

Various CPI Aggregation Schemes: Empirical Study of Israeli Data

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Abstract:

Evidence that different household groups in Israel face different price changes as a result of group-specific consumption patterns and differences in price trends, was discussed in the paper presented at the 2006 meeting of the Ottawa Group. Following this paper we calculate household-specific CPIs and analyze various aggregation schemes according to different social, income and expenditure subgroups. We extend the previous paper to a larger dataset, using annual price indices for the years 1990-2005 in order to test whether the different inflation rates faced by different population groups are persistent over time. Further, we analyze whether monthly trends show the same differential pattern as annual inflation. The dataset includes years of both high and very low inflation. This helps to assess the extent of the difference in group-specific inflation. We find that by using democratic rather than plutocratic averages, and thus reducing the underweighting of the low-income households, we obtain higher inflation rates, which is true especially for high-inflation years. In addition, when introducing a new weighting scheme for a compensation CPI, one that emphasizes the poorer population based on weights derived from a social welfare function, we obtain even larger diversions from the "traditional" plutocratic form. We also find that in most cases, and especially in high-inflation years, weaker population groups (pensioners, unemployed, etc.) face higher-than-average inflation rates. Monthly inflation rates are also analyzed, leading to similar conclusions. In view of the results of this paper, we suggest that when annual inflation rates are not close to zero, the general CPI cannot represent all households in the country, and using group-specific price indices might correct this distortion.

I. Introduction

The CPI aims to measure the change in prices of goods and services consumed by households, thus estimating the change in the real purchasing power of a consumer's income. In practice, the CPI is calculated as a weighted average of the price changes, the weights being, for most of the time, the relative expenditure shares of each good and service in the basket. Aggregating the total expenditures of all the households in the economy and calculating the price index based on this aggregated basket raises the question – does the aggregated basket represent each and every household in the country? Whereas each household's expenditure pattern is different, at times when prices increase asymmetrically, it is reasonable to expect that each household face a different inflation rate, which is not necessarily equal to the official inflation rate. Using the overall CPI in the context of compensating the population in the framework of social agreements, like tax or benefit indexation, might be problematic in view of different socioeconomic properties of different households or groups of households, thus leading to a question whether weighting the households in accordance to their expenditure shares is the best way to estimate the inflation compensator used for these purposes.

Empirical studies have shown the evidence of variation in inflation rates across households¹. In a former paper presented at the 2006 meeting of the Ottawa Group, the results of the Israeli data confirmed the previous findings of other countries, in a way that there are groups of households that experience inflation rates other than the mean inflation and that by using an alternative aggregation scheme, different results could be obtained. Annual inflation rates for the years 1999-2005 were tested, which revealed that there was a considerable rate of discrepancy of inflation across households, and that group-specific inflation rates were slightly different than the average inflation for the total population.

In the present paper we use an extended dataset for the years 1990-2005, which includes years of high and low inflation, in order to analyze whether for the Israeli data (a) the differences in inflation rates are persistent over time; (b) there is any correlation between high inflation and the extent to which one group was affected more than others, and whether we can point out that weaker groups experience higher-than-average inflation in the high-inflation years; (c) different weighting schemes would affect the overall inflation rate. We also test the difference across groups of households when moving from annual to monthly inflation rates.

II. Methodology: compilation of the price index

The Israeli CPI is calculated as a weighted average of price indices of different items, whose weights are derived from the Household Expenditure Survey (HES) and represent the share of each item in the total population's expenditure. Prais (1959) showed that the same result could be obtained by simply averaging the household-specific price indices, using each household's expenditure share as weights. In the present study, we use the latter approach: first, we calculate the inflation rate for each household and then aggregate the results in order to get the overall inflation rate.

¹ See, for example, Crawford and Smith (2002), Hobijn and Lagakos (2003) and Lieu, Chang and Chang (2004).

The households for which the individual inflation is calculated are those that participated in the 2002 HES, comprising 6,227 households, which represented almost 1,900,000 households in the population. The HES is the source of expenditure shares of each commodity used in the compilation of the CPI weights. It is an annual random cross-sectional survey of more than 6,000 households (net) a year. In order to calculate the price-corresponding demand from the household data, approximately 780 categories of commodities were used; demand heterogeneity below this level of aggregation was ignored. Several expenditure categories were not included in all years, because they did not have separate price indices in those years. In the present paper we aggregate these expenditure categories, for the convenience of presentation, into 38 groups (which correspond to the class (second) level of the Israeli CPI aggregation structure).

The price data are the monthly CPI indices of goods at the elementary aggregate level (fourth level) of commodity disaggregation. An elementary aggregate is a group of relatively homogenous goods and services, which serve as strata for sampling purposes. Israeli aggregation structure (pyramid) consists of more than 400 elementary aggregates².

The household-specific inflation rate measured between period t and $t-1$ is defined as:

$$\tilde{\pi}_{i,t} = \sum_{j=1}^m w_{j,2002} \left(\frac{p_{j,t}}{p_{j,t-1}} - 1 \right) = \sum_{j=1}^m w_{j,2002} \pi_{j,t}$$

Where $p_{j,t}$ is the price index for item stratum j at time t . The expenditure share of good category j in the base period 2002 is denoted by $w_{j,2002}$.

The second step is the aggregation of these household-specific inflation rates into the overall CPI. In this paper we present the general inflation rate in the population as a weighted average of household-specific inflation rates,

$$\pi_i^{CPI} = \frac{\sum_{i=1}^N w_i \tilde{\pi}_{i,t}}{\sum_{i=1}^N w_i}$$

Where w_i denotes the weight of the household.

The calculation of the average inflation rates can be performed by various approaches, we began by using two of the most popular: democratic and plutocratic. The plutocratic approach weights households according to their share of total expenditure, implying that richer households receive more weight. In the official CPI, the aggregation method used corresponds to a plutocratic index.

Democratic indices weight households equally and give straightforward means. This type of aggregation is equally valid, in terms of economic theory, although it depends on the perception of the index. As Fisher (2002) points out, the plutocratic index is preferred whenever the income distribution is optimal, and the democratic index is preferred only if we already have an egalitarian income distribution and believe that distribution to be optimal. In practice, the plutocratic is considered to be more practicable when one considers the data that are at the disposal of National Statistical Offices. Usually, the total expenditure shares for each good by all households are easier to obtain than a household-specific

² The exact number of elementary aggregates changes every two years, as additional aggregates are joined and others are omitted from the CPI pyramid.

expenditure pattern, thus representing the basket of one aggregated "super-household", which could be an advantage of the plutocratic formula (Diewert, 1983).

The choice of the weighting scheme used to derive the aggregate price index depends upon the assumptions adopted about the social welfare function for the society whose index it is to represent (Pollak, 1981). This function represents the preferences of the society concerning the weight that should be attached to each household. Another way to aggregate the household-specific inflation is to attach the higher weight to those with lower income, if one would want to emphasize poorer households, located at the lower end of the distribution³.

The difference between the plutocratic and the democratic mean is often referred to as plutocratic bias, or a plutocratic gap. The size of this gap depends on the correlation relationship between households' inflation rates and their total expenditure: if richer households experience higher inflation rates, the plutocratic mean will be higher than the democratic mean, and vice versa.

In order to illustrate how the different approaches of social preferences can affect the resulting index, we analyze briefly two additional weighting schemes, based on the household's rank in the income and expenditure distribution⁴. By this approach, households are sorted by their net income per standard person, or net expenditure per standard person⁵. The weight of each household is defined as $1 - F_h$, or one less the household's rank in the distribution. Thus the poorest households receive the highest weight. The weights are normalized to match the number of households in the sample (6,227).

Several notes should be made. First, the resulting plutocratic means presented in this paper differ slightly from the official CPI. The time range used in the present paper is 1990-2005. In general, the ICBS updates the base period every two years since 1999. Since using HES data allows obtaining expenditure weights only for one year for each household, we do not have the possibility to update household weights. In this study, we rely on the expenditure weights derived from the HES that was held in the 2002, and assume that they represent the expenditure patterns of the households during the whole period from 1990 to 2005. This is a strong assumption, since apart from the regular changes in tastes; each household adjusts its consumption according to relative price changes, which were extreme and asymmetrical during the 16-year period. 2002 was chosen as a base year for our simulations in order to allow comparability to our earlier research on this issue.

Second, there is no possibility (at present) to measure the exact price changes for each household, since we are not able to observe the specific prices that households pay for the item strata. Therefore, we

³ In the system of social agreements - compensations, benefits and taxation, given only one index, this index should reflect the system of social preferences. Social preferences are reflected in a weighting scheme used in the evaluation of the index used for social agreements. This can be a simple average, a median, or weighting that considers the income marginal utility of the individual. Wodon and Yitzhaki (2002) discuss a weighting scheme in which the gains of all members of the society are taken into account, although such gains are weighted differently using an extended Gini parameter, which allows for flexibility of the weighing structure. The Gini coefficient is used broadly to measure inequality, and its properties may inform the policy analysis. The extended Gini parameter, being a function of the individuals' incomes and their ranks in the income distribution, uses a parameter ν to emphasize different parts of the distribution (Lerman and Yitzhaki 1994, Wodon and Yitzhaki 2002). The concept of social distributional weighting in cost benefit analysis and tax reform is discussed in Yitzhaki (2003).

⁴ For more on this framework see Finkel (2007) *Consumer Price Indices: the problem of aggregation for social agreements* (ICBS working paper 32 - forthcoming).

⁵ Since larger households have scale advantage, meaning that lower per-person income is needed to maintain the same lifestyle as in a smaller household, the correction is made where an equivalence scale is used. In a household with one person, the household's income is divided by 1.25 in order to get the income per standard person, in a household with 2 persons, the income is divided by 2, in a household with 3 persons - by 2.65, 4 persons - by 3.2, 5 persons by 3.75 etc...

must assume that all households face the same price changes. Given that differences in inflation rates across households are generated by differences in their commodity demand, the quality of approximation to their true indices will depend upon the heterogeneity in their substitution responses (Crawford and Smith, 2002).

We analyze the dispersion of inflation rates between households firstly, by analyzing annual inflation rates (for the 15 years 1991-2005), and secondly, by analyzing monthly inflation rates (February 1990-December 2005). In the average annual inflation approach first the average annual price index was calculated. Then the two successive indices were compared in order to calculate the average inflation rate. This approach is different to the one used in the 2006 paper, where annual inflation was defined as December-to-December price change. This approach yields similar results, and we will not restate it here.

III. Annual Inflation

III.1 The Distribution of Inflation Rates

Over the years analyzed, the mean inflation rate has decreased from around 19% to less than a 1% annual average. The differences between the households tend to be smaller when the mean inflation rate is high: the distributions are "peaky" in later years, where the inflation rates were low, and tend to be "wider" in the earlier years, when the inflation rates were high. The distribution of inflation rates between households is described in Appendix A.

In Table 1 the development of inflation rates over the 15 years is presented. The annual inflation rates in the mid 1990's were relatively high – more than 10%, but the distributions are "wide", which can be seen from higher standard deviations, interquartile ranges, and the kurtosis. On average, the difference between the first quartile of the inflation and the third quartile is nearly 2.8 percentage points.

Years 1998-1999 and 2002 are indicated by relatively moderate inflation, between 5% and 6%. This is not straightforward, however, that as the mean inflation rate increases, the distribution "widens", although on average, the interquartile range is lower than in the high-inflation group, and reaching 1.9 percentage points.

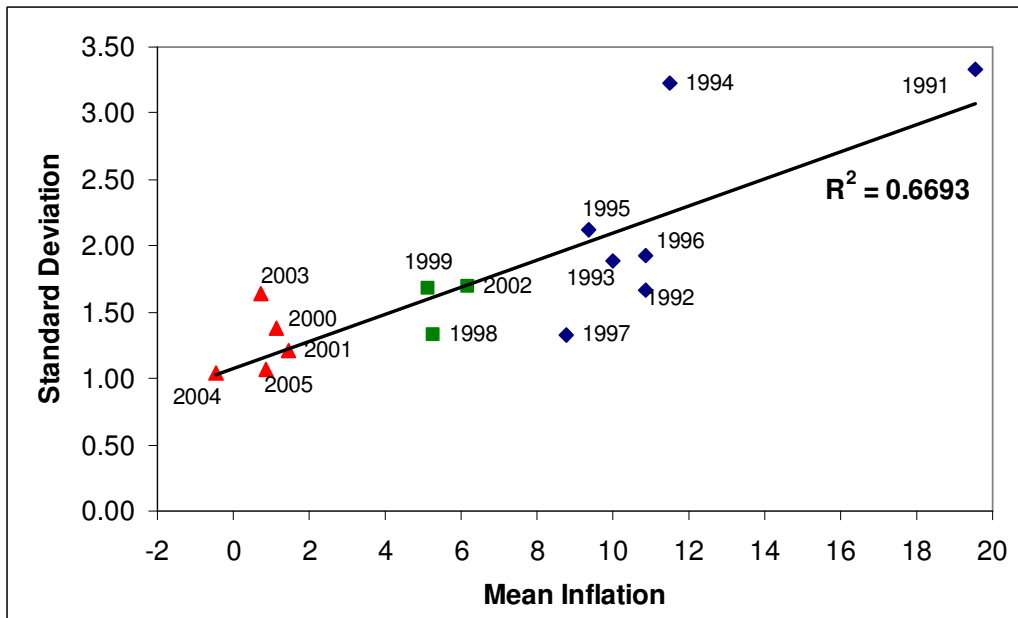
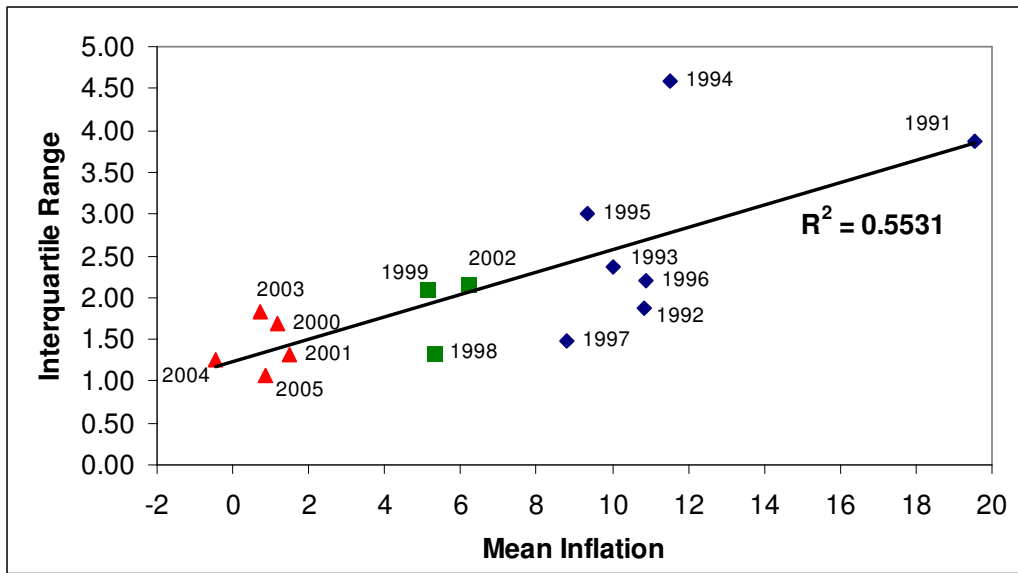
In later years, when the mean inflation was low, the negative relationship between the mean inflation and the dispersion of households is again noticeable, although weaker than in the high-inflation years. The average interquartile range is 1.4 percentage points.

