Revolution and redistribution in Iran: how the poor have fared 25 years later

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Abstract

Despite nearly three decades of revolutionary government rule in Iran poverty and inequality remain the central issues of political debate in Iran. Public dissatisfaction, as demonstrated by the electoral success of the populist candidate in the 2005 presidential election, has been widely attributed to rising poverty and inequity. In this paper I use household survey data to describe the trends in poverty and inequality for the last three decades. The evidence shows that poverty, having substantially declined in recent years, is quite low by international standards and in comparison to pre-revolution years. Inequality improved significantly immediately after the Revolution but has remained relatively stable during the last 15 years. Significantly, poverty sharply declined and inequality decreased somewhat in the five years leading up to the election. Increased welfare of the poor over the period is also evident in access to basic services, such as electricity and safe water, as well as in ownership of household appliances. The wide gap between the evidence presented here, which shows improvement in the welfare of the poor, and popular sentiments in Iran, which indicate worsening poverty and inequality, raises important questions about the political economy of redistribution in Iran. I suggest that in the context of a distributive economy such as Iran's, in which wealth accumulation is seen to depend more on political access than individual productivity, more subjective feelings of envy and fairness may matter more than objective indicators of poverty and inequality.

1 Introduction

The unexpected landslide victory of Mahmoud Ahmadinejad in Iran's presidential election in 2005 revealed the voters' deep concern with poverty and economic injustice. His populist platform promising a more equitable distribution of the oil wealth–"take the oil money to people's dinner table"–appears to have resonated more widely with voters than calls for democracy from his better known reformist rivals. Since his election, president Ahmadinejad has moved quickly to solidify his political base into a wider social movement which is being described as "the second wave" of the Islamic Revolution. Many observers attribute Ahmadinejad's ascent, in the words of one commentator, to "frustration with widening income gaps" and widespread poverty which "propels Iran toward extremist politics."[1] The shock of Ahmadijezad's election has shifted conventional wisdom on the roots of political discontent in Iran away from lack of democracy to poverty and inequality. As a general explanation of the rise of populism the poverty and inequality thesis has good claims to empirical support, but in the case of Iran, where no systematic evidence exists to support its premise. There are no firm basis for claiming that the lot of the poor has deteriorated in recent years, nor that the Revolution has failed its most ardent supporters–the poor.

To better understand the roots of economic discontent in present day Iran, and by implication the stability of the Islamic regime, one must first be able to answer questions such as these: Do the poor have reason to regret the Revolution itself? Are they worse off twenty five years after it succeeded and showered them with pro-poor rhetoric? Do they have reason to feel that the economic reforms of the 1990s made them worse off or left them behind? Were they better off during the early years of the Revolution when populist policies prevailed? Did the most recent oil boom of the 2000-04 not benefit them at all? In this paper I examine the evidence on poverty, inequality, and the poor's access to basic services, such as electricity and safe water, in an attempt to provide to provide the basic

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[1] Afshin Molavi, *New York Times*, November 3, 2005. See also Michael Ignatieff, "Iranian lessons," *New York Times*, July 17, 2005; Abbas Milani, "Regime change", *Wall Street Journal*, October 31, 2005; Amuzegar (2005), Ghamari (2005), and (Sazgara 2006).

data that are needed to answer these questions. I rely almost exclusively on survey data on household and individual expenditures for a thirty year period extending from before the 1979 Revolution to 2004. I compare poverty rates and the degree of inequality before and after the Revolution, and show that according to these indicators the poor are better off now than they have ever been. Populist economic policies of the 1980s failed to shield them from the ravages of the war and collapse of oil income in the 1980s. Contrary to post-election conventional wisdom, the poor gained most during the last 15 years of economic reform since 1989 when poverty rates declined significantly without an increase in inequality. In fact, during 1990-2004, average per capita expenditures for the lowest income decile grew faster than than the highest decile. In addition, I show that throughout the period after the Revolution access to basic services by the poor has improved significantly raising their quality of life to its highest level.

The evidence I present does not directly address the role of economic factors in Iran's sudden shift toward populist politics in 2005. However, by challenging the notion that poverty and inequality have been on the rise, my findings cast doubt on the popular thesis that explains recent political change in Iran as a consequence of economic policies that favored market reform at the expense of the poor. No doubt the improvements in welfare recorded here are closely linked to improvements in health, fertility, and education outcomes, which are themselves the result of decisions made by millions of families, aided and directed by government decisions, and which have been documented elsewhere (Abbasi et al. 2002, Hoodfar and Assadpour 2000, Salehi-Isfahani 2005).

