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## Price Inflation and Income Distribution

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## Price Inflation and Income Distribution

The world economy is in the middle of a depression, and the Irish economy is among the worst hit. The public finances are in disarray. Taxes are up; wages and benefits are down. Prices are down too, as (world) demand has fallen, as companies vigorously compete for dwindling business, and as direct imports from the United Kingdom are increasingly attractive (Bergin et al. 2009). This affects different groups differently. This note quantifies the impact of price inflation on various types of household, segmented by income and other characteristics.

The methodology is straightforward (Somerville 2004). The Central Statistics Office publishes monthly consumer price indices for 13 broad commodity groups from November 1975 to June 2009.<sup>1</sup> We split the commodity group “housing” into its subgroups because it is so heterogeneous. The Household Budget Survey (CSO 2008) provides anonymised micro-data on consumer expenditures for 6,884 households, collected in 2004-5. We use these data to calculate aggregate expenditure shares per commodity group for each socioeconomic category of interest. The category-specific consumer price index is then the weighted average of the commodity-specific price indices, with the category-specific expenditure shares as weights. We start with price indices split by equivalised income deciles.

Figure 1 shows the consumer price index per equivalised income decile. It shows the annual price change between July and June, for June 2004 to June 2009. In 2004 and 2005, inflation was between 1% and 2%. Inflation was practically the same for all income groups. Inflation rose between 2006 and 2008. The poorest (or lowest income, to be precise) households faced the lowest inflation in 2006 and 2007, but the highest in 2008. From July 2008 to June 2009, prices fell. Prices fell fastest for the richest decile, declining by 5.1%. The 2<sup>nd</sup> decile gained least, with prices dropping by 3.0%.

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<http://www.cso.ie/px/pxeirestat/database/eirestat/Consumer%20Prices/Consumer%20Prices.asp>

Figure 2 shows the monthly price indices from July 2007 to June 2009 for the poorest decile, the median, and the richest decile. Figure 2 confirms the results of Figure 1. It also shows that deflation started in September 2008 and has been accelerating since. While deflation was fastest for the highest income decile, inflation was slowest. The richest group faced lower prices in June 2009 than in July 2007, while the poorest group (and the median) faced higher prices.

Changes in taxes, social contributions and benefits in the budgets of 2008 and 2009 mean that the poorest decile gained almost 5% in income relative to the average, while households in the highest income decile lost over 7% relative to the average (Callan et al. 2009). That is, Ireland's income distribution has become more egalitarian *in nominal terms*. However, *in real terms*, the income distribution is levelling less rapidly.

The reason that recent inflation (deflation) has been relatively high (low) for poorer households is because the prices of goods they tend to buy have fallen more slowly than those of goods generally. Figure 3 shows the consumer price index per broad commodity group. Figure 3 reveals that inflation is commodity specific. Patterns differ widely between commodities. Between July 2008 and June 2009, the prices of food, clothing, furnishing, and transport fell, while other prices continued to increase. These are all necessary goods, and the expenditure shares for these items are indeed higher in the lower income groups. The most spectacular price drop was, of course, in housing. As the poorest households spend on average 15% of their income on housing, and the richest households 10%, this would suggest that the poor would benefit most from current deflation. Figure 4, however, shows that the housing market has not responded in a uniform way. Mortgage interest payment have fallen sharply, rents in the private market have fallen much less (but still over 20%), while rents in the public sectors have continued to increase.<sup>2</sup> As social housing is concentrated in the poorest deciles, their rate of price deflation is lowest.

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<sup>2</sup> Local authority rents are indexed on income. The costs of providing subsidised housing has fallen substantially over the last year, but this windfall benefit to the county councils should be seen in the light of the rapidly escalating costs in previous years.

Figure 5 shows two alternative price indices for the lowest income decile. The first is as above, using the *twelve* broad commodity groups and “housing” disaggregated. The second price index uses the *thirteen* broad commodity groups, that is, “housing” aggregated. If the housing costs for the poorest households had traced the average housing costs in the country, the three lowest income deciles would have seen the highest deflation: between 5.2% and 5.4% for the year till June 2009. That is, if local authority rents had tracked average prices (e.g., because benefits had tracked average prices), then the poor would have gained in real income as well as relatively to other income groups.