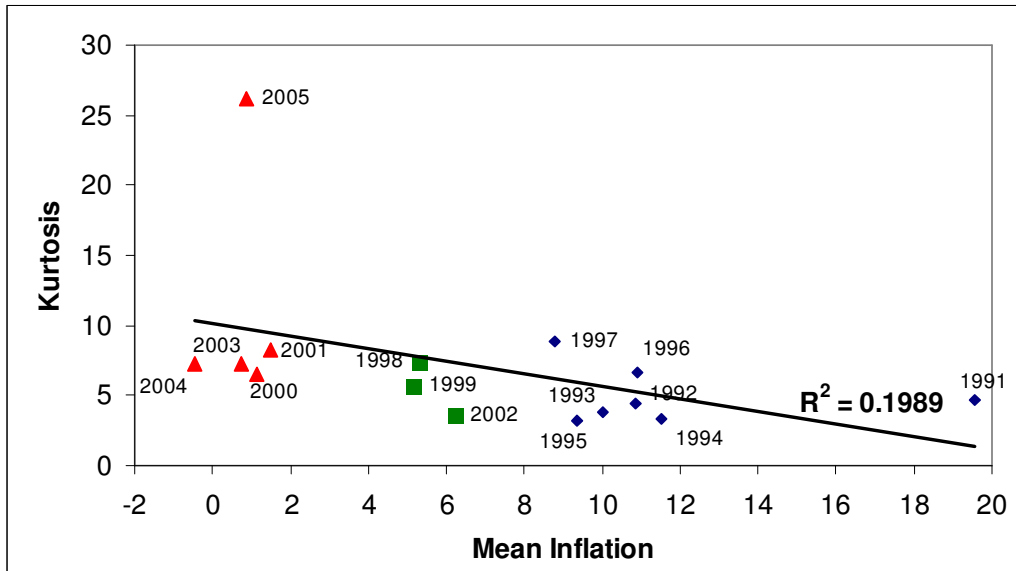
Table 1: Summary Statistics

Year	Mean Inflation	s.d.	c.v.	Min	Max	Range	Interquartile Range	Skewness	Kurtosis
1991	19.54	3.33	0.03	1.35	33.91	32.56	3.86	0.14	4.61
1992	10.86	1.67	0.02	2.55	19.28	16.73	1.88	0.30	4.48
1993	10.00	1.89	0.04	2.82	19.37	16.56	2.37	0.23	3.75
1994	11.51	3.23	0.08	0.00	26.01	26.02	4.58	0.43	3.27
1995	9.34	2.12	0.05	-1.12	18.90	20.03	3.00	-0.29	3.15
1996	10.88	1.92	0.03	-7.42	17.75	25.17	2.21	-0.68	6.60
1997	8.78	1.33	0.02	-1.60	14.98	16.58	1.49	-1.37	8.85
1998	5.29	1.33	0.06	-6.15	11.17	17.32	1.33	-0.21	7.34
1999	5.14	1.68	0.11	-4.15	17.15	21.30	2.10	0.48	5.71
2000	1.16	1.38	1.43	-8.20	14.09	22.29	1.70	-0.21	6.50
2001	1.47	1.21	0.67	-9.17	8.49	17.66	1.32	-1.15	8.20
2002	6.20	1.70	0.07	-2.66	13.45	16.11	2.15	0.15	3.51
2003	0.72	1.63	5.15	-5.20	18.43	23.63	1.83	0.67	7.28
2004	-0.46	1.04	5.00	-4.91	11.25	16.16	1.25	0.54	7.21
2005	0.86	1.07	1.53	-7.89	17.76	25.64	1.08	1.98	26.14

Over the whole period, the relationship between the mean of the distribution and its dispersion is strong, as can be seen from the three diagrams of Figure 1. The solid line indicates the linear fitted values between the mean and each one of the three dispersion variables (interquartile range, standard deviation and kurtosis). Diamonds indicate the early, higher-inflation years; the three moderate-inflation years are represented by squares and the later, low-inflation years - by triangles.

Figure 1. Relationship between the Location of Inflation and its Dispersion

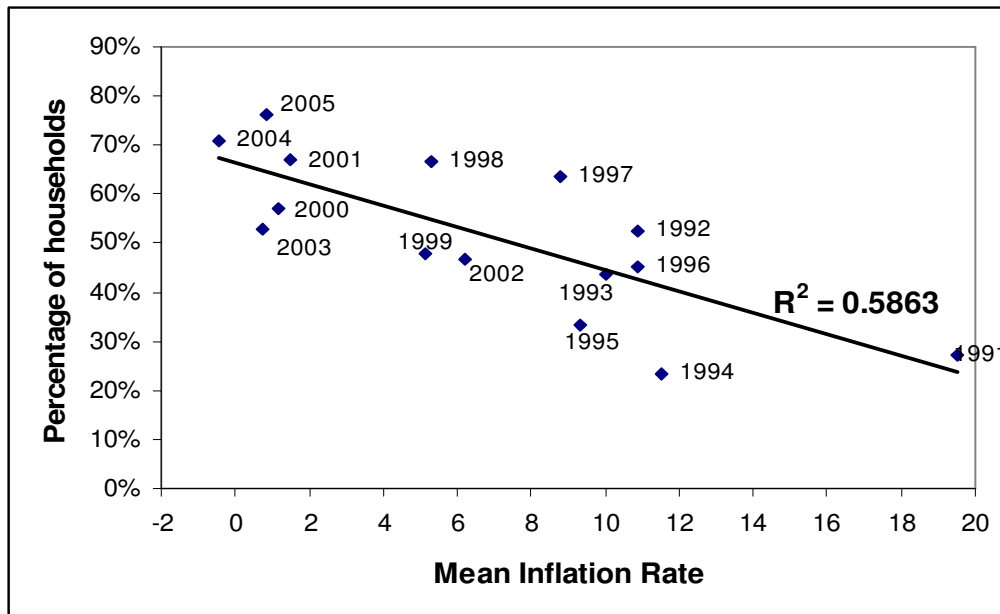




The last diagram of Figure 1 shows that the year 2005 is somehow exceptional: it has the highest kurtosis rate. The diagram in Appendix A supports this – the 2005 household inflation distribution possesses the highest "peak" around the mean.

We now turn to the question of the extent to which the average rate is typical for the population of households. We take as a measure the proportion of households whose inflation rates are within 1 percentage point of the mean (Figure 2); as expected, the higher the inflation rate, the lower is the percentage of households with mean inflation rates.

Figure 2. Relationship between the Mean Rate of Inflation and the Percentage of Households within 1 Percentage Point of the Mean



III.2 Group Inflation Rates: Alternative weighting schemes

Annual inflation rates computed using two alternative approaches, the democratic (each household is weighed as 1) and plutocratic one (each household is weighed by its share in total expenditure) are

presented in Table 2a, along with their 95% confidence intervals and percentage difference between the two weighting methods, calculated as the plutocratic gap divided by the democratic inflation rate. At the high rates of inflation, this difference is always negative, meaning the democratic inflation rate is higher than the plutocratic one. The confidence interval confirms that the two indices are significantly different.

Moderate or low rates of inflation do not show any pattern: once the democratic index is higher (2001-2, 2004-5), other periods the plutocratic index takes over (1998-2000, 2003). On the other hand, whenever inflation is higher than 6%, the plutocratic gap is always negative, although in percentage terms, is not high.

However, no rule could be derived from these results, as the international experience is very broad. Kokoski (2003) shows that for moderate inflation rates (2%-5%) the plutocratic gap in the USA could be negative or positive. In the UK the pattern is mixed for the high-inflation years as well as for the moderate and low-inflation years (Crawford and Smith, 2002). The results for Argentina, reported in Ley (2005) and provided by Lodola et al. (2000) show the similar pattern as in Israel: the plutocratic gap is negative for the years where inflation rates ranges from 11.2% to 20%, and ranges from -0.48 to +0.65 for the years with inflation rates lower than 3.3%. The detailed decomposition of the plutocratic gap is presented by Ley (2005), explaining the factors affecting it.

Table 2a. Plutocratic and Democratic Annual Inflation Rates, 1991-2005

Year	DEMOCRATIC				PLUTOCRATIC				Percentage Difference
	Mean Inflation	Std. Dev.	95% confidence interval		Mean Inflation	Std. Dev.	95% confidence interval		
			Lower	Upper			Lower	Upper	
1991	19.5%	3.33	19.46	19.62	18.7%	2.92	18.65	18.80	-4.18
1992	10.9%	1.67	10.81	10.90	10.6%	1.56	10.57	10.64	-2.32
1993	10.0%	1.89	9.96	10.05	9.8%	1.64	9.72	9.81	-2.40
1994	11.5%	3.23	11.43	11.59	11.2%	2.75	11.13	11.27	-2.67
1995	9.3%	2.12	9.29	9.40	9.2%	1.96	9.14	9.24	-1.67
1996	10.9%	1.92	10.83	10.93	10.6%	1.77	10.59	10.68	-2.30
1997	8.8%	1.33	8.74	8.81	8.6%	1.33	8.57	8.64	-1.93
1998	5.3%	1.33	5.25	5.32	5.3%	1.38	5.28	5.35	0.57
1999	5.1%	1.68	5.10	5.19	5.2%	1.64	5.18	5.26	1.51
2000	1.2%	1.38	1.12	1.19	1.2%	1.38	1.19	1.26	6.10
2001	1.5%	1.21	1.44	1.50	1.3%	1.19	1.22	1.28	-15.07
2002	6.2%	1.70	6.16	6.24	6.0%	1.58	5.91	5.99	-4.00
2003	0.7%	1.63	0.68	0.76	0.8%	1.63	0.80	0.88	17.08
2004	-0.5%	1.04	-0.49	-0.44	-0.3%	1.11	-0.36	-0.30	-29.54
2005	0.9%	1.07	0.84	0.89	0.9%	1.13	0.82	0.88	-1.63

As mentioned above, two additional approaches of weighting individual household price indices were considered: weighting by the household's rank in (1) the expenditure or (2) income distribution. Poorer households receive more weight using this procedure. Inflation rates obtained by this weighting scheme are even higher than the democratic inflation (especially when using the expenditure distribution), but the plutocratic gap, although higher, maintains the same pattern: is negative for the high-inflation years, and mixed for the low or medium inflation.

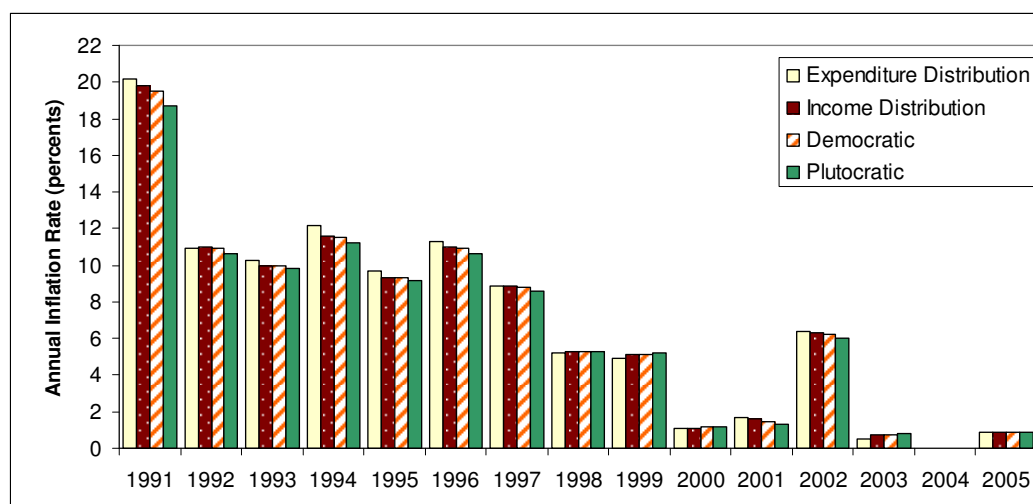
The results (Table 2b) show that through the period of 15 years, households with low expenditure experienced the higher-than-average inflation rates, and their share in inflation in the official,

plutocratic CPI, is obviously underestimated. This is true especially for the high inflation years: the cumulative plutocratic gap is -2.19% for the years 1991-1997, out of -2.2% for the whole period.

Table 2b. Annual Inflation Rates Using Expenditure and Income distribution weighting scheme, 1991-2005

Year	Expenditure Distribution				Income Distribution			
	Mean Inflation	Std. Dev.	95% confidence interval Lower	95% confidence interval Upper	Mean Inflation	Std. Dev.	95% confidence interval Lower	95% confidence interval Upper
1991	20.20	3.40	20.12	20.28	19.80	3.50	19.71	19.89
1992	10.90	1.70	10.86	10.94	11.00	1.70	10.96	11.04
1993	10.30	2.10	10.25	10.35	10.00	2.00	9.95	10.05
1994	12.20	3.50	12.11	12.29	11.60	3.50	11.51	11.69
1995	9.70	2.20	9.65	9.75	9.30	2.20	9.25	9.35
1996	11.30	2.00	11.25	11.35	11.00	2.00	10.95	11.05
1997	8.90	1.30	8.87	8.93	8.90	1.30	8.87	8.93
1998	5.20	1.20	5.17	5.23	5.30	1.30	5.27	5.33
1999	4.90	1.70	4.86	4.94	5.10	1.70	5.06	5.14
2000	1.10	1.30	1.07	1.13	1.10	1.40	1.07	1.13
2001	1.70	1.10	1.67	1.73	1.60	1.20	1.57	1.63
2002	6.40	1.70	6.36	6.44	6.30	1.80	6.26	6.34
2003	0.50	1.70	0.46	0.54	0.70	1.70	0.66	0.74
2004	-0.60	1.00	-0.62	-0.58	-0.60	1.00	-0.62	-0.58
2005	0.90	1.00	0.88	0.92	0.90	1.10	0.87	0.93

Figure 3. Annual Inflation Rates (percents) 1991-2005, using Expenditure and Income distribution, Democratic, and Plutocratic weighting schemes



The annual price indices are presented in Appendix B. During the whole period, the democratic index is higher than its plutocratic form. However, one has to take into account that if at any year one index is higher than the other, it is likely that the same will happen in the next year just because the initiate index level is already high, and it will take a major difference in the opposite direction to reverse the trend. Thus we focus our analysis on inflation rates and not index levels.

Nonetheless, the democratic index has increased to 263.0 points from 1990 to 2005, while the plutocratic index is 257.8, meaning that over the period of 15 years the cumulative change is nearly 5

index points higher when using democratic weights. The change is larger when using our distributional weighting scheme.

III.3 Group Inflation Rates: Building Groups by Socioeconomic Definitions

We have seen that in the high-inflation years the plutocratic gap is negative, meaning that higher-spending households experienced lower inflation rates. Using household-specific inflation rates we compile them into groups, according to various economic and social characteristics in order to pinpoint particular classes of households that especially and consistently face different inflation rates than the overall CPI.

We analyze several household characteristic variables: (1) Standard person income level of the household and standard person monetary income of the household⁶; (2) the age of the household head; (3) tenure type; (4) employment status of the household head, or whether the household head is a pensioner; (5) the educational level of the household head; (6) areas of residence; (7) households with children below 18 years old and other households; (8) standard person expenditure level.

Table 3 reports annual inflation rates for the period of 1991-2005, grouped by different household characteristics. The main purpose of these exercises is to find out how the inflation experience of a certain group may be different from the general population.

The results show that households with certain demographic characteristics usually face higher annual inflation rates than the other groups. If we define "usually" as nine cases (out of 15) or more, than these groups are (1) pensioners, (2) renters, (3) households with an unemployed head, (4) households without children, (5) households with household head of the age 50 or older, (6) couples without children (consistent with the result in (4)), (7) households with household head of 10 years of schooling or less, (8) urban households and (9) households with lowest expenditure per standard person.

On the other hand, those who faced nine or more years of *lower than average* inflation rates include: (1) Highest income and monetary income deciles, (2) non-pensioners, (3) Mortgagors, (4) an employed household head, (4) households with children, (5) households with household head of age below 50, (6) couples with children and lone parents, (7) households with household head of more than 10 years of schooling, (8) living in rural areas and (9) highest expenditure decile.

⁶ The definition of household income includes estimated values of imputed income for owner occupied housing and vehicles. The monetary income does not include these.