The main contribution of this paper is to provide a solid statistical foundation for understanding welfare changes in the last thirty years. There are a few published studies of poverty and income distribution available in English, but none that cover the last ten years. Mehran (1975) and Pesaran (1976) analyze the distribution of income in the 1970s, and Behdad (1989) and Nowshirvani and Clawson (1994) in the 1980s. Assadzadeh and Paul (2004) analyze changes in poverty during 1984-1993, but there are no studies to my

knowledge of the extent of poverty for the period before the Revolution. There are a number of papers in Persian on poverty and inequality, but because they employ varying methodologies and reaches widely different conclusions, they have failed to present us with a consistent picture for the post Revolution period. The government which collects and publishes an enormous amount of survey data, such as those used in this paper, has not measured or tracked poverty systematically. It has only recently started to publish an official poverty line. As a result, widely varying poverty rates are quoted inside and outside Iran inhibiting the development of a useful public debate in Iran.[2]

Learning the trends in poverty and inequality are important for understanding the roots of the revival of populist politics in Iran, but it also serves a broader purpose. The Islamic Revolution was founded on the principle of improving the lot of the poor.[3] Its leader, Ayatollah Khomeini, declared that the Islamic government belonged to the disinherited (*mostazafin*) and the barefooted (*paberehnegan*), and his pronouncements raised expectations for large scale redistribution (Saeidi 2001). After the war with Iraq, many years of economic and political reform have put distance between Iran's politics and its populist roots, but Khomeini's populist message has survived and, under Ahmadinejad, is seeking dominance again. Is the return to populism the result of the failure of the Revolution to deliver on its promises to the poor? The evidence I present suggests that, as just noted, the Revolution has so far delivered on its promises to aid the poor, in that the poor are much better off now than they were 30 years ago despite changes in policies and priorities. The poverty rate (defined as the proportion of individuals under $2 per day) has been in the single digits in the last several years, which is quite low by the standards of developing countries, and one-eighths its rate before the Revolution. This should surprise many who claim that per capita incomes were much higher in the 1970s compared to now. Comparisons of

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[2]See, for example, Raisdana et al. (2000) and Amuzegar (2005). Published poverty rates in official sources in English also vary widely, ranging from 7.2% in World Bank (2005), to 20% in United Nations (2003), and to 40% in Central Intelligence Agency (2005).

[3]The Constitution of the Islamic Republic of Iran is quite explicit in committing the government to provide for the poor. Article 29 considers it a person's right to have access to "social protection in retirement, unemployment, old age, disability, . . . , which the government is committed to provide."

pre- and post-Revolution living standards, a favorite pastime for middle class Iranians, has at times produced rather exaggerated claims of economic decline in print.[4] In fact, by 2004, per capita consumption had surpassed its level in the 1970s and GDP per capita was the same as in 1975. The fact that poverty has declined without significant increase in GDP per capita is evidence of improvement in the relative standing of the poor if not of overall equality.

Shifting priorities and changing policies during the nearly two and a half decades of Islamic rule has made it difficult to conclude, for voters as well as for researchers, how to assign credit for gains by the poor. The Islamic revolution itself could be a reason for decline in poverty. The overthrow of monarchy in 1979 happened with enough force to disturb existing social and economic relations. Wide ranging expropriation and nationalization in the name of the poor helped qualify the 1979 change of regime as a social revolution.[5] Pro-poor policies such as rural electrification and rationing of a wide range of commodities were implemented during the first decade of the Revolution, in part to help mobilize large numbers of volunteers, mostly from poorer neighborhoods, to fight in the war with Iraq. Direct assistance to the poor through a network of semi-public charities, the largest of which is the Komiteh Emdad, was also effective in poverty reduction (Esfahani 2005). Perhaps the most lasting influence of the Revolution has been to move the Iranian social contract closer to the special brand of Middle Eastern populism which Yousef (2004) has called the "interventionist-redistributive social contract" (see also World Bank 2004). In terms of benefits for the poor, though there were some immediate improvements in poverty (see below) and the distribution of income (Behdad 1989), there is little evidence that the Revolution improved the lot of the poor during its first decade (Nowshirvani and Clawson

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[4]According to one report, "in real terms, Iranians earn *one-fourth* of what they did earn [before the 1979 Revolution]" (emphasis added), Afshin Molavi, "Economic Ills Fuel Iranian Dissent," *The Washington Post,* July 8, 2003, A. 13. Another report lowers the decline to one-third, "Today, real per capita income is a third of what it was before the Revolution" (Molavi 2004), and still another account lowers it to one-half, "income today is less than half the prerevolutionary level." (Sazgara 2006)

[5]For a description of expropriation and interventionist policies in the early years of the Revolution see, Behdad (1989).

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1994).