Table 1 shows that, although different income groups face different price changes in the short term, the long term trends are very similar. Over the 34 year period for which there are data, decile-specific annual inflation rates vary between 5.3% and 5.5%. Note that Table 1 uses the 13 broad commodity groups, as the disaggregate price data start in 2003 only.

Figure 6 returns to recent times and the disaggregate price index. It splits households in a different way. The HBS records whether the chief economic supporter of the household (i.e. its highest earner) is employed, unemployed or retired, as well as the NACE code of employer of the chief economic supporter. We classified the latter as public<sup>3</sup>, semi-state<sup>4</sup> and private<sup>5</sup>.

Figure 6 shows the consumer price index per class. People in the private, public, and semi-state sectors face roughly the same rate of price inflation. The semi-state sector stands out for low inflation in 2007 and low deflation in 2009. There is no obvious explanation for this. Figure 6 also shows that there are no substantial differences in inflation rates between the employed, the unemployed, and the retired.

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<sup>3</sup> 75 Public administration and defence; 80 Education; 85 Health and social work services

<sup>4</sup> 40 Electricity and gas; 41 Water collection and distribution; 60 Land transport services; 62 Air transport services; 64 Post and telecommunication services; 73 Research and development services; 90 Sewage and refuse disposal services; note that some of these sectors are dominated by state-owned companies, while other sectors are served by a mix of private and public operators.

<sup>5</sup> All other sectors

In sum, this note establishes that it is useful to complement the analysis of nominal income distribution with the distribution implications of consumer prices. Although decisions about the appropriate progressivity of the tax and benefit system are political, there are policy implications of our results. A 5% cut in social welfare rates has been suggested, justified by the fall in the *average* price index (McCarthy *et al.* 2009). However, households dependent on social welfare mainly belong to the bottom three income deciles (see Figure 7), and those deciles have seen the least deflation in the past year (3.0 – 3.4%). Therefore if one wishes to justify a reduction in social welfare rates by falling prices, a 3% reduction might be more appropriate. As local authority rents would then fall as well, this would still leave welfare recipients better off.

## **Acknowledgements**

We had useful discussions with Tim Callan and John Fitz Gerald on this topic.

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Table 1. Price indices<sup>a</sup> for June of selected years per income decile.

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1975 <sup>b</sup>	18.2	18.2	18.2	18.0	17.9	17.8	17.8	17.6	17.3	17.7
1980	33.6	33.5	33.7	33.3	33.3	33.1	33.1	32.8	32.3	33.0
1985	60.1	59.5	60.0	60.1	59.9	59.9	59.9	59.5	58.7	59.7
1990	69.0	68.6	68.9	68.9	68.8	68.7	68.7	68.2	67.4	68.3
1995	77.1	76.6	76.9	77.3	77.2	77.3	77.4	76.9	76.2	77.0
2000	83.4	83.4	83.8	84.0	84.2	84.3	84.6	84.3	83.7	84.4
2001	87.0	87.1	87.5	87.3	87.5	87.4	87.7	87.4	86.9	87.4
2002	90.0	90.2	90.5	90.5	90.9	90.8	91.2	90.9	90.4	90.8
2003	92.2	92.4	92.7	92.9	93.3	93.2	93.7	93.3	93.0	93.1
2004	93.6	93.8	94.0	94.4	94.8	94.8	95.3	94.9	94.7	94.8
2005	94.9	95.0	95.2	95.6	95.9	96.0	96.3	96.1	95.9	96.0
2006	98.1	98.1	98.3	98.6	98.8	98.8	99.0	98.9	98.9	99.0
2007	102.5	102.5	102.5	102.3	102.1	102.1	102.0	102.1	102.1	102.1
2008	107.7	107.8	107.6	107.1	106.8	106.6	106.3	106.4	106.5	106.4
2009	101.9	102.1	101.9	102.4	102.6	102.6	102.8	102.6	102.7	102.1
Rate <sup>c</sup>	5.26%	5.28%	5.26%	5.32%	5.34%	5.35%	5.37%	5.40%	5.45%	5.36%

<sup>a</sup> December 2006 = 100

<sup>b</sup> November

<sup>c</sup> Annualised inflation rate for the period November 1975 to June 2009.