Table 3. Average Annual Inflation rate, and Group-Specific Inflation rates, 1991-2005⁽¹⁾

Group \ Year	1991	1992	1993	1994	1995	1996	1997	1998	Average 1991-2005⁽²⁾
All	19.54	10.86	10.00	11.51	9.34	10.88	8.78	5.29	6.75
Income Decile 1 (lowest)	19.50	11.47	9.28	9.75	8.19	10.26	8.86	5.50	6.62
Income Decile 10 (highest)	18.27	10.53	9.78	11.58	9.46	10.68	8.52	5.35	6.65
Monetary Income Decile 1 (lowest)	19.87	11.12	9.97	11.50	9.28	11.09	8.91	5.22	6.82
Monetary Income Decile 10 (highest)	18.19	10.55	9.63	11.11	9.14	10.40	8.45	5.37	6.56
Non-pensioners	19.27	10.78	9.84	11.11	9.19	10.71	8.64	5.25	6.66
Pensioners	20.74	11.19	10.70	13.24	10.00	11.63	9.35	5.46	7.16
Renters ⁽³⁾	19.98	11.73	9.34	8.34	7.32	9.67	8.84	6.00	6.56
Mortgagors	19.16	10.32	10.17	12.46	10.08	11.23	8.63	4.94	6.75
No housing costs	19.51	10.60	10.39	13.24	10.35	11.56	8.84	5.01	6.91
Employed	19.17	10.72	9.84	11.18	9.25	10.71	8.61	5.23	6.65
Unoccupied	20.46	11.20	10.43	12.33	9.58	11.32	9.18	5.43	7.01
No children	20.19	10.96	10.24	11.81	9.40	11.04	9.02	5.46	6.90
Children	18.84	10.74	9.75	11.17	9.28	10.70	8.51	5.10	6.60
Age < 25	19.44	10.67	9.77	10.36	8.74	10.36	8.57	5.24	6.53
Age 26-34	19.26	11.00	9.85	10.56	8.90	10.52	8.61	5.34	6.63
Age 35-49	18.96	10.68	9.78	11.14	9.25	10.75	8.57	5.14	6.61
Age 50-64	19.70	10.73	10.01	12.00	9.64	10.99	8.84	5.28	6.82
Age > 65	20.78	11.23	10.71	13.29	9.98	11.67	9.37	5.51	7.18
Lone parents	19.75	10.96	10.05	10.08	8.47	10.39	8.63	5.32	6.55
Couples with children	18.78	10.72	9.73	11.25	9.34	10.72	8.51	5.08	6.60
Couples without children ⁽⁴⁾	19.74	10.88	9.96	11.73	9.36	10.92	8.94	5.42	6.83
Single adults (below the age of 65)	20.50	11.15	10.36	10.43	8.80	10.62	8.89	5.57	6.79
10 years or less of schooling	20.05	11.10	10.21	12.39	9.74	11.37	9.10	5.29	6.96
12 years of schooling	19.52	10.70	10.02	11.56	9.45	10.91	8.68	5.13	6.71
More than 12 years of schooling	19.28	10.83	9.88	11.01	9.06	10.60	8.66	5.38	6.67
Urban areas	19.58	10.86	10.02	11.52	9.35	10.89	8.79	5.29	6.76
Rural areas	18.82	10.76	9.61	11.26	9.23	10.68	8.55	5.26	6.66
Expenditure Decile 1 (lowest)	21.66	10.87	11.15	14.28	10.80	12.29	9.27	4.89	7.32
Expenditure Decile 10 (highest)	17.72	10.40	9.40	9.77	8.14	9.82	8.55	5.85	6.36

Table 3 (cont.). Average Annual Inflation rate, and Group-Specific Inflation rates, 1991-2005 ⁽¹⁾

	1999	2000	2001	2002	2003	2004	2005	Average 1991-2005 ⁽²⁾
All	5.14	1.16	1.47	6.20	0.72	-0.46	0.86	6.75
Income Decile 1 (lowest)	5.81	1.29	1.47	5.94	1.31	-0.49	1.11	6.62
Income Decile 10 (highest)	5.09	1.36	1.19	6.12	0.99	-0.02	0.81	6.65
Monetary Income Decile 1 (lowest)	5.02	1.13	1.66	6.31	0.77	-0.63	1.09	6.82
Monetary Income Decile 10 (highest)	5.23	1.39	1.15	6.01	1.06	-0.04	0.80	6.56
Non-pensioners	5.16	1.29	1.36	6.02	0.83	-0.41	0.86	6.66
Pensioners	5.06	0.60	1.97	6.99	0.23	-0.72	0.90	7.16
Renters ⁽³⁾	6.52	1.44	1.31	5.87	1.41	-0.31	0.89	6.56
Mortgagors	4.66	1.20	1.40	6.12	0.55	-0.47	0.77	6.75
No housing costs	4.44	0.90	1.66	6.53	0.31	-0.58	0.92	6.91
Employed	5.13	1.30	1.31	6.00	0.83	-0.37	0.85	6.65
Unoccupied	5.18	0.80	1.87	6.69	0.44	-0.69	0.91	7.01
No children	5.25	0.97	1.62	6.54	0.60	-0.52	0.87	6.90
Children	5.03	1.36	1.31	5.84	0.86	-0.40	0.86	6.60
Age < 25	5.21	1.31	1.39	5.76	0.82	-0.55	0.87	6.53
Age 26-34	5.41	1.39	1.26	5.95	0.93	-0.35	0.82	6.63
Age 35-49	5.06	1.29	1.31	5.97	0.85	-0.40	0.85	6.61
Age 50-64	4.99	1.13	1.53	6.32	0.69	-0.45	0.90	6.82
Age > 65	5.11	0.59	2.00	7.00	0.23	-0.70	0.90	7.18
Lone parents	5.48	0.96	1.37	6.18	0.53	-0.67	0.74	6.55
Couples with children	5.00	1.39	1.31	5.81	0.88	-0.38	0.87	6.60
Couples without children ⁽⁴⁾	5.18	1.12	1.57	6.37	0.75	-0.42	0.93	6.83
Single adults (below the age of 65)	5.66	1.11	1.37	6.41	0.69	-0.50	0.76	6.79
10 years or less of schooling	5.01	0.91	1.75	6.56	0.55	-0.67	1.06	6.96
12 years of schooling	5.00	1.15	1.41	6.15	0.63	-0.52	0.87	6.71
More than 12 years of schooling	5.31	1.30	1.37	6.04	0.87	-0.31	0.76	6.67
Urban areas	5.15	1.14	1.49	6.22	0.70	-0.48	0.85	6.76
Rural areas	5.06	1.44	1.19	5.90	1.17	-0.06	1.07	6.66
Expenditure Decile 1 (lowest)	4.16	0.76	2.20	7.33	0.11	-0.89	0.95	7.32
Expenditure Decile 10 (highest)	5.99	1.09	0.86	5.86	1.20	-0.02	0.86	6.36

(1) Bold type indicates groups with means that are significantly above the all-household average.

(2) These growth rates are the average of 15-year mean inflation rates.

(3) Households that rent an apartment and also pay mortgage are classified as renters.

(4) Including couples that live with another single adult (of any age).

The extent of “damage” due to higher-than-average inflation rates seems to be much more severe in the years of higher inflation. Therefore, the question is – which of the groups listed above still experience higher inflation in the years of inflation rates above 6% (1991-1997 and 2002)? We define a group experiencing inflation which is “usually above the mean inflation rate” as a minimum 5 years period out of 8 high-inflation years, and analogously “usually below the mean inflation rate” as 5 years or less.

The number of years when specific groups experienced lower- or higher-than-average inflation rates during the high-inflation period is presented in Table 4. Households that usually suffer higher than average inflation rates are: (1) lowest monetary income decile, (2) households with no housing costs and (3) households with head of age 50 to 64. Those who faced higher-than-average inflation during all these years are: (4) pensioners and persons of age 65 or older, (5) unemployed, (6)

households without children, (7) households with household head with education of 10 years or less, (8) urban households and (9) households belonging to the lowest expenditure decile.

On the other hand, those who faced a lower-than-average inflation rate during the whole period (15 years) are: (1) lowest and highest income deciles, (2) renters (who actually faced higher-than-average inflation during the whole fifteen years period!) and (3) lone parents. Those who faced lower-than average inflation throughout all the high-inflation years are: (4) highest monetary income decile, (5) non-pensioners, (6) employed, (7) households with children, (8) households with households head younger than 50, (9) couples with children, (10) households with households head of more than 12 years of schooling, (11) rural areas and (12) the highest expenditure decile.

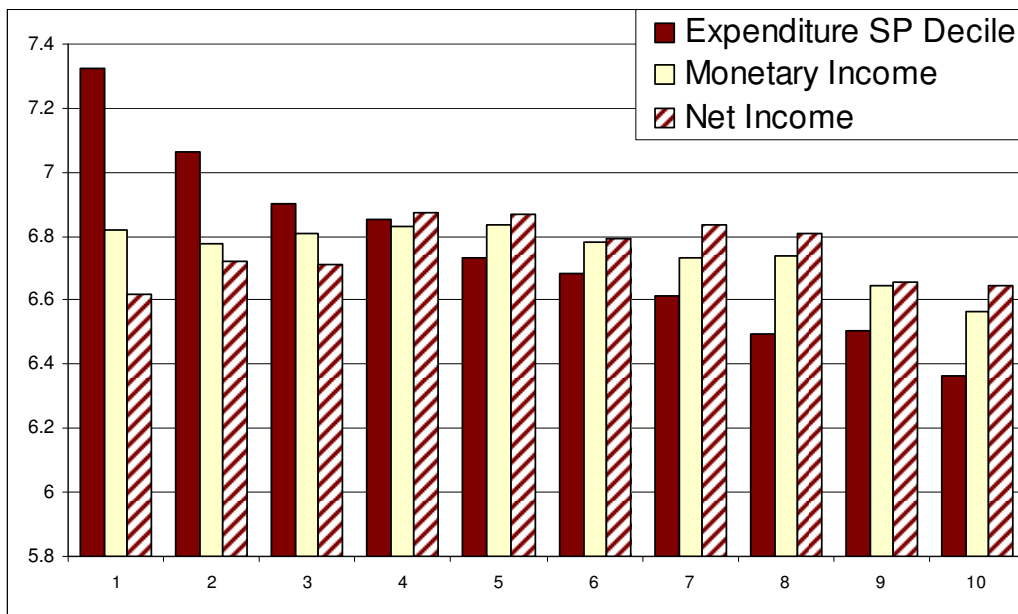
Although in most cases there is no particular pattern for the overall period, for high inflation years it is clear that the weakest social groups (pensioners, unemployed, lower-educated, low-spending) suffer from higher-than-average inflation rates.

Table 4. Number of years when a group experienced higher-than-average or lower-than-average inflation, by group.

Number of cases Group	In all 15 years		In 8 high-inflation years	
	Lower than average	Higher than average	Lower than average	Higher than average
Income Decile 1	8	7	6	2
Income Decile 10	9	6	6	2
Monetary Income Decile 1	7	8	3	5
Monetary Income Decile 10	10	5	8	0
Non-pensioners	11	4	8	0
Pensioners	4	11	0	8
Renters (3)	6	9	5	3
Mortgagors	10	5	4	4
No housing costs	7	8	2	6
Employed	12	3	8	0
Unoccupied	3	12	0	8
No children	3	12	0	8
Children	12	3	8	0
Age < 25	11	4	8	0
Age 26-34	9	6	7	1
Age 35-49	12	3	8	0
Age 50-64	5	10	1	7
Age > 65	4	11	0	8
Lone parents	10	5	5	3
Couples with children	11	4	8	0
Couples without children (4)	2	13	1	7
Single adults (below the age of 65)	8	7	3	5
10 years or less of schooling	4	11	0	8
12 years of schooling	10	5	4	4
More than 12 years of schooling	10	5	8	0
Urban areas	4	11	0	8
Rural areas	11	4	8	0
Expenditure Decile 1	5	10	0	8
Expenditure Decile 10	11	4	8	0

One of the interesting findings is that dividing households by expenditure deciles produces larger differences between groups, than if using income or monetary income deciles. Figure 4 presents the inflation rates of each of the ten deciles, grouped by three different methods. We point to the sources of heterogeneity, which might explain these differences, in the next section.

Figure 4: Annual inflation rates 1991-2005, by Net Income per Standard Person, Net Monetary Income per Standard Person and Expenditure per Standard Person Deciles (1=lowest decile, 10-highest decile).



IV. Sources of heterogeneity

If households face different inflation rates, a natural question is whether we can pinpoint the source of this heterogeneity. First of all, there must be differences in inflation rates across item strata. Since household specific inflation rates are weighted averages of the inflation rates of the item strata, for each household, in case there is no difference in the cross-strata inflation rates then this weighted average would not depend on the expenditure weights.

Second, households must have expenditure patterns different than the average; otherwise each household's inflation rate is based on the same expenditure weights and is thus the same.

Hence, in order to get an idea what underlies the differences in inflation rates across households, two points are of a particular interest: (1) we would like to know how large the variation in expenditure shares is across households; (2) we are interested in the relative price change for the different item strata over our sample period.

Two figures, 5a and 5b present the expenditure shares of the ten main consumption groups, in the whole population and in the lowest and highest deciles (by expenditure and monetary income, - the difference between the expenditure shares of Net Income and Monetary Income Deciles is not significant, so we omit the presentation of income decile shares).

Figure 5a: Expenditure Shares by Expenditure Decile

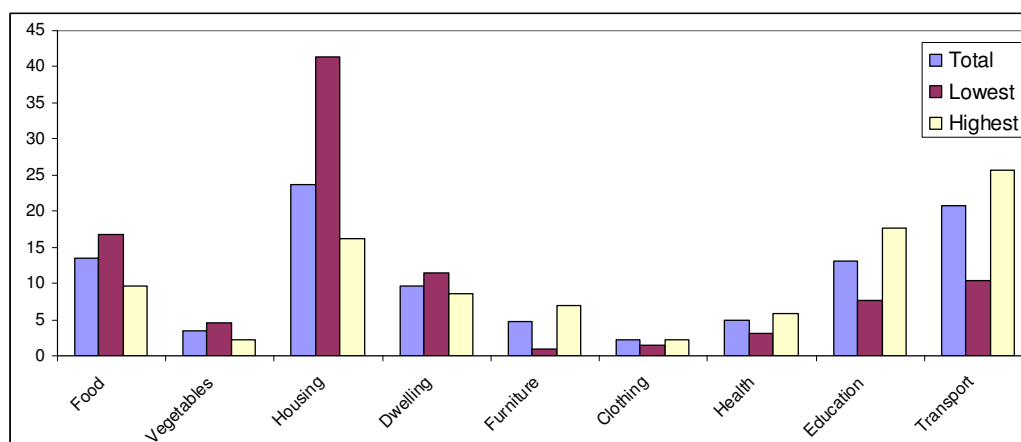
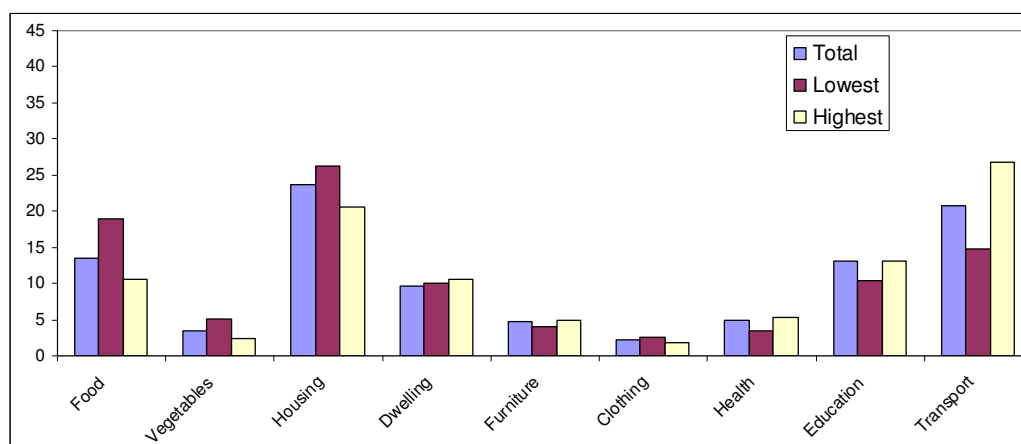


Figure 5b: Expenditure Shares by Monetary Income Decile



It is clear that although there is some degree of overlap between the expenditure and monetary income deciles, still the variation is high. The most extreme difference is in expenditure on housing (rent and housing services): while the lowest expenditure decile spends over 40% of its total expenditure on housing, the lowest monetary income decile spends far less – 26%. The differences between the two decile definitions can be seen in other consumption groups: the share of dwelling and household maintenance is higher for the monetary income highest decile than for the expenditure highest decile (10.6% versus 8.6%), the lowest expenditure decile spends only 1% on furniture and household equipment, while the lowest monetary income decile spends slightly more than 4%. Education and culture, as transport and communication shares are higher for the lowest monetary income decile than for the lowest expenditure decile.