Second, in addition to the Revolution itself, the credit for poverty reduction could go to 16 years of economic reform during the second and third decades of Revolution, during the Rafsanjani (1989-1997) and Khatami (1997-2005) administrations. The reforms rolled back certain policies of the early years of the revolution, specifically dismantled the rationing system, but stopped short of reducing the considerable level of social protection offered through subsidies and the labor market. These reforms encouraged private enterprise, but failed to significantly privatize the economy. In particular, they did not affect the semi-public agencies that provide social assistance to the poor that sprang up after the Revolution. But perhaps the most effective anti-poverty program of the Rafsanjani administration was the ambitious rural health and family planning program, which has earned the regime high marks from international institutions (Hoodfar and Assadpour 2000).

The proposition that market reforms have increased poverty fails to find any support in the data. As we see below, the overall trend in poverty has been downward since the reforms began under the first Rafsanjani adminstration in 1989 and, despite some short term fluctuations, reached its lowest level in 2004 when the last reform government was still in office. Yet critics of pro-market economic policies consider the return to populist politics of the early years of the Revolution as evidence of the failure of such policies to achieve the Revolution's objective of economic justice (Ghamari 2005). The reformists are on the defensive on both political and economic fronts and rethinking their main strategic decision to place democratic reforms objectives ahead of economic justice. In the meantime, populist economic policies threaten to undo liberal market reforms of the last 15 years.[6]

Finally, oil income might have played a key role in reducing poverty. To start with, years of rapid growth in the last two decades have coincided with rising oil prices and revenues. Oil-induced growth has the potential to lower poverty even without increase in

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[6]A case in point is the liberalization of the interest rate and private banks. In April 2006, the Parliament passed a law that would impose an interest rate ceiling on all bank lending and borrowing, shortly after it passed a budget that is expected to raise inflation from its current 16% to over 20%. According to the law, which is yet to be ratified by the Guardian Council, interest rates would be capped at 9 percent by 2009.

wages because oil income accrues to government which can spend it in on poverty reduction programs such as food subsidies or direct transfers. Interestingly, the most dramatic decline in poverty happened during the oil boom of 2000-05.

The plan of the paper is as follows. The next section discusses the trends in national output per head and in personal incomes and expenditures. This section uses widely available macroeconomic data and household survey data to show that economic well being has, on average, been restored to its pre-Revolution level. This finding provides the context for comparisons of poverty and inequality in later sections. Section 3 provides an international comparison of poverty and inequality to show that Iran's position relative to its peers is quite favorable. Low poverty rates and average inequality rates question the a direct link between Iranian populism and economic injustice as it has been argued for Latin American countries. Section 4 discusses the trend in poverty, and section 5 traces the same for inequality. Section 6 shows the extent of access to basic services such as safe water and electricity, and ownership of home appliances. Section 7 discusses the implications of the findings in view of the importance of distributional issues in Iranian politics.

2 The rise and fall of the standard of living in Iran

The 1979 Revolution broke a twenty-year long period of rising living standards, making the post-Revolution economic decline seem like an unprecedented disaster. During 1960-77, GDP per capita grew at 6.6 percent per year, allowing it to treble in just one generation.[7] By 1988, after the post-Revolution chaos, the 1980-88 war with Iraq, and the oil price collapse of 1986 had worked their way through the economic system, GDP per capita was only one-half of its 1977 level. By 2004, fifteen years of economic growth following the end of the war with Iraq in 1988 had brought incomes back to their pre-Revolution peak, but the memory of the harsh times continues to haunt many Iranians.

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[7]I use a single Georgian calendar year to refer to the Iranian year which begins on March 21 of that year and ends on March 20 of the following year.

Figures 1 and 2 depict the rise and fall of incomes during the 1955-2004 period.[8] As these figures show, economic decline came in at least two stages, marked by different but closely timed events. First came the disruptions following the 1979 Revolution itself. These began with worker strikes in 1978 and continued for several years afterwards with nationalizations of banks and large enterprizes and disruptions in worker-management relations (Bayat 1987, Behdad 1989, Amuzegar 1993). A year and a half later came the Iraqi invasion of Iran, which lasted for eight years and wrecked the local economy in south-western Iran, caused major damage to productive infrastructure in other places in the country, and disrupted oil production and exports. Finally, the oil price collapse of 1986 reduced the price of Iran's main export to one-third, effectively ending the oil price boom that had started a dozen years earlier in 1973. According to all three series, per capita GDP reached its peak before the Revolution in 1976, at $7976 international dollars (WDI series, 2000 prices).[9] By the end of the war in 1988, it had fallen to $4156, a decline of 48 percent compared to its peak in 1976 and about where it had stood twenty years earlier. By 2004, economic growth which started after the end of the war had brought GDP per capita back to $6983, which is where it was in 1975 according to WDI series.

