty curves, with an analysis of UK poverty trends", *Oxford Economic Papers*, vol. 49(3), 317-27.
- Jesuit, D. e T. Smeeding (2002), "Poverty and income distribution", *Luxembourg Income Study Working Paper No. 293*.

- Lang, K. (2007), *Poverty and discrimination*, Princeton University Press.
- Machado, J. e J. Mata (2001), "Earning functions in Portugal 1982-1994: Evidence from quantile regressions", *Empirical Economics*, 26, pp. 115-134.
- Meyer, B. e J. Sullivan (2008a), "Changes in the consumption, income, and well-being of single mother headed families", *American Economic Review* 98(5), Dezembro 2008, 2221-41.
- Meyer, B. e J. Sullivan (2008b), "Three decades of consumption and income poverty", *mimeo*.
- Nunes, F. e Pereirinha, J. (2006), "Política social em Portugal e a Europa, 20 anos depois", in A. Romão (ed.), *A economia portuguesa 20 anos após a adesão*, Coleções Económicas, II Série, Nº 1, Almedina.
- OECD (2008), *Growing Unequal? Income Distribution and Poverty*, OECD.
- Orshansky, M. (1965), "Counting the poor: another look at the poverty profile", *Social Security Bulletin*, Vol. 28(7), 3-32.
- Pereirinha, J. (1996), "Pobreza e exclusão social: algumas reflexões sobre conceitos e aspectos de medição", in J. Amaral (ed.), *Entre a economia e a sociologia*, Celta, pp. 208-232.
- Rodrigues, C. (2007), "Distribuição do Rendimento, Desigualdade e Pobreza – Portugal nos Anos 90", *Coleções Económicas*, II Série, Nº 5, Almedina.
- Sen, A. (1983), "Poor, relatively speaking", *Oxford Economic Papers*, 35, 153-169.
- Sen, A. (2006), «Conceptualizing and Measuring Poverty» in "Poverty and Inequality", D. Grusky and R. Kanbur (eds.), *Studies in Social Inequality*, Stanford University Press, pp. 30-46.
- Silva, M. (1982), "Crescimento económico e pobreza em Portugal (1950-1974)" in *Análise Social*, vol. XVIII, Instituto de Ciências Sociais, 1077-1086.
- Silva, M., A. Costa, A. Cardoso, J. Pereirinha, M. Pimenta, M. Sequeira e M. Maranhão (1989), *Pobreza Urbana em Portugal*, Cáritas, Lisboa.
- Smith, N. e S. Middleton (2007), *A review of poverty dynamics research in the UK*, Joseph Rowntree Foundation.