Even if the main class consumption shares are alike, there is a high heterogeneity inside each class. The detailed account of expenditure shares by different definition of deciles is presented in Appendix C. The share of food consumption is close for the lowest expenditure and monetary income decile. However, the lowest expenditure decile tends to consume more milk than meat or meals away from home.

Here we enter the problematic question of who is poorer – the one who earns less or the one who spends less? This discussion is beyond the scope of this paper, and we point out the importance of the definition only in order to explain the extreme differences between the expenditure and income groups. Tables 1-2 in the Appendix D present the "transfer matrix" - percentage of households according to

their belonging both to income and expenditure deciles. More on differences between the two decile definitions: the percentage of each demographic category in Expenditure and Income lowest and highest deciles can be found in the Appendix E.

Now we turn to analyze the evolution of price indices for the various goods categories. Table 5 presents the average annual price indices for ten main groups comprising the Israeli CPI. All indices are current year to base year relatives, normalized by 1990=100⁷.

Table 5: Consumer Price Index: Current-to-base (Annual base 1990=100.0).

	1990	1991	1992	1993	1994	1995	1996	1997	1998
General index	100.0	119.0	133.2	147.8	166.0	182.7	203.3	221.6	233.7
Food (excl. vegetables and fruit)	100.0	114.2	127.8	136.0	147.5	161.3	179.5	195.5	208.0
Vegetables and fruit	100.0	112.2	131.2	131.9	160.2	160.7	167.1	185.2	189.8
Housing	100.0	131.6	146.2	174.4	215.5	246.3	285.4	316.4	334.6
Household maintenance	100.0	117.3	129.4	137.0	148.0	164.0	181.5	197.9	209.8
Furniture and household equipment	100.0	115.0	125.1	133.6	139.6	150.6	162.6	173.4	180.7
Clothing and footwear	100.0	108.2	118.1	125.6	131.2	140.7	150.1	152.1	150.2
Health	100.0	118.8	142.1	160.5	179.7	200.8	224.4	249.1	266.9
Education, culture and entertainment	100.0	115.8	130.4	147.3	163.2	178.1	195.7	213.4	227.5
Transport and communication	100.0	118.9	133.2	146.9	161.3	176.1	193.6	209.7	220.5
Miscellaneous	100.0	116.6	127.9	141.9	152.1	165.8	186.1	204.0	217.4
	1999	2000	2001	2002	2003	2004	2005		
General index	245.8	248.6	251.4	265.6	267.4	266.3	269.9		
Food (excl. vegetables and fruit)	223.6	229.8	235.5	241.5	248.2	251.2	254.7		
Vegetables and fruit	199.0	200.0	205.4	213.6	220.1	206.1	211.9		
Housing	343.3	335.9	348.8	389.0	370.2	360.1	356.3		
Household maintenance	222.7	232.5	235.2	252.4	263.3	270.0	283.8		
Furniture and household equipment	194.0	188.0	178.7	180.8	180.4	175.0	174.1		
Clothing and footwear	150.4	150.3	144.6	137.2	129.4	124.5	117.0		
Health	291.1	300.8	314.3	332.8	341.2	348.6	354.9		
Education, culture and entertainment	242.8	245.3	244.0	250.2	250.9	248.8	248.7		
Transport and communication	229.2	235.6	235.3	249.1	259.2	262.1	266.3		
Miscellaneous	235.4	240.7	243.2	260.9	267.9	267.3	277.7		

Out of ten main groups comprising the general CPI, over the sixteen years, four have shown an increase in price index that is higher than the general average: housing, household maintenance, health expenditure and miscellaneous. The index level of only three groups is significantly lower than the average: vegetables and fruit, furniture and household equipment and clothing and footwear. The lower deciles (especially the expenditure decile) tend to spend much larger shares on housing and household maintenance than higher deciles, and significantly lower shares on clothing and furniture. The relatively high percentage of mortgagors in the lowest expenditure decile (Appendix E) explains part of the large housing expenditure share of this decile.

⁷ This is an official index published by the ICBS. Let us remind again that it does not equal the overall CPI constructed for the purpose of the present study.

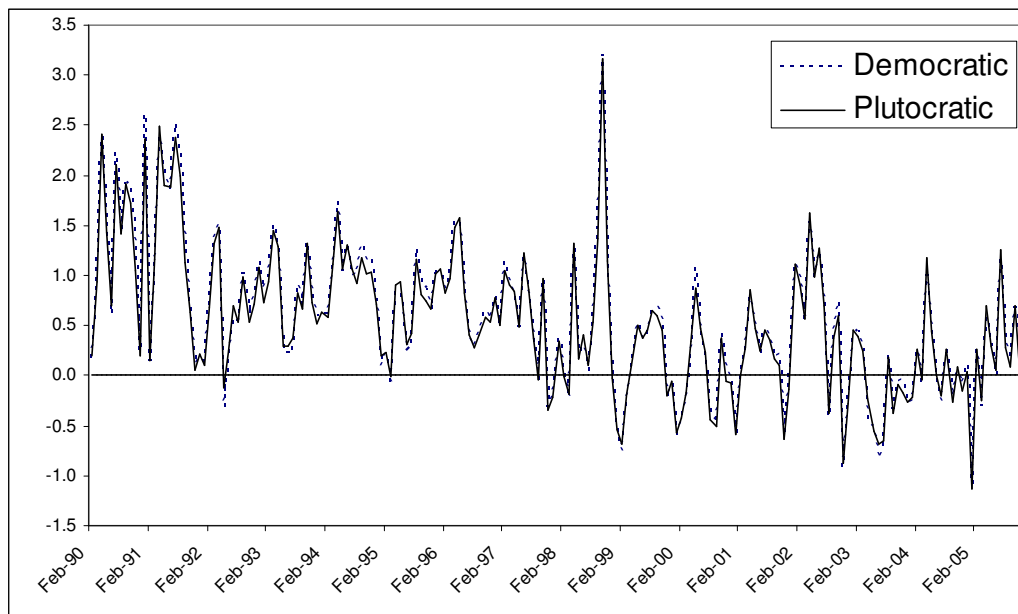
V. Monthly Inflation

Now we turn to analyze the dispersion of monthly inflation rates in order to test whether the results discussed in the previous sections still hold for shorter time periods.

V.1 Mean monthly inflation

We start by presenting the monthly inflation rates from February 1990 to December 2005. Figure 6 shows that there is a slight decline in monthly inflation, from around 1.5% percent, to 0-0.5% percents. One finds it hard to see any pattern in differences between the democratic and plutocratic inflation rates.

Figure 6: Democratic and Plutocratic inflation rates, February 1990 - December 2005



However, it is expected that on the lower rates of inflation, the differences between the two weighting schemes cannot be significant enough, so we turned to test only "high-inflation months", with an inflation rate larger than 1%. The results are presented in Figures 7 and 8. Figure 7 presents the results in their time order. Figure 8 presents the results ordered by the highest democratic inflation rate.

Figure 7: Months with inflation larger than 1%

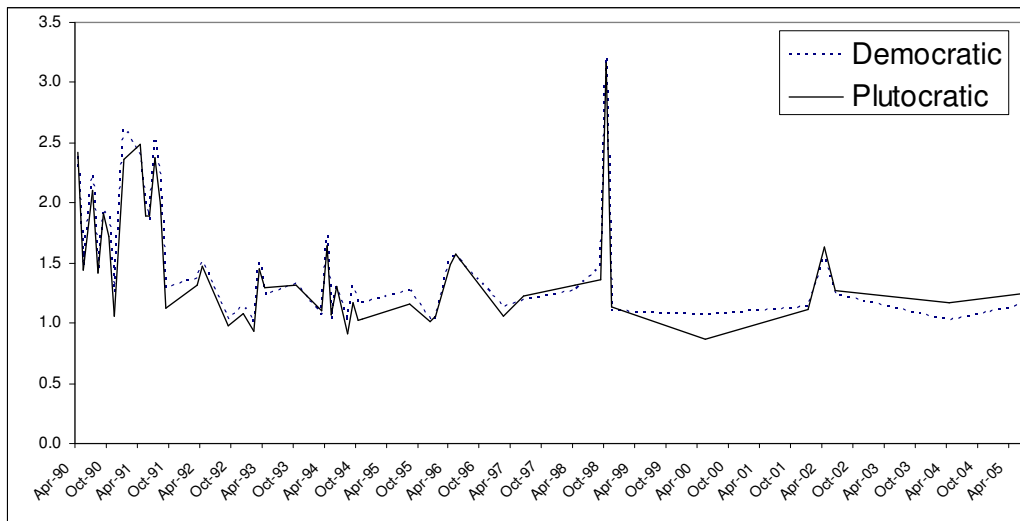
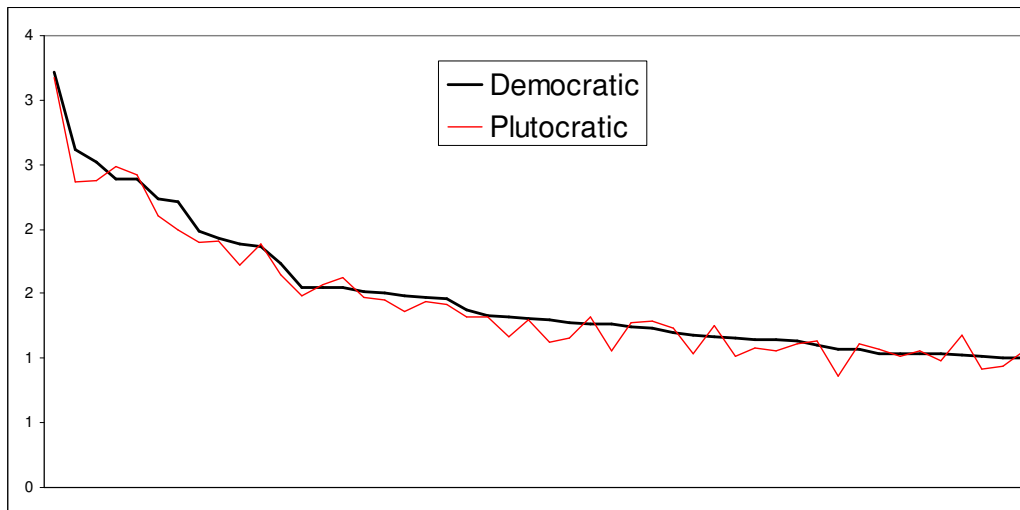


Figure 8: Plutocratic and Democratic Inflation Rates, ordered by the highest democratic rate



The two diagrams do not show any consistency in the results, although the democratic inflation is higher for more high-inflation months than the plutocratic one. The cumulative difference between the two lines in Figure 8 is negative, meaning the plutocratic mean was lower in cumulative terms. Figure 7 shows that this is true for years 1991, 1995, 2000, but not for 2003-2004, when the plutocratic inflation is higher. To explain this, we must check for which of the consumption groups, in the higher expenditure deciles, the price index increased significantly in these years, compared to the previous period. Or, on the contrary, for which of the consumption groups consumed mostly by lower expenditure deciles, the price index changes were small compared to the previous period. The immediate answer is – the housing costs, which comprise between 35-40% of the two lowest expenditure deciles, compared to the 16-20% of the two highest. The housing cost price index has increased by nearly 300% between the years 1990-2002, but not afterwards.

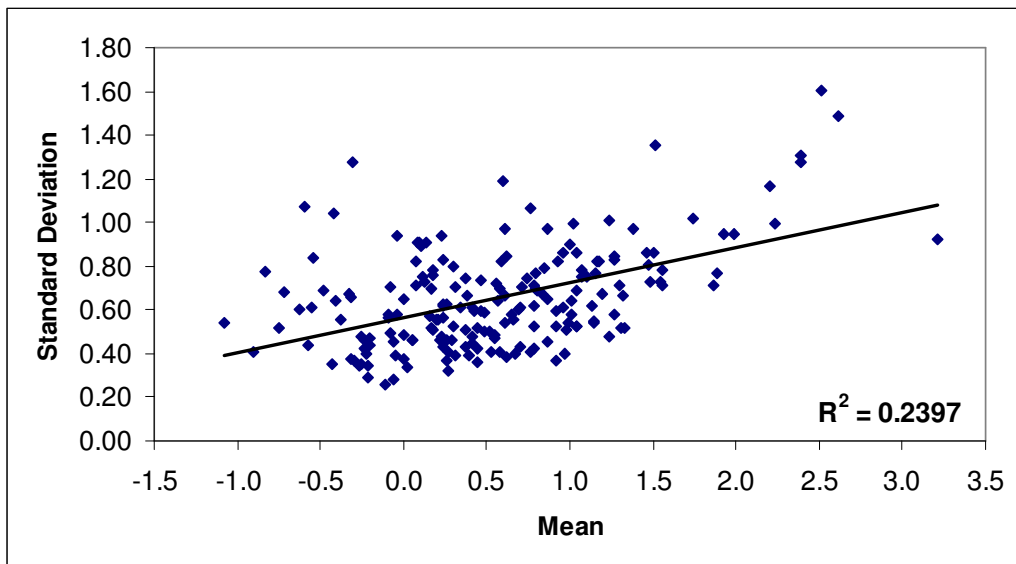
This simple analysis leads us to a striking conclusion – whenever the housing costs go up, the lower expenditure deciles have higher inflation than the highest. On the other hand, with relatively

stable housing costs and when the overall inflation rates are relatively low, the plutocratic inflation is slightly higher than the democratic one.

V.2 The distribution of monthly inflation rates

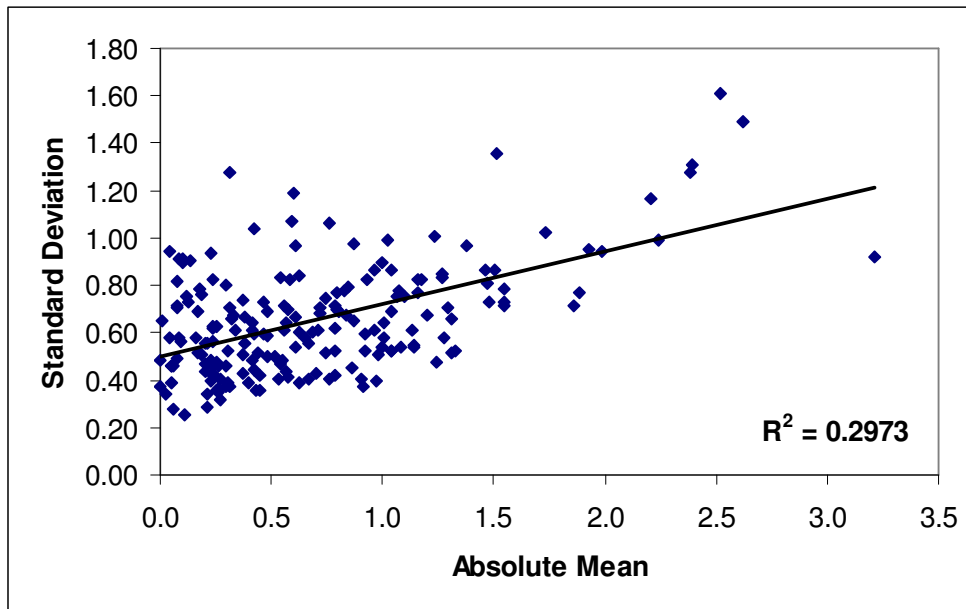
The analysis of the annual inflation rates show that the distribution of annual inflation rates between households is wider whenever the mean inflation rate is high. Does the statement still hold for more frequent and hence, more "noisy" data? Figure 9a shows that although lower than in the case of annual inflation, there is still a positive relationship between the mean monthly inflation rate and its standard deviation.