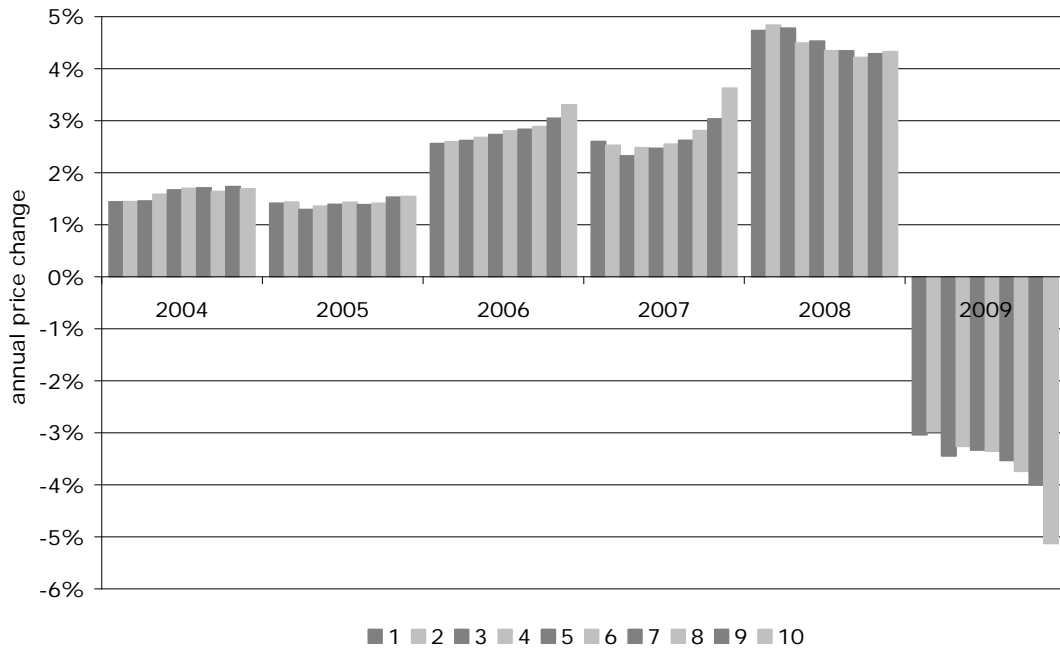


Figure 1. Annual change in the consumer price index from July to June per income decile.