Figure 9a: The relationship between the mean monthly inflation and its dispersion



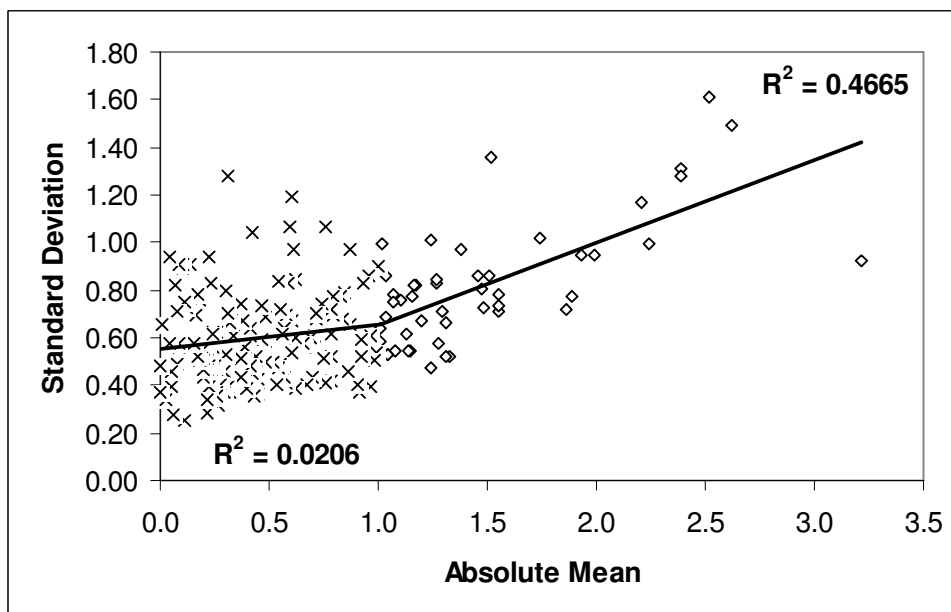
The presence of negative means might distort the inference, however, as in our analysis it is unimportant whether the inflation is above zero, or under it – we still expect to find higher dispersion for mean values distant from zero. Figure 9a presents the relationship between the absolute mean and standard deviation.

Figure 9b: The relationship between the absolute mean monthly inflation rate and the standard deviation



Here the relationship is clearer, but mostly for higher inflation rates. Whenever the mean inflation is closer to zero (lower than 1%) the standard deviation can take any value, even as high as 1-1.3. Dividing the results into two simple groups – low (below 1%) and higher inflation rates produces more straightforward results: the relationship between inflation and its dispersion is higher whenever the inflation rate is higher.

Figure 9c: The relationship between the absolute mean inflation rate and the standard deviation, by low and high inflation rates



V.3 Monthly Inflation rates by group

As in the case of annual inflation, we analyzed the dispersion of inflation rates between different population groups. In order not to exhaust the reader with the results of 191 months for 29 group

categories, we present only the summary of results, in Table 6. It shows the number of months when the group-specific inflation rate was lower or higher than the average democratic inflation rate in the population. We calculate this number out of the total 191 months, and separately, out of 48 months with the average inflation rate higher than 1%.

Table 6: Number of months with higher-than-average and lower-than-average inflation, by group.

Group	All months (191 observations)				High-inflation months (48 observations)			
	Percents		Number of months		Percents		Number of months	
	Lower than average	Higher than average	Lower than average	Higher than average	Lower than average	Higher than average	Lower than average	Higher than average
Income Decile 1	52%	48%	99	92	48%	52%	23	25
Income Decile 10	50%	50%	96	95	58%	42%	28	20
Monetary Income Decile 1	53%	47%	102	89	60%	40%	29	19
Monetary Income Decile 10	48%	52%	91	100	54%	46%	26	22
Non-pensioners	57%	43%	108	83	85%	15%	41	7
Pensioners	43%	57%	83	108	15%	85%	7	41
Renters (3)	53%	47%	101	90	69%	31%	33	15
Mortgagors	48%	52%	92	99	40%	60%	19	29
No housing costs	44%	56%	84	107	25%	75%	12	36
Employed	57%	43%	108	83	75%	25%	36	12
Unoccupied	43%	57%	83	108	25%	75%	12	36
No children	40%	60%	76	115	15%	85%	7	41
Children	60%	40%	115	76	85%	15%	41	7
Age < 25	49%	51%	93	98	65%	35%	31	17
Age 26-34	46%	54%	88	103	73%	27%	35	13
Age 35-49	48%	52%	91	100	88%	13%	42	6
Age 50-64	35%	65%	67	124	27%	73%	13	35
Age > 65	40%	60%	76	115	19%	81%	9	39
Lone parents	54%	46%	103	88	73%	27%	35	13
Couples with children	48%	52%	92	99	79%	21%	38	10
Couples without children (4)	37%	63%	71	120	23%	77%	11	37
Single adults (below the age of 65)	43%	57%	83	108	63%	38%	30	18
10 years or less of schooling	39%	61%	75	116	31%	69%	15	33
12 years of schooling	47%	53%	90	101	60%	40%	29	19
More than 12 years of schooling	45%	55%	86	105	71%	29%	34	14
Urban areas	40%	60%	77	114	33%	67%	16	32
Rural areas	45%	55%	86	105	67%	33%	32	16
Expenditure Decile 1	39%	61%	74	117	17%	83%	8	40
Expenditure Decile 10	48%	52%	91	100	67%	33%	32	16

The table shows that 57% of pensioners suffered higher-than-average inflation during the whole period, and as much as 85% suffered higher than average inflation in high-inflation months.

Among the other groups suffering from higher-than-average inflation rates are mortgagors (60% of high inflation months) and persons with no housing costs (56% for the whole period, and 75% in high inflation months), unemployed (75% in high inflation months), households without children (60% overall, 85% in high inflation months), persons aged above 50 (60-65 % overall, 73-80% in high-inflation months), couples without children (63% and 77%), 10 or less years of schooling (61% and 69%), urban areas (60% and 67%) and first expenditure decile (61% and 83%).

Again, most of the weaker groups experience higher-than average inflation. Although there are periods when these groups were “better off” than the whole population, they experience higher than average inflation, most of the time.

VI. Summary

There seems not to be a consensus, neither from a theoretical, nor from an empirical point of view, which weighting scheme is better for aggregating a CPI; whether by democratic, plutocratic, or other variations of these methods. Our aim was to analyze what results could be obtained if in Israel, for the years 1990-2005, the CPI's were constructed in a different manner. We found that there is almost no difference between the indices obtained by different weighting schemes when the inflation is low. However, when the inflation is high, the democratic index is higher than the plutocratic one, the democratic inflation rates are higher and when using social distributional weights that reflect the rank of each household in income or expenditure distribution, thus "overweighting" the poor, we get even higher inflation. This leads us to a conclusion that in these years, the poorer households experienced higher-than-average inflation rates, which might result in the underestimation of their benefits indexation.

Some economists and policy-makers also consider the relevancy of group-specific indices. If these groups differ significantly in their expenditure shares, it is likely to expect that they will experience different inflation rates. The effect is supported by the asymmetrical price changes. In our study this is especially true in case of the lower expenditure decile, whose share of spending on housing comprises nearly 40% of their total consumption. Given this, and that the housing costs rose by nearly 50% more than the overall CPI (from 1990 to 2005), the lower expenditure decile's inflation is the highest of all. We find that some weaker groups, especially pensioners and unemployed, suffered more than other groups from higher inflation rates. Hence, considering the special price index for these groups might be of use.

Moving from the analysis of annual to monthly inflation, the previous results are confirmed. High-inflation months are the "worst" for weaker groups, as they experience higher inflation rates, hence one might expect that their compensations be underestimated.

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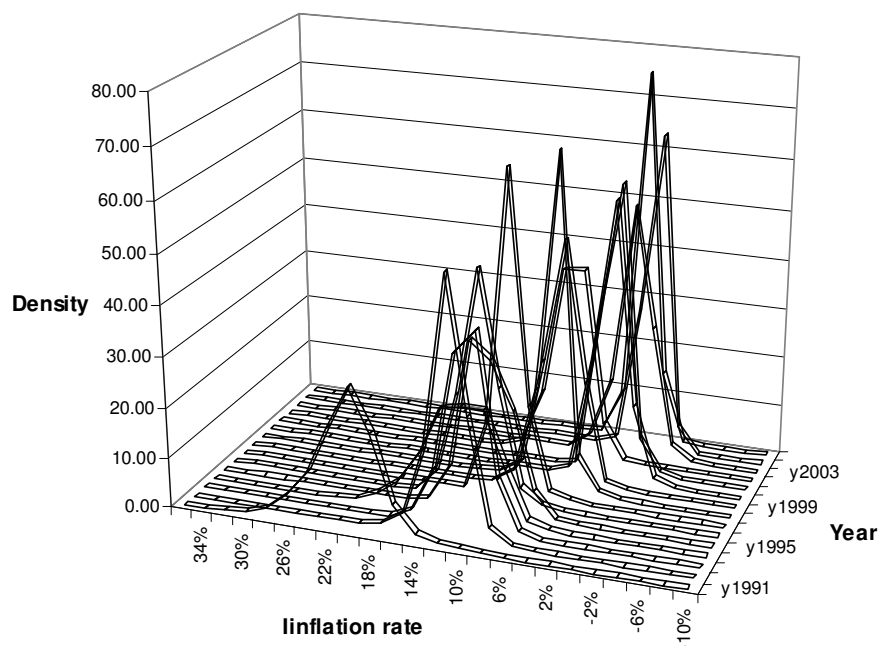
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Appendix A: The Distribution of Annual Inflation Rates

Figure 3.1: Distribution of the inflation rates, 1991-2005



Range	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
-10%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-8%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-6%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
-4%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.3	0.1	0.0
-2%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	1.8	1.3	0.0	3.4	5.5	0.5
0%	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	15.9	7.4	0.0	27.0	64.3	14.4
2%	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.3	1.6	56.2	58.1	0.5	51.2	28.6	75.0
4%	0.0	0.0	0.2	0.4	0.6	0.4	0.9	7.7	21.0	24.3	32.3	7.8	14.9	1.3	9.3
6%	0.0	0.3	1.3	1.6	5.6	1.0	1.7	67.4	49.1	1.4	0.6	38.8	2.8	0.1	0.5
8%	0.3	3.2	11.1	11.2	20.8	3.9	18.5	20.1	24.2	0.1	0.1	38.5	0.2	0.0	0.1
10%	0.5	24.5	39.4	22.3	30.4	23.1	64.6	3.0	3.0	0.0	0.0	12.7	0.0	0.0	0.1
12%	0.8	51.2	34.4	22.2	33.6	46.2	13.9	0.2	0.6	0.0	0.0	1.6	0.1	0.0	0.0
14%	1.9	16.7	11.0	21.3	7.9	20.6	0.2	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0
16%	6.9	3.4	2.3	11.9	0.7	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18%	20.5	0.7	0.3	5.6	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20%	28.9	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22%	20.3	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24%	10.7	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26%	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28%	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30%	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32%	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34%	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

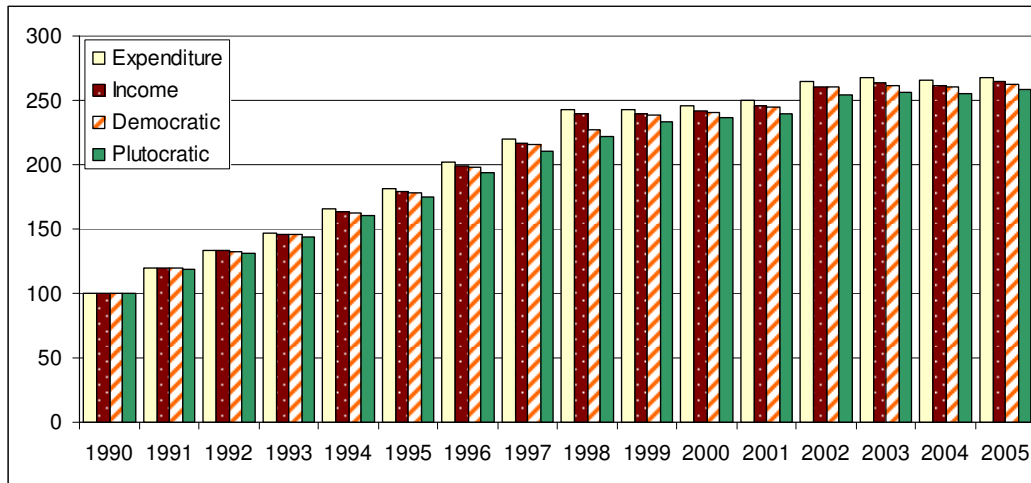
Appendix B: Annual Price Indices

Table B. Annual Average of Price Indices (Base: Average 1990=100), using Democratic, Plutocratic, Expenditure Distribution and Income (social) Distribution Weighting Schemes

Year	DEMOCRATIC				PLUTOCRATIC				Percentage Difference
	Mean	Std. Dev.	95% confidence interval		Mean	Std. Dev.	95% confidence interval		
			Lower	Upper			Lower	Upper	
1990	100.00	0.00			100.00	0.00			0.00
1991	119.54	3.33	119.46	119.62	118.73	2.92	118.65	118.80	-0.68
1992	132.54	4.76	132.42	132.66	131.33	4.24	131.23	131.44	-0.91
1993	145.85	7.01	145.68	146.03	144.19	6.08	144.04	144.34	-1.14
1994	162.73	10.71	162.47	163.00	160.43	9.41	160.19	160.66	-1.42
1995	178.07	14.05	177.72	178.42	175.28	12.46	174.97	175.59	-1.57
1996	197.65	18.32	197.20	198.11	194.08	16.18	193.68	194.48	-1.81
1997	215.15	21.55	214.62	215.69	210.91	19.07	210.44	211.39	-1.97
1998	226.59	23.29	226.01	227.17	222.18	20.70	221.67	222.70	-1.95
1999	238.19	23.97	237.60	238.79	233.78	21.73	233.24	234.31	-1.85
2000	240.94	24.09	240.34	241.54	236.69	22.44	236.13	237.25	-1.76
2001	244.68	26.25	244.03	245.33	239.81	24.37	239.21	240.42	-1.99
2002	260.15	30.72	259.38	260.91	254.31	28.00	253.61	255.00	-2.25
2003	261.89	29.83	261.15	262.63	256.40	27.81	255.71	257.09	-2.10
2004	260.69	29.82	259.95	261.43	255.60	28.12	254.90	256.30	-1.95
2005	262.98	30.48	262.22	263.74	257.83	28.96	257.11	258.55	-1.96

Year	Expenditure				Income			
	Mean	Std. Dev.	95% confidence interval		Mean	Std. Dev.	95% confidence interval	
			Lower	Upper			Lower	Upper
1990	100.00	0.00			100.00	0.00		
1991	120.21	3.41	120.12	120.29	119.85	3.50	119.76	119.93
1992	133.38	4.68	133.27	133.50	133.01	4.91	132.89	133.13
1993	147.03	7.15	146.85	147.20	146.31	7.30	146.12	146.49
1994	165.24	11.38	164.95	165.52	163.47	11.33	163.19	163.75
1995	181.46	15.02	181.09	181.84	178.89	14.87	178.52	179.26
1996	202.13	19.67	201.64	202.62	198.74	19.45	198.26	199.23
1997	220.31	23.02	219.74	220.88	216.51	22.82	215.95	217.08
1998	242.93	24.94	242.31	243.55	239.56	25.13	238.94	240.19
1999	242.93	24.94	242.31	243.55	239.56	25.13	238.94	240.19
2000	245.49	24.50	244.88	246.10	242.12	25.07	241.49	242.74
2001	249.83	26.72	249.17	250.49	246.13	27.35	245.45	246.81
2002	264.34	31.15	263.57	265.11	260.03	31.66	259.25	260.82
2003	267.48	30.19	266.73	268.23	263.48	31.10	262.71	264.25
2004	265.79	29.94	265.04	266.53	261.97	31.03	261.20	262.75
2005	268.12	30.40	267.37	268.88	264.37	31.64	263.58	265.15

Figure B. Annual Average Indices 1990-2005, using Expenditure and Income distribution, Democratic, and Plutocratic weighting schemes



Appendix C: Expenditure Shares of Deciles

Table C1. Expenditure Shares by Expenditure Decile per Standard Person, 2002

Group	Total	Lowest	2	3	4	5	6	7	8	9	Highest
All	100	100	100	100	100	100	100	100	100	100	100
Food (excl. fruit, vegetables)	13.49	16.76	16.92	16.18	16.51	14.74	14.89	13.91	13.28	12.02	9.74
Bread, cereals and pastry products	2.48	3.87	3.58	3.44	3.25	2.83	2.79	2.63	2.22	2.02	1.45
Vegetable oils and products	0.34	0.48	0.48	0.44	0.46	0.38	0.37	0.31	0.41	0.27	0.17
Meat, poultry and fish	3.46	4.30	4.94	4.65	4.90	4.17	3.99	3.67	3.36	2.70	1.94
Milk, milk products and eggs	2.58	4.39	3.75	3.35	3.47	2.99	2.92	2.64	2.31	2.11	1.46
Sugar and sugar products	0.56	0.64	0.69	0.74	0.66	0.66	0.68	0.57	0.58	0.48	0.34
Beverages	1.15	1.33	1.43	1.44	1.35	1.28	1.21	1.24	1.12	1.08	0.83
Meals away from home	1.88	0.51	0.86	0.93	1.16	1.30	1.73	1.71	2.29	2.38	2.79
Miscellaneous food products	1.04	1.26	1.18	1.18	1.26	1.13	1.19	1.14	0.99	0.98	0.76
Vegetables and fruit	3.45	4.56	4.88	4.80	4.53	4.15	3.70	3.44	3.42	2.83	2.10
Vegetables	1.37	2.06	2.06	2.05	1.91	1.67	1.45	1.31	1.29	1.07	0.78
Fruit, fresh	1.04	1.49	1.54	1.54	1.38	1.27	1.11	1.03	1.02	0.80	0.61
Processed vegetable products	0.63	0.74	0.87	0.78	0.77	0.73	0.69	0.66	0.64	0.59	0.40
Processed fruit products	0.40	0.27	0.41	0.44	0.47	0.49	0.46	0.44	0.46	0.36	0.30
Housing	23.65	41.34	35.46	30.14	28.22	26.42	24.30	22.65	20.98	20.39	16.26
Government taxes	0.22	0.06	0.09	0.07	0.08	0.04	0.07	0.14	0.14	0.28	0.57
Monthly rent	4.54	1.93	3.69	4.84	5.59	4.10	3.85	4.41	4.44	5.52	4.77
Housing services consumption	18.89	39.35	31.69	25.23	22.55	22.27	20.38	18.10	16.40	14.59	10.92
Dwelling, household maintenance	9.73	11.49	10.61	10.57	10.01	10.43	10.18	10.16	9.38	9.28	8.59
Electricity, fuel and water	3.68	6.38	5.35	4.97	4.75	4.16	3.97	3.75	3.21	2.92	2.37
Maintenance and renovation	1.21	0.85	1.19	0.94	0.99	1.26	1.21	1.17	1.16	1.36	1.37
Domestic help	1.65	0.25	0.38	0.68	0.76	1.50	1.68	1.90	1.93	2.10	2.30
Miscellaneous household articles	0.85	0.99	0.99	0.99	0.97	0.98	0.87	0.85	0.87	0.80	0.65
Municipal property taxes (Arnona)	2.35	3.02	2.69	3.00	2.54	2.54	2.44	2.50	2.21	2.10	1.90
Furniture, household equipment	4.70	1.00	2.36	2.75	3.17	3.63	3.84	4.56	5.39	5.81	6.94
Furniture	1.77	0.15	0.61	0.70	1.01	0.98	1.22	1.69	1.98	2.43	3.05
Household electrical equipment	1.74	0.51	1.08	1.27	1.28	1.43	1.55	1.85	1.90	2.04	2.32
Non-electrical equipment	0.41	0.22	0.26	0.36	0.34	0.53	0.38	0.37	0.44	0.45	0.46
Bedding and home decorations	0.78	0.12	0.41	0.42	0.54	0.69	0.68	0.66	1.07	0.90	1.11
Clothing and footwear	2.13	1.46	1.89	1.92	2.21	2.30	1.98	2.15	2.29	2.14	2.26
Clothing	2.17	1.46	1.90	1.93	2.22	2.32	2.01	2.17	2.32	2.17	2.36
Footwear	0.42	0.40	0.45	0.49	0.47	0.48	0.39	0.46	0.40	0.36	0.41
Health	4.92	3.01	3.56	4.02	4.45	4.56	4.93	4.49	5.24	5.55	5.85
Health insurance	1.05	0.91	1.07	1.06	1.09	1.13	1.17	1.12	1.03	1.08	0.92
Dental treatment	1.50	0.65	0.67	1.01	1.28	1.22	1.66	1.29	1.89	1.82	1.83
Expenditures on health services	2.37	1.45	1.81	1.96	2.09	2.20	2.11	2.09	2.32	2.65	3.09
Education, culture, entertainment	13.06	7.59	8.83	10.17	9.87	11.30	12.44	13.17	13.31	13.69	17.70
Education services	4.70	3.54	4.11	4.61	4.43	5.33	5.67	5.48	5.01	4.91	3.76
Newspapers, books and stationery	0.94	0.52	0.50	0.80	0.76	0.86	0.95	1.16	1.03	1.01	1.07
Culture and entertainment	7.42	3.53	4.22	4.75	4.68	5.11	5.83	6.52	7.27	7.78	12.87
Transport and communication	20.80	10.46	12.64	15.95	17.38	18.77	20.21	21.21	22.78	23.47	25.65
Public transport	1.04	1.41	1.78	1.68	1.46	1.33	1.15	1.16	0.87	0.79	0.47
Travel abroad	3.70	0.16	0.20	0.35	0.82	0.91	1.55	1.98	3.50	5.29	9.53
Expenditures on vehicles	11.29	4.61	5.54	8.68	9.55	11.17	12.29	13.30	13.22	12.89	11.82
Post, telephone and communication	4.77	4.29	5.11	5.24	5.56	5.35	5.22	4.77	5.18	4.51	3.83
Miscellaneous goods and services	3.60	1.91	2.40	3.00	3.16	3.22	3.11	3.76	3.49	4.43	4.43
Cigarettes, tobacco and accessories	0.37	0.54	0.53	0.57	0.61	0.45	0.43	0.40	0.29	0.30	0.18
Personal services and cosmetics	2.58	1.16	1.54	1.87	2.06	2.30	2.17	2.72	2.54	3.32	3.29
Jewellery, watches, wallets etc.	0.65	0.21	0.33	0.57	0.50	0.46	0.50	0.64	0.66	0.80	0.96

Table C2. Expenditure Shares by Net Monetary Income Decile per Standard Person, 2002

Group	Total	Lowest	2	3	4	5	6	7	8	9	Highest
All	100	100	100	100	100	100	100	100	100	100	100
Food (excl. fruit, vegetables)	13.49	18.88	18.58	17.41	14.74	13.97	13.71	12.74	12.05	11.01	10.49
Bread, cereals and pastry products	2.48	3.71	3.61	3.26	2.91	2.80	2.60	2.37	2.19	1.90	1.61
Vegetable oils and products	0.34	0.62	0.59	0.66	0.34	0.33	0.32	0.31	0.24	0.23	0.18
Meat, poultry and fish	3.46	5.99	5.99	5.51	4.09	3.81	3.71	3.03	2.78	2.33	1.76
Milk, milk products and eggs	2.58	3.64	3.64	3.29	2.94	2.78	2.57	2.51	2.31	2.02	1.90
Sugar and sugar products	0.56	0.79	0.89	0.75	0.61	0.65	0.55	0.53	0.46	0.44	0.39
Beverages	1.15	1.51	1.46	1.48	1.31	1.19	1.25	1.12	1.04	0.94	0.88
Meals away from home	1.88	1.05	1.04	1.27	1.37	1.39	1.65	1.83	2.09	2.35	2.88
Miscellaneous food products	1.04	1.57	1.36	1.19	1.17	1.03	1.06	1.04	0.95	0.81	0.88
Vegetables and fruit	3.45	5.02	5.00	4.55	4.05	3.71	3.42	3.28	3.09	2.68	2.45
Vegetables	1.37	2.28	2.10	1.97	1.62	1.45	1.35	1.25	1.20	1.02	0.87
Fruit, fresh	1.04	1.55	1.58	1.38	1.27	1.17	0.99	1.00	0.90	0.78	0.73
Processed vegetable products	0.63	0.82	0.79	0.78	0.62	0.71	0.67	0.61	0.61	0.55	0.50
Processed fruit products	0.40	0.37	0.53	0.42	0.54	0.39	0.40	0.42	0.39	0.34	0.35
Housing	23.65	26.25	26.29	25.40	26.47	25.11	24.11	24.27	22.30	21.93	20.61
Government taxes	0.22	0.11	0.06	0.06	0.09	0.17	0.15	0.32	0.20	0.33	0.37
Monthly rent	4.54	4.90	5.44	6.32	6.04	4.81	4.64	3.79	4.42	3.63	3.63
Housing services consumption	18.89	21.24	20.79	19.02	20.34	20.13	19.32	20.16	17.67	17.97	16.61
Dwelling, household maintenance	9.73	10.01	9.93	9.25	9.87	9.80	9.14	9.66	9.03	9.75	10.61
Electricity, fuel and water	3.68	5.07	5.19	4.43	4.16	4.21	3.83	3.52	3.10	3.04	2.78
Maintenance and renovation	1.21	1.07	0.88	1.18	1.24	1.20	1.00	1.14	1.10	1.35	1.50
Domestic help	1.65	0.38	0.39	0.37	1.23	1.14	1.12	1.85	1.74	2.35	3.15
Miscellaneous household articles	0.85	1.16	1.30	1.05	0.86	0.85	0.87	0.76	0.77	0.66	0.74
Municipal property taxes (Arnona)	2.35	2.33	2.18	2.22	2.37	2.40	2.31	2.39	2.33	2.34	2.44
Furniture, household equipment	4.70	4.07	4.33	4.47	5.10	3.99	4.94	4.40	4.52	5.35	4.97
Furniture	1.77	1.09	1.39	1.54	1.63	1.47	2.19	1.45	1.78	2.13	2.12
Household electrical equipment	1.74	2.12	1.94	1.90	2.02	1.47	1.66	1.65	1.59	1.98	1.48
Non-electrical equipment	0.41	0.42	0.43	0.36	0.51	0.30	0.39	0.46	0.34	0.38	0.48
Bedding and home decorations	0.78	0.45	0.58	0.67	0.94	0.75	0.70	0.84	0.81	0.87	0.90
Clothing and footwear	2.13	2.54	2.47	2.32	2.09	2.20	2.24	2.22	1.89	2.13	1.83
Clothing	2.17	2.54	2.49	2.34	2.12	2.21	2.25	2.25	1.91	2.19	1.93
Footwear	0.42	0.49	0.58	0.53	0.46	0.48	0.46	0.37	0.38	0.37	0.33
Health	4.92	3.44	4.73	5.07	5.04	5.07	4.59	4.89	5.17	5.06	5.23
Health insurance	1.05	0.65	0.78	0.91	0.94	1.10	0.98	1.11	1.18	1.17	1.19
Dental treatment	1.50	1.09	1.65	1.43	1.66	1.86	1.43	1.50	1.60	1.36	1.47
Expenditures on health services	2.37	1.70	2.30	2.74	2.43	2.11	2.18	2.29	2.39	2.53	2.57
Education, culture, entertainment	13.06	10.46	11.38	11.12	11.56	12.38	13.74	13.01	16.32	13.81	13.13
Education services	4.70	4.70	3.82	4.20	4.97	4.96	5.68	5.48	5.52	4.43	3.50
Newspapers, books and stationery	0.94	0.82	0.71	0.67	0.93	0.93	0.87	0.93	0.95	0.97	1.22
Culture and entertainment	7.42	4.94	6.85	6.25	5.66	6.49	7.19	6.60	9.85	8.40	8.41
Transport and communication	20.80	14.83	13.61	15.83	17.03	19.91	20.36	21.44	21.24	24.36	26.71
Public transport	1.04	1.82	1.70	1.53	1.36	1.36	1.22	1.14	0.78	0.62	0.37
Travel abroad	3.70	2.09	1.07	1.80	1.96	2.83	2.42	2.91	3.33	5.14	7.75
Expenditures on vehicles	11.29	6.00	5.88	7.48	8.50	10.19	11.38	12.35	12.65	14.17	14.70
Post, telephone and communication	4.77	4.93	4.97	5.02	5.21	5.53	5.35	5.03	4.49	4.43	3.89
Miscellaneous goods and services	3.60	3.98	3.09	4.04	3.57	3.36	3.28	3.69	3.99	3.49	3.53
Cigarettes, tobacco and accessories	0.37	0.84	0.64	0.51	0.44	0.47	0.43	0.37	0.32	0.20	0.10
Personal services and cosmetics	2.58	2.56	1.97	2.96	2.59	2.32	2.36	2.57	2.83	2.74	2.58
Jewellery, watches, wallets etc.	0.65	0.58	0.48	0.56	0.54	0.57	0.50	0.75	0.84	0.55	0.86