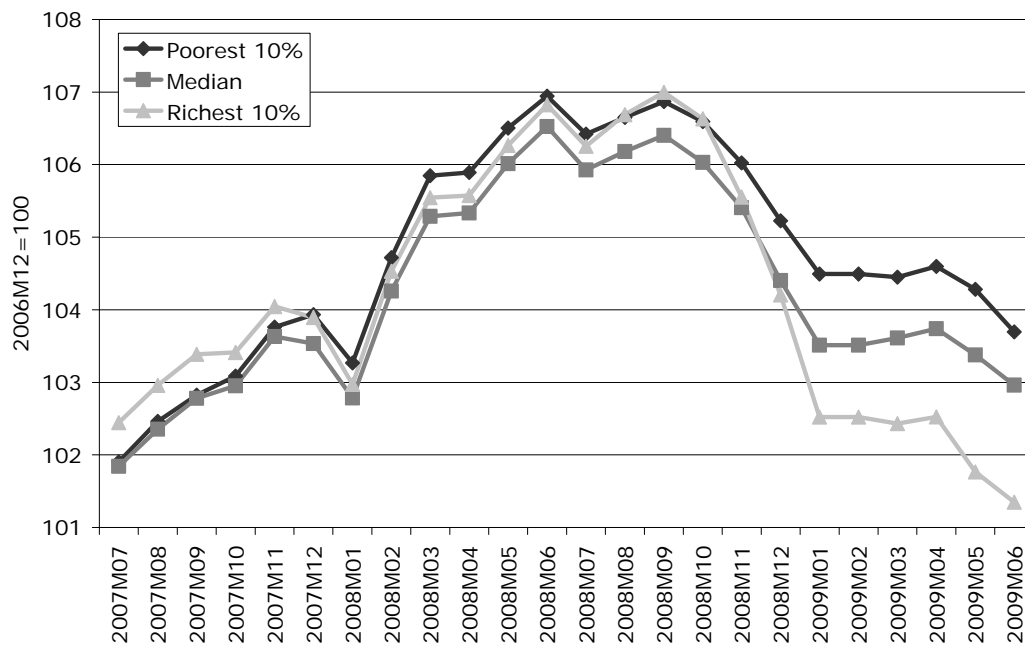


Figure 2. The monthly consumer price index from July 2007 to June 2009 for the poorest, median, and richest households.



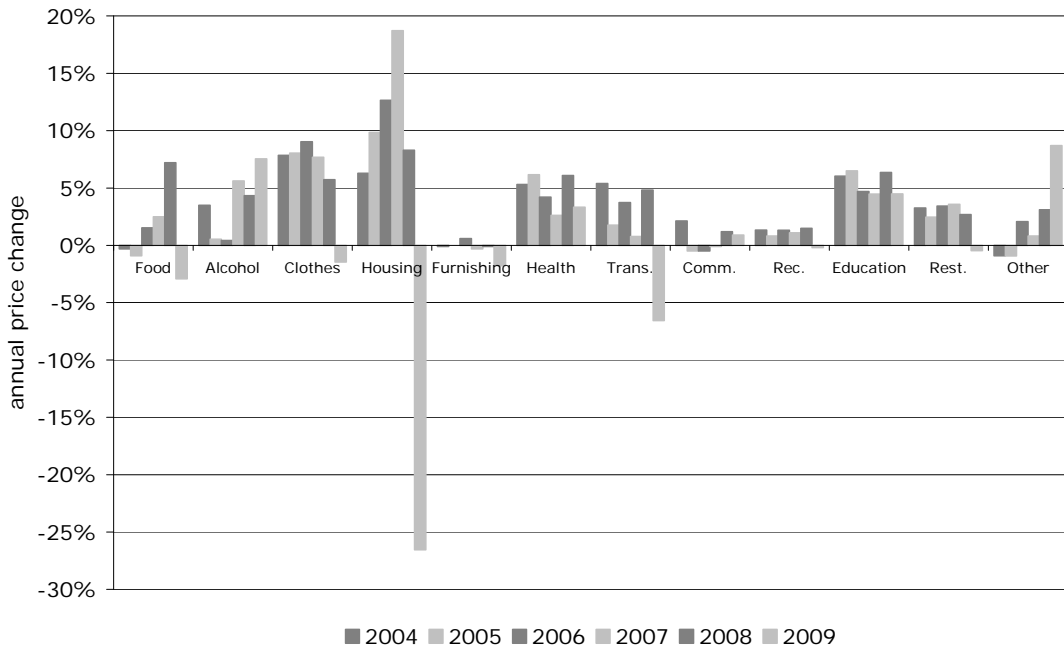


Figure 3. Change in the consumer price index from July to June per commodity group.