Table C3. Expenditure Shares by Net Income per Standard Person, 2002

Group	Total	Lowest	2	3	4	5	6	7	8	9	Highest
All	100	100	100	100	100	100	100	100	100	100	100
Food (excl. fruit, vegetables)	13.49	20.17	18.39	17.47	15.03	14.59	12.82	12.51	12.09	11.02	10.10
Bread, cereals and pastry products	2.48	3.97	3.61	3.18	3.05	2.77	2.48	2.37	2.18	1.90	1.54
Vegetable oils and products	0.34	0.64	0.58	0.60	0.36	0.39	0.27	0.31	0.25	0.23	0.18
Meat, poultry and fish	3.46	6.31	6.05	5.48	4.10	4.08	3.14	2.97	2.92	2.28	1.72
Milk, milk products and eggs	2.58	3.88	3.52	3.16	3.02	2.77	2.60	2.40	2.34	2.04	1.87
Sugar and sugar products	0.56	0.88	0.83	0.76	0.61	0.62	0.57	0.49	0.49	0.44	0.36
Beverages	1.15	1.71	1.52	1.44	1.30	1.28	1.12	1.07	1.11	0.90	0.85
Meals away from home	1.88	1.02	0.99	1.59	1.51	1.63	1.57	1.86	1.89	2.30	2.84
Miscellaneous food products	1.04	1.77	1.29	1.26	1.09	1.04	1.06	1.05	0.90	0.94	0.76
Vegetables and fruit	3.45	5.30	4.97	4.47	4.00	3.81	3.31	3.24	3.02	2.80	2.36
Vegetables	1.37	2.33	2.19	1.89	1.60	1.50	1.26	1.25	1.17	1.08	0.85
Fruit, fresh	1.04	1.63	1.54	1.39	1.23	1.15	1.02	0.98	0.88	0.81	0.70
Processed vegetable products	0.63	0.89	0.80	0.71	0.66	0.75	0.63	0.62	0.58	0.55	0.49
Processed fruit products	0.40	0.45	0.44	0.48	0.51	0.40	0.41	0.40	0.38	0.35	0.33
Housing	23.65	21.75	24.37	24.48	25.94	25.98	24.23	24.90	23.40	22.31	21.34
Government taxes	0.22	0.07	0.04	0.09	0.10	0.05	0.19	0.47	0.14	0.36	0.33
Monthly rent	4.54	10.23	8.62	7.30	5.45	4.87	3.57	3.95	2.97	2.49	2.82
Housing services consumption	18.89	11.45	15.70	17.09	20.40	21.06	20.47	20.48	20.29	19.45	18.18
Dwelling, household maintenance	9.73	9.81	9.30	9.56	9.32	9.77	9.33	9.37	9.54	9.79	10.72
Electricity, fuel and water	3.68	5.20	4.75	4.43	4.22	4.23	3.83	3.52	3.23	3.05	2.71
Maintenance and renovation	1.21	1.00	0.84	1.24	1.00	1.11	1.16	1.07	1.20	1.32	1.59
Domestic help	1.65	0.34	0.33	0.71	0.81	1.04	1.31	1.56	1.93	2.41	3.21
Miscellaneous household articles	0.85	1.22	1.21	1.01	0.93	0.90	0.75	0.77	0.86	0.64	0.72
Municipal property taxes (Arnona)	2.35	2.06	2.16	2.18	2.36	2.49	2.29	2.45	2.32	2.37	2.48
Furniture, household equipment	4.70	4.28	4.32	4.71	4.99	4.21	4.89	4.26	4.64	5.32	4.81
Furniture	1.77	1.42	1.10	1.85	1.59	1.38	2.18	1.54	1.91	2.01	2.02
Household electrical equipment	1.74	2.03	2.11	1.73	2.02	1.70	1.65	1.58	1.54	1.97	1.48
Non-electrical equipment	0.41	0.35	0.52	0.35	0.49	0.37	0.32	0.40	0.38	0.46	0.41
Bedding and home decorations	0.78	0.48	0.58	0.77	0.89	0.76	0.74	0.73	0.81	0.88	0.90
Clothing and footwear	2.13	2.79	2.65	2.43	2.24	2.10	2.15	2.11	2.05	1.95	1.75
Clothing	2.17	2.79	2.67	2.46	2.25	2.11	2.17	2.12	2.10	1.98	1.86
Footwear	0.42	0.58	0.53	0.54	0.48	0.47	0.47	0.40	0.34	0.35	0.32
Health	4.92	4.01	4.80	4.68	5.05	4.34	4.70	4.86	5.30	5.28	5.23
Health insurance	1.05	0.67	0.72	0.82	0.98	0.97	1.07	1.14	1.20	1.20	1.19
Dental treatment	1.50	1.40	1.54	1.34	1.94	1.52	1.63	1.34	1.45	1.52	1.43
Expenditures on health services	2.37	1.94	2.54	2.52	2.12	1.85	2.00	2.38	2.65	2.56	2.60
Education, culture, entertainment	13.06	11.21	12.16	11.43	11.99	12.21	14.55	14.88	14.20	13.70	12.39
Education services	4.70	4.41	4.69	4.68	4.89	5.39	5.86	5.60	5.10	3.99	3.38
Newspapers, books and stationery	0.94	1.00	0.64	0.79	0.86	0.92	0.98	0.84	0.90	1.00	1.20
Culture and entertainment	7.42	5.80	6.84	5.96	6.25	5.90	7.71	8.45	8.19	8.70	7.81
Transport and communication	20.80	15.66	14.77	16.10	17.58	19.18	20.27	20.19	21.05	24.10	27.47
Public transport	1.04	2.14	1.60	1.71	1.44	1.40	1.08	1.01	0.73	0.59	0.35
Travel abroad	3.70	2.53	1.33	1.52	1.77	2.31	3.30	2.69	3.25	5.19	7.77
Expenditures on vehicles	11.29	5.58	6.70	7.28	9.30	9.69	10.89	11.56	12.38	14.22	15.65
Post, telephone and communication	4.77	5.42	5.15	5.60	5.07	5.78	5.01	4.94	4.69	4.09	3.70
Miscellaneous goods and services	3.60	4.42	3.72	4.11	3.36	3.34	3.26	3.27	4.33	3.35	3.42
Cigarettes, tobacco and accessories	0.37	0.94	0.60	0.61	0.54	0.44	0.35	0.32	0.29	0.23	0.09
Personal services and cosmetics	2.58	2.86	2.66	2.85	2.40	2.20	2.25	2.31	3.29	2.50	2.54
Jewellery, watches, wallets etc.	0.71	1.18	0.99	0.94	0.52	0.42	0.34	0.39	1.22	0.59	0.70

Appendix D: Transfer Matrix: Percentage of households belonging to Expenditure, Income and Monetary Income Deciles

The rows are net income per standard person deciles and the columns are expenditure per standard person deciles. Every column, like every row sums up to 10 and the sum of the whole table equals 100 percent. Each cell presents the percentage of households in each expenditure / net income decile. The last row and the first column present the number of persons in each decile.

The diagonal presents those who did not change their position when passing from income to expenditure. For example, in Table D1 2.9% of the population of households belong to the lowest decile in income and in expenditure, or 29% of the lowest decile did not change their position. Of all the population of households, 19.3% (sum of the diagonal) kept their position in the distribution. Those above the diagonal (39.3% of the whole population) consume at the level that is higher than their income. Those beneath (41.4%) consume at the level lower than their income.

Table D1: Percentage of households in Net Income per Standard Person and in Expenditure per Standard Person Deciles

# of persons (thousands) in each decile	Deciles of Net Income (percents of households)	Deciles of Expenditure (Percents of households)									
		1	2	3	4	5	6	7	8	9	10
750.2	1	2.9	2.1	1.7	1.2	0.9	0.4	0.4	0.2	0.2	0.0
813.1	2	2.3	1.7	1.5	1.7	1.0	0.7	0.5	0.3	0.2	0.1
699.4	3	1.4	1.5	1.5	1.2	1.2	1.0	0.8	0.8	0.4	0.2
641.5	4	1.3	1.1	1.6	1.3	1.2	1.2	0.8	0.7	0.5	0.3
637.9	5	1.0	1.2	1.2	1.5	1.1	1.2	0.9	0.9	0.5	0.5
599.7	6	0.6	1.1	0.8	1.1	1.1	1.3	1.3	1.2	1.1	0.5
587.1	7	0.3	0.8	0.6	0.8	1.4	1.5	1.7	1.1	1.2	0.7
559.6	8	0.2	0.3	0.7	0.7	1.0	1.1	1.5	1.8	1.3	1.4
510.8	9	0.1	0.2	0.3	0.4	0.7	1.1	1.2	1.8	2.0	2.2
470.9	10	0.0	0.0	0.1	0.1	0.4	0.6	0.9	1.2	2.5	4.1
		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
		737.8	667.3	673.4	667.2	649.9	635.3	615.3	594.9	538.9	490.5

Table D2: Percentage of households in Net Monetary Income per Standard Person and in Expenditure per Standard Person Deciles

# of persons (thousands) in each decile	Deciles of Net Income (percents of households)	Deciles of Expenditure (Percents of households)									
		1	2	3	4	5	6	7	8	9	10
815.5	1	3.5	2.0	1.4	1.1	0.7	0.5	0.4	0.2	0.2	0.0
633.4	2	2.7	2.3	1.9	1.1	0.8	0.4	0.3	0.3	0.2	0.1
725.5	3	1.4	1.5	1.6	1.6	1.3	1.0	0.5	0.6	0.3	0.1
619.5	4	1.1	1.3	1.3	1.7	1.1	1.0	0.9	0.7	0.6	0.3
621.8	5	0.6	1.1	1.1	1.4	1.4	1.4	1.2	0.9	0.5	0.4
633.0	6	0.4	0.9	1.1	1.0	1.2	1.4	1.2	1.2	0.8	0.8
599.2	7	0.2	0.6	0.8	1.0	1.3	1.3	1.7	1.4	1.2	0.5
587.8	8	0.1	0.2	0.5	0.5	1.0	1.2	1.6	1.8	1.7	1.4
548.0	9	0.1	0.1	0.2	0.4	0.8	1.0	1.4	1.8	2.1	2.1
486.8	10	0.0	0.0	0.1	0.1	0.3	0.6	0.8	1.1	2.6	4.2
		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
		737.8	667.3	673.4	667.2	649.9	635.3	615.3	594.9	538.9	490.5

Appendix E: Demographic Differences between the Lowest and the Highest Deciles,
by Decile Definition

Table E1: Group Percentages in the Lowest and the Highest Deciles, by Expenditure Per Standard Person and Income per Standard Person Decile Definition

	Lowest Decile		Highest Decile	
	Expenditure	Income	Expenditure	Income
Non-pensioners	83.8	84.7	80.3	80.9
Pensioners	16.2	15.3	19.7	19.1
Renters (3)	62.6	67.3	20.4	15.3
Mortgagors	15.8	9.3	29.2	32.3
No housing costs	21.6	23.4	50.4	52.4
Employed	49.5	36.1	78.7	83.4
Unoccupied	50.5	63.9	21.3	16.6
No children	40.1	37.0	72.8	75.5
Children	59.9	63.0	27.2	24.5
Age < 25	13.6	16.4	4.5	3.8
Age 26-34	22.6	25.2	17.5	15.4
Age 35-49	34.5	31.3	23.9	23.8
Age 50-64	12.7	12.9	35.0	38.8
Age > 65	16.6	14.2	19.0	18.3
Single Adults (above 65)	8.1	5.9	9.6	7.8
Lone parents	4.4	7.6	1.1	0.7
Couples with children	55.5	55.4	26.1	23.9
Couples without children (4)	21.6	18.7	45.0	51.0
Single adults (below the age of 65)	10.4	12.3	18.2	16.7
10 years or less of schooling	39.5	40.5	9.6	6.9
12 years of schooling	32.8	27.5	19.7	18.4
More than 12 years of schooling	27.7	32.1	70.7	74.7
Urban areas	97.9	97.2	91.7	93.0
Rural areas	2.1	2.8	8.3	7.0
1 adult in the household	22.8	25.8	28.9	25.1
2 adults in the household	54.9	55.7	49.3	49.3
3 adults in the household	11.9	10.4	13.1	17.4
4 and more adults	10.38	8.04	8.69	8.28
No earners in the household	50.5	63.9	21.3	16.6
One earner	38.3	32.2	34.1	31.3
Two earners	10.2	3.6	37.1	42.2
Three earners	0.7	0.1	5.5	7.9
Four Earners	0.4	0.2	2.1	2.1
No children	40.1	36.9	72.8	75.5
One child	12.3	12.5	13.4	13.4
Two children	11.8	14.3	9.4	6.7
Three children	12.9	13.4	2.7	3.9
Four and more children	23.0	23.0	1.6	0.6

The most significant differences are to be found between the lowest and the highest deciles, not between the decile definition method. Several points of interest are still presented: in the lowest expenditure decile there are relatively more mortgagors than in the lowest income decile, more employed, more persons of age 35-49, couples without children and more single adults aged 65 or more, more households with household head possessing a 12-years education, more families of 3 adults or more, and more childless families.

On the other hand, in the highest expenditure decile, there are relatively more renters than in the highest income decile, more unemployed, household heads of age 25-34, single adults and couples with children, households with household head of 10 or less years of schooling, rural households, households with only one adult, no or only one earner in the household and households with two children.

Appendix F: Summary Statistics for Monthly Inflation Rates (Using Democratic Weighting Scheme)

Date	Mean Inflation Rate (percents)	Standard Deviation	cv	min	max	Range	Interquartile Range	skewness	kurtosis
Feb-90	0.18	0.76	17.32	-4.04	2.43	6.47	0.89	-1.00	4.47
Mar-90	0.93	0.83	0.78	-9.65	13.28	22.93	0.69	-1.78	23.82
Apr-90	2.39	1.28	0.29	-3.01	31.20	34.20	1.13	5.20	76.18
May-90	1.47	0.81	0.30	-2.89	10.48	13.37	0.72	1.97	16.55
Jun-90	0.61	0.97	2.52	-10.24	3.62	13.85	0.88	-2.03	12.74
Jul-90	2.24	0.99	0.20	-3.86	11.31	15.17	1.11	1.15	9.12
Aug-90	1.46	0.86	0.35	-3.70	5.82	9.53	1.18	0.02	3.76
Sep-90	1.93	0.95	0.24	-2.57	8.42	10.99	1.23	0.38	4.13
Oct-90	1.89	0.77	0.17	-2.35	8.10	10.46	0.76	0.57	8.57
Nov-90	1.27	0.85	0.45	-3.39	9.00	12.39	0.91	0.35	8.11
Dec-90	0.24	0.56	5.51	-4.25	3.37	7.62	0.60	-0.42	6.71
Jan-91	2.62	1.49	0.32	-2.70	18.22	20.92	1.69	1.82	10.81
Feb-91	0.16	0.58	13.36	-4.53	6.63	11.16	0.61	0.75	14.91
Mar-91	0.96	0.86	0.81	-5.88	11.31	17.20	0.83	1.11	9.84
Apr-91	2.39	1.31	0.30	-0.19	14.38	14.57	1.59	1.37	6.30
May-91	1.99	0.94	0.23	-6.08	9.57	15.65	0.95	0.78	6.99
Jun-91	1.86	0.72	0.15	-4.17	7.05	11.22	0.78	0.46	7.99
Jul-91	2.52	1.61	0.41	-6.10	11.42	17.53	2.08	0.88	4.35
Aug-91	2.21	1.17	0.28	-3.61	12.35	15.96	1.51	0.76	4.91
Sep-91	1.29	0.71	0.30	-3.08	5.82	8.90	0.79	-0.35	5.98
Oct-91	0.60	1.19	3.92	-5.48	6.69	12.16	1.64	-0.09	3.27
Nov-91	0.12	0.73	34.73	-4.67	3.04	7.71	0.68	-1.91	9.74
Dec-91	0.20	0.56	7.59	-2.60	4.96	7.56	0.60	-0.20	5.59
Jan-92	0.10	0.89	78.22	-4.09	9.83	13.91	1.07	0.54	9.37
Feb-92	0.79	0.62	0.61	-2.86	6.57	9.42	0.67	1.07	7.89
Mar-92	1.38	0.97	0.50	-2.04	25.23	27.28	1.01	3.70	60.62
Apr-92	1.52	1.35	0.80	-10.24	17.72	27.96	1.35	1.37	16.05
May-92	-0.31	1.28	16.87	-12.68	3.44	16.12	1.21	-2.35	14.16
Jun-92	0.08	0.91	117.96	-6.96	2.67	9.64	0.97	-1.54	8.32
Jul-92	0.58	0.83	1.99	-5.88	7.70	13.58	0.81	-0.34	8.67
Aug-92	0.54	0.47	0.75	-2.89	3.32	6.21	0.62	-0.11	4.31
Sep-92	1.04	0.86	0.69	-2.68	10.33	13.01	0.93	1.35	10.52
Oct-92	0.62	0.84	1.83	-4.95	5.56	10.52	0.99	-0.46	5.85
Nov-92	0.79	0.77	0.94	-2.16	4.76	6.92	0.77	1.28	5.40
Dec-92	1.14	0.55	0.23	-0.62	4.15	4.77	0.64	1.02	4.64
Jan-93	0.87	0.97	1.26	-5.03	5.15	10.18	1.07	-0.38	5.59
Feb-93	1.01	0.58	0.33	-2.62	3.54	6.16	0.67	0.09	4.71
Mar-93	1.51	0.86	0.33	-2.51	20.47	22.98	1.02	2.13	35.78
Apr-93	1.24	1.01	0.67	-7.66	14.94	22.60	0.88	1.73	19.64
May-93	0.24	0.63	6.76	-6.24	2.36	8.60	0.64	-2.45	16.76
Jun-93	0.24	0.62	6.69	-5.32	13.77	19.09	0.54	1.70	51.50
Jul-93	0.23	0.94	16.85	-2.78	14.10	16.88	0.90	2.93	24.60
Aug-93	0.92	0.52	0.32	-3.94	7.16	11.10	0.58	0.92	9.76
Sep-93	0.71	0.61	0.74	-2.21	4.93	7.13	0.69	0.86	6.50
Oct-93	1.33	0.52	0.15	-1.02	7.15	8.18	0.59	1.25	10.44
Nov-93	0.79	0.42	0.29	-2.43	3.44	5.87	0.44	-0.70	8.00
Dec-93	0.60	0.54	0.80	-4.29	2.43	6.72	0.50	-1.81	11.34
Jan-94	0.61	0.67	1.22	-3.43	7.59	11.02	0.89	-0.02	7.44
Feb-94	0.62	0.39	0.39	-2.51	4.17	6.68	0.44	-0.39	7.58
Mar-94	1.07	0.75	0.50	-1.58	11.63	13.21	0.99	0.63	8.57

Date	Mean Inflation Rate (percents)	Standard Deviation	cv	min	max	Range	Interquartile Range	skewness	kurtosis
Apr-94	1.74	1.02	0.34	-14.21	11.18	25.39	0.99	-1.65	30.42
May-94	1.04	0.53	0.26	-2.78	4.52	7.30	0.56	-0.49	6.72
Jun-94	1.31	0.52	0.16	-3.48	5.49	8.97	0.63	-0.34	8.35
Jul-94	1.00	0.90	0.81	-10.12	15.85	25.97	0.95	2.20	33.95
Aug-94	1.01	0.64	0.40	-3.83	7.63	11.45	0.65	0.37	9.57
Sep-94	1.31	0.66	0.25	-5.08	5.07	10.15	0.68	0.01	8.04
Oct-94	1.16	0.77	0.44	-3.32	6.41	9.73	0.78	-0.05	7.05
Nov-94	1.17	0.82	0.49	-4.06	9.07	13.13	0.75	0.22	9.77
Dec-94	0.76	0.41	0.29	-1.74	3.52	5.25	0.46	0.12	6.71
Jan-95	0.10	0.91	84.11	-9.96	6.33	16.29	0.97	-1.36	8.78
Feb-95	0.23	0.43	3.41	-2.93	2.68	5.61	0.49	-1.03	6.64
Mar-95	-0.09	0.56	38.49	-4.28	12.63	16.92	0.53	1.97	45.24
Apr-95	0.84	0.79	0.88	-7.66	8.60	16.26	0.73	0.78	15.33
May-95	0.84	0.68	0.65	-4.13	7.30	11.43	0.63	-0.64	9.83
Jun-95	0.25	0.62	5.99	-6.36	2.40	8.76	0.54	-2.38	13.45
Jul-95	0.30	0.80	7.12	-3.41	18.47	21.88	0.45	6.51	100.19
Aug-95	1.27	0.58	0.21	-1.86	6.67	8.53	0.70	0.39	5.55
Sep-95	0.92	0.60	0.42	-5.27	4.16	9.43	0.62	0.25	8.03
Oct-95	0.87	0.65	0.56	-3.78	6.96	10.74	0.53	-0.38	12.01
Nov-95	0.67	0.40	0.36	-2.17	6.74	8.90	0.41	0.79	21.55
Dec-95	1.04	0.53	0.26	-2.56	3.79	6.35	0.61	-0.13	4.66
Jan-96	1.04	0.69	0.44	-10.38	3.41	13.79	0.78	-2.12	25.11
Feb-96	0.86	0.46	0.28	-3.50	3.25	6.74	0.56	-0.50	5.85
Mar-96	0.99	0.54	0.29	-0.87	9.03	9.90	0.57	2.37	21.27
Apr-96	1.55	0.78	0.26	-9.29	9.61	18.90	0.72	-0.18	22.63
May-96	1.55	0.71	0.21	-3.64	7.09	10.73	0.76	0.16	7.30
Jun-96	0.80	0.69	0.74	-6.57	3.98	10.55	0.59	-2.19	15.08
Jul-96	0.37	0.74	3.93	-2.81	15.06	17.87	0.62	4.19	56.57
Aug-96	0.30	0.53	3.02	-3.01	6.60	9.61	0.51	1.97	16.11
Sep-96	0.44	0.52	1.37	-4.55	4.08	8.63	0.56	-0.32	9.12
Oct-96	0.67	0.56	0.70	-2.97	6.34	9.31	0.52	0.33	9.87
Nov-96	0.57	0.41	0.51	-3.53	3.78	7.31	0.42	-0.42	9.75
Dec-96	0.79	0.52	0.44	-2.20	11.92	14.12	0.47	3.79	57.23
Jan-97	0.51	0.50	0.94	-3.69	5.56	9.25	0.55	-0.07	9.90
Feb-97	1.14	0.54	0.23	-1.41	7.63	9.04	0.61	1.08	8.76
Mar-97	0.91	0.37	0.16	-0.64	7.39	8.03	0.39	1.65	20.35
Apr-97	0.79	0.69	0.77	-9.92	5.80	15.72	0.54	-0.95	29.05
May-97	0.48	0.59	1.47	-3.60	7.53	11.13	0.61	2.07	17.84
Jun-97	1.20	0.67	0.32	-5.59	4.12	9.71	0.65	-1.61	14.11
Jul-97	0.76	1.07	1.98	-5.57	17.34	22.91	1.03	1.77	25.39
Aug-97	0.41	0.48	1.36	-5.01	3.79	8.80	0.49	-0.48	11.57
Sep-97	-0.04	0.58	212.63	-5.64	3.98	9.62	0.64	-0.17	8.11
Oct-97	0.97	0.40	0.17	-0.97	4.34	5.32	0.46	0.72	8.02
Nov-97	-0.32	0.66	4.20	-4.92	3.97	8.89	0.74	-0.99	7.85
Dec-97	-0.20	0.44	4.68	-2.35	7.64	9.99	0.41	2.91	32.98
Jan-98	0.37	0.43	1.35	-4.35	4.62	8.98	0.49	-1.05	11.57
Feb-98	0.02	0.34	243.54	-3.92	2.21	6.13	0.36	-1.38	12.42
Mar-98	-0.22	0.29	1.79	-2.80	2.43	5.22	0.30	-0.31	9.77
Apr-98	1.27	0.83	0.43	-8.45	13.30	21.75	0.76	0.74	19.24
May-98	0.18	0.78	19.83	-2.56	9.48	12.04	0.76	2.46	18.48
Jun-98	0.31	0.70	5.04	-10.40	4.29	14.69	0.47	-2.20	22.79
Jul-98	0.05	0.46	71.29	-2.64	3.93	6.58	0.49	0.70	8.68
Aug-98	0.57	0.64	1.28	-2.56	13.51	16.07	0.49	4.85	66.32

Date	Mean Inflation Rate (percents)	Standard Deviation	cv	min	max	Range	Interquartile Range	skewness	kurtosis
Sep-98	1.48	0.73	0.24	-5.71	6.20	11.91	0.85	-0.10	7.45
Oct-98	3.22	0.92	0.08	-1.22	11.99	13.21	1.02	1.07	6.72
Nov-98	1.10	0.75	0.47	-3.41	5.41	8.82	0.89	-0.38	5.25
Dec-98	0.00	0.48	16258.87	-2.90	4.13	7.04	0.61	0.40	4.80
Jan-99	-0.59	1.07	3.24	-3.32	17.42	20.74	0.84	5.27	61.23
Feb-99	-0.75	0.51	0.47	-2.82	1.46	4.28	0.66	-0.34	3.40
Mar-99	-0.21	0.34	2.60	-1.98	2.27	4.25	0.39	0.30	5.56
Apr-99	0.07	0.82	127.53	-11.79	8.00	19.79	0.76	-0.85	26.82
May-99	0.53	0.40	0.58	-2.07	4.52	6.59	0.41	0.91	10.56
Jun-99	0.37	0.51	1.85	-4.39	4.33	8.71	0.56	-0.37	8.78
Jul-99	0.42	0.59	2.01	-3.30	3.79	7.09	0.66	-0.02	5.34
Aug-99	0.65	0.58	0.78	-4.97	4.62	9.59	0.62	-1.38	13.84
Sep-99	0.69	0.60	0.76	-4.40	4.32	8.71	0.66	-0.79	8.26
Oct-99	0.56	0.72	1.66	-5.32	5.55	10.87	0.56	-1.54	13.27
Nov-99	-0.23	0.40	3.09	-2.26	3.37	5.62	0.44	1.20	10.99
Dec-99	-0.08	0.49	37.80	-2.88	4.65	7.54	0.56	0.51	6.57
Jan-00	-0.62	0.60	0.93	-3.14	14.48	17.61	0.55	5.41	102.90
Feb-00	-0.43	0.36	0.68	-2.54	1.93	4.47	0.43	0.16	4.55
Mar-00	-0.23	0.42	3.25	-2.18	4.58	6.76	0.55	0.71	7.73
Apr-00	0.13	0.91	45.30	-4.92	8.74	13.66	0.68	2.74	15.73
May-00	1.07	0.78	0.53	-2.81	8.50	11.32	0.81	0.68	8.50
Jun-00	0.41	0.61	2.15	-4.54	3.80	8.34	0.62	-1.20	8.84
Jul-00	0.17	0.52	9.40	-5.51	4.21	9.72	0.50	0.54	10.54
Aug-00	-0.38	0.56	2.11	-4.21	3.63	7.84	0.62	-0.40	6.08
Sep-00	-0.48	0.69	2.06	-5.89	4.53	10.42	0.65	-0.71	8.93
Oct-00	0.42	0.45	1.14	-3.24	6.04	9.28	0.46	1.45	14.97
Nov-00	0.08	0.71	83.94	-6.07	3.68	9.76	0.43	-2.60	15.21
Dec-00	-0.06	0.28	20.89	-1.95	1.80	3.74	0.34	-0.50	4.93
Jan-01	-0.57	0.44	0.58	-3.02	1.38	4.41	0.53	-0.36	4.63
Feb-01	0.00	0.37	209218.10	-2.54	5.52	8.06	0.40	0.63	17.71
Mar-01	0.29	0.46	2.45	-5.58	3.74	9.32	0.48	-1.50	15.61
Apr-01	0.78	0.72	0.83	-1.82	13.76	15.59	0.55	4.04	42.20
May-01	0.49	0.50	1.05	-1.70	5.30	7.01	0.52	1.24	10.00
Jun-01	0.23	0.48	4.45	-2.53	12.12	14.64	0.36	6.21	110.94
Jul-01	0.46	0.73	2.49	-3.73	5.46	9.19	0.83	0.77	6.57
Aug-01	0.39	0.39	0.98	-2.24	4.42	6.65	0.43	0.08	9.34
Sep-01	0.18	0.51	7.81	-5.71	5.17	10.87	0.48	-1.37	14.21
Oct-01	0.21	0.55	6.76	-5.74	4.75	10.50	0.50	-0.60	10.96
Nov-01	-0.56	0.61	1.22	-5.65	3.62	9.27	0.46	-1.90	13.40
Dec-01	-0.11	0.26	5.57	-4.56	2.76	7.32	0.27	-1.38	28.40
Jan-02	1.13	0.61	0.29	-1.75	6.17	7.92	0.74	0.22	4.21
Feb-02	0.96	0.61	0.40	-2.67	3.19	5.87	0.74	-0.13	4.01
Mar-02	0.55	0.49	0.79	-3.26	11.62	14.88	0.51	1.41	40.12
Apr-02	1.55	0.73	0.22	-5.67	12.54	18.20	0.64	2.74	24.74
May-02	0.98	0.50	0.26	-3.05	4.58	7.63	0.52	0.10	7.27
Jun-02	1.24	0.48	0.15	-2.52	3.91	6.43	0.48	-1.19	9.42
Jul-02	0.71	0.70	0.96	-6.09	5.47	11.56	0.67	-0.25	9.73
Aug-02	-0.41	0.64	2.45	-2.85	4.52	7.37	0.71	0.56	5.12
Sep-02	0.46	0.59	1.64	-5.70	7.46	13.16	0.55	-0.74	11.47
Oct-02	0.74	0.74	1.00	-4.89	14.77	19.66	0.59	-0.14	33.62
Nov-02	-0.90	0.40	0.20	-3.71	4.50	8.21	0.48	0.62	10.76
Dec-02	-0.32	0.37	1.39	-2.82	3.32	6.13	0.40	0.53	8.77
Jan-03	0.38	0.67	3.05	-3.75	17.23	20.98	0.60	3.68	55.09

Date	Mean Inflation Rate (percents)	Standard Deviation	cv	min	max	Range	Interquartile Range	skewness	kurtosis
Feb-03	0.45	0.36	0.64	-2.39	3.63	6.02	0.41	-0.27	7.46
Mar-03	0.26	0.46	3.19	-12.89	3.36	16.26	0.43	-4.34	108.04
Apr-03	-0.42	1.04	6.12	-2.54	15.22	17.76	0.80	3.29	23.26
May-03	-0.54	0.84	2.39	-4.75	8.06	12.81	0.82	1.54	13.13
Jun-03	-0.83	0.77	0.88	-9.55	2.95	12.50	0.79	-1.58	13.68
Jul-03	-0.72	0.68	0.90	-8.39	4.52	12.90	0.58	0.25	12.65
Aug-03	0.21	0.46	4.75	-4.47	4.98	9.45	0.50	0.37	10.07
Sep-03	-0.33	0.67	4.23	-8.11	3.58	11.69	0.71	-1.28	9.96
Oct-03	-0.06	0.46	52.45	-4.27	3.44	7.71	0.50	-0.03	6.03
Nov-03	-0.04	0.94	574.30	-9.36	3.19	12.55	0.46	-3.88	24.58
Dec-03	-0.27	0.35	1.69	-2.15	3.28	5.44	0.36	1.35	12.33
Jan-04	-0.26	0.35	1.91	-3.82	3.68	7.50	0.38	-0.20	8.34
Feb-04	0.27	0.32	1.41	-2.92	1.79	4.72	0.35	-1.05	9.15
Mar-04	-0.05	0.39	58.25	-2.28	8.86	11.15	0.40	1.83	40.53
Apr-04	1.02	0.99	0.95	-2.30	15.90	18.21	0.47	4.26	31.90
May-04	0.45	0.42	0.89	-4.28	10.58	14.86	0.39	3.64	79.17
Jun-04	-0.09	0.58	44.11	-10.19	3.85	14.04	0.51	-2.14	28.62
Jul-04	-0.25	0.48	3.61	-2.73	3.60	6.34	0.43	0.99	8.74
Aug-04	0.27	0.41	2.21	-2.67	6.31	8.98	0.38	1.49	21.81
Sep-04	-0.20	0.47	5.34	-7.75	2.27	10.03	0.37	-2.77	28.27
Oct-04	0.05	0.46	84.26	-2.81	9.25	12.06	0.49	2.93	41.94
Nov-04	-0.08	0.70	79.48	-6.78	3.57	10.35	0.48	-2.90	19.08
Dec-04	0.11	0.75	43.29	-1.92	8.16	10.08	0.79	1.59	9.29
Jan-05	-1.08	0.54	0.25	-4.24	2.51	6.75	0.63	-0.01	5.26
Feb-05	0.26	0.37	2.02	-2.33	2.59	4.92	0.42	0.10	5.40
Mar-05	-0.29	0.37	1.60	-5.81	3.68	9.48	0.36	-1.39	18.62
Apr-05	0.58	0.70	1.46	-4.07	6.72	10.79	0.72	1.10	8.86
May-05	0.31	0.39	1.64	-2.10	4.00	6.10	0.36	0.97	9.90
Jun-05	0.01	0.65	8705.22	-7.63	3.37	10.99	0.70	-0.86	8.85
Jul-05	1.16	0.82	0.50	-2.36	6.98	9.34	0.90	1.21	8.04
Aug-05	0.34	0.61	3.23	-10.51	5.57	16.08	0.59	-1.70	32.20
Sep-05	0.17	0.69	16.99	-7.17	5.80	12.97	0.66	-0.93	11.00
Oct-05	0.70	0.43	0.38	-3.17	5.80	8.96	0.48	0.60	11.67
Nov-05	0.23	0.83	12.50	-5.19	3.94	9.13	1.03	-1.11	5.20
Dec-05	-0.24	0.46	3.77	-4.02	3.01	7.03	0.54	-0.49	6.73