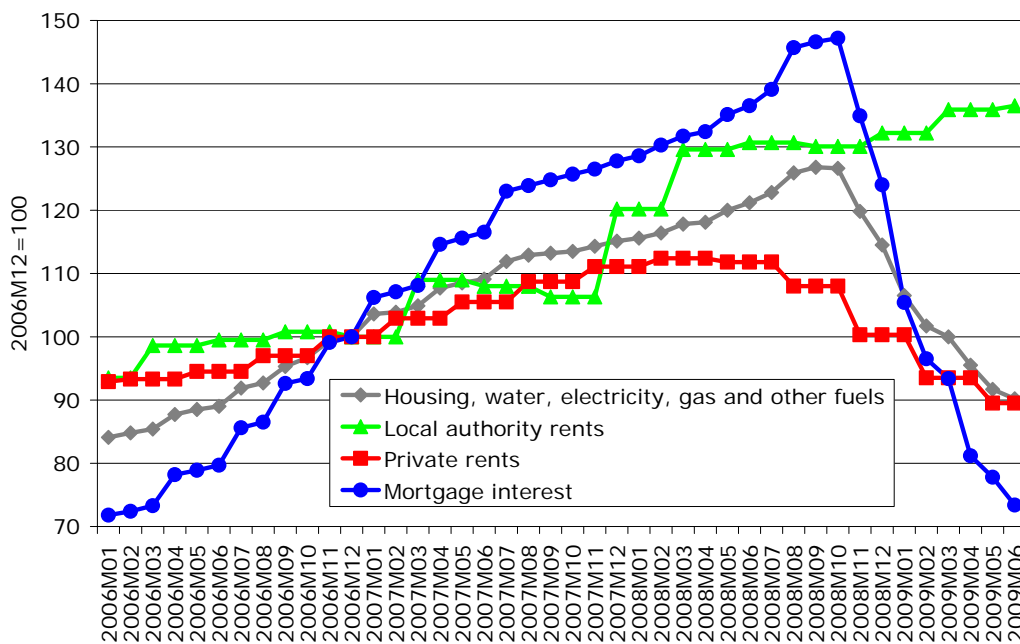


Figure 4. The monthly price index from January 2006 to June 2009 for the broad commodity group “housing” and some of its components.

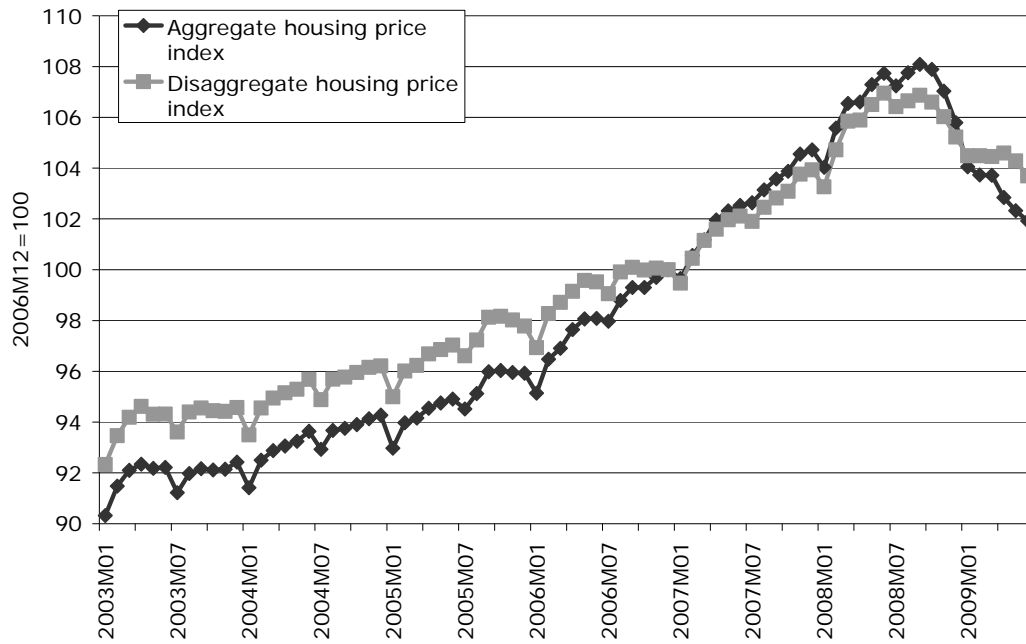


Figure 5. The monthly consumer price index from January 2003 to June 2009 for the poorest households using the broad commodity group “housing” and its separate constituents.

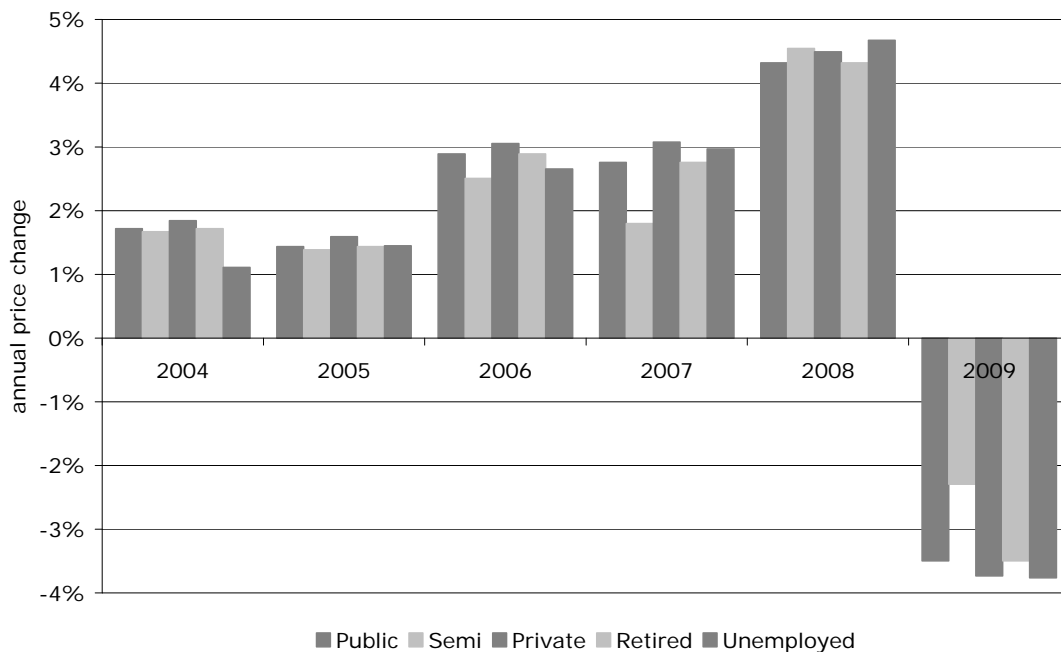


Figure 6. Change in the consumer price index from July to June per employment status.

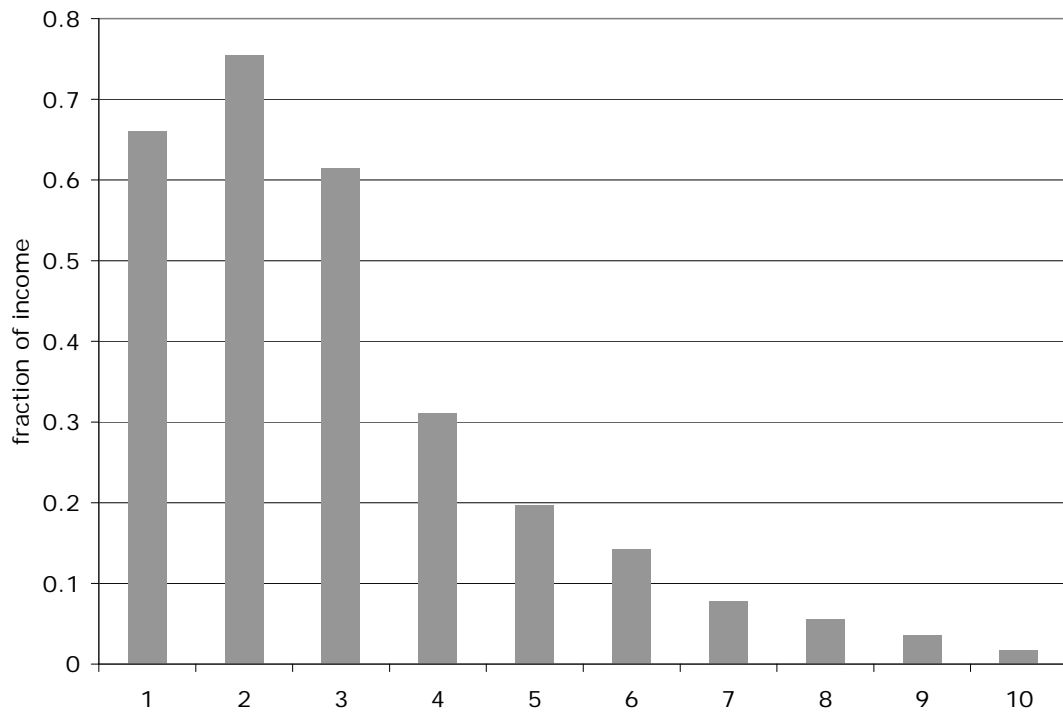


Figure 7. Fraction of gross household income from social welfare payments for each income decile.

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