From the viewpoint of the national economy, the extent of economic decline is breathtaking, especially considering the rapid pace of growth that it reversed (Figure 1). Reversals of fortune of this magnitude in such a short period are rare in modern history.However, from the viewpoint of private consumption (Figure 1) or household income and expenditures

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[8] Figure 1 uses national income data from three sources, Penn World Tables (Summers, Heston, and Aten 2002), World Development Indicators (WDI) World Bank (2005), and the Central Bank of Iran (CBI). The first two series correct for differences in the cost of living between Iran and the United States by using Purchasing Power Parity (PPP) exchange rates. They are both expressed in constant prices (1996 for Penn and 2000 for WDI). GDP per capita and private consumption which are from CBI are in constant 1997 rials. The WDI and CBI series track each other very closely, while the Penn series shows higher GDP per capita in the 1990s. Figure 2 is based on survey data. See Tables 6 and 7 in Appendix B for the data used to produce these graphs.

[9]To compare the actual levels indicated for 1976 by the different series we can convert them all to 2000 prices using PPP inflation rates in World Bank (2005): $6313 for Penn, $7,976 for WDI, and $8072 for CBI (7,051,200 rials divided by the PPP exchange rate of 917 for 1997 and multiplied by 1.05 inflation factor between 1997-2000).

Figure 1: GDP per capita according to different sources of data, 1955-2004

GDP and private consumption per capita
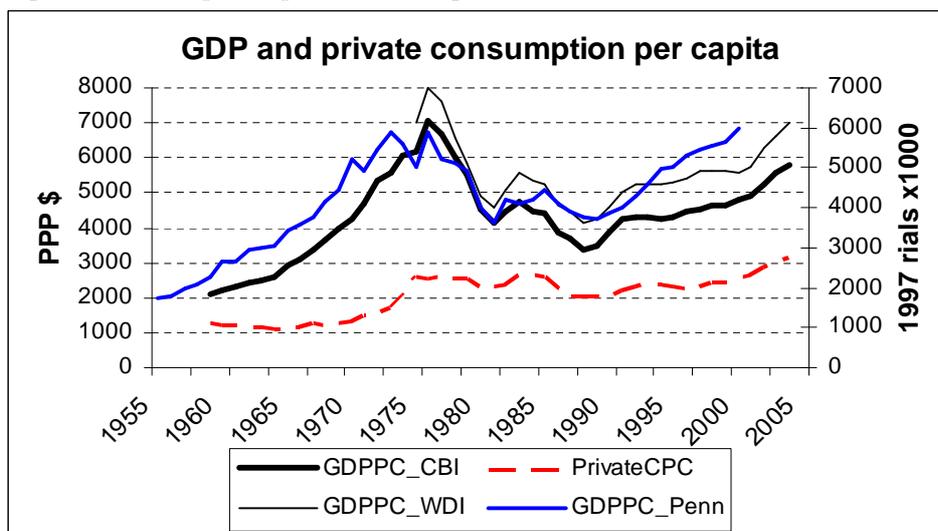
Notes: Left axis: GDPPC_Penn (GDP per capita, RGDPCH, Penn World Tables Mark 6.1, 1996 PPP US dollars), and GDPPC_WDI (World Bank, 2000 PPP US dollars). PPP dollars correct for differences in purchasing power between Iran and the United States. Right axis, GDPPC_CBI (Central Bank of Iran, thousand 1997 rials), PrivateCPC (private consumption per capita, thousand 1997 rials). See also footnote 8.
Sources: Summers, Heston, and Aten (2002), World Bank (2005), Central Bank of Iran, *Annual Report,* various years.

Figure (2), the rise and fall of living standards appears much less dramatic.[10] Private consumption (according to national income data) grew at 4.5 percent between 1960-77, which is about 2 percentage points less than GDP per capita, but was down by only 23 percent in 1988 compared to its peak in 1977. Growth of per capita consumption during 1997-2004, at 4.6 percent per year, compares well with the 1960-77 experience.

Perhaps the most remarkable observation to be made from Figure 2 is how insulated the rural economy has been to the wide fluctuations in the economy.[11] While urban families was on the roller coaster ride of boom and bust, the average rural family has not directly experienced the great boom of the 1970s nor the big crash in the 1980s. Their loss in terms

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[10]Household expenditure and income data are taken from the annual Household Expenditure and Income Surveys (HEIS) conducted by the Statistical Center of Iran. Because their reports are published separately for rural and urban areas, I have not produced the average for the country as a whole.

[11]For this reason in this paper I discuss consumption expenditures for rural and urban households separately.

Figure 2: Average real daily per capita expenditures, 1974-2004 (2004 rials)

Per capita income and expenditures, 2004 rials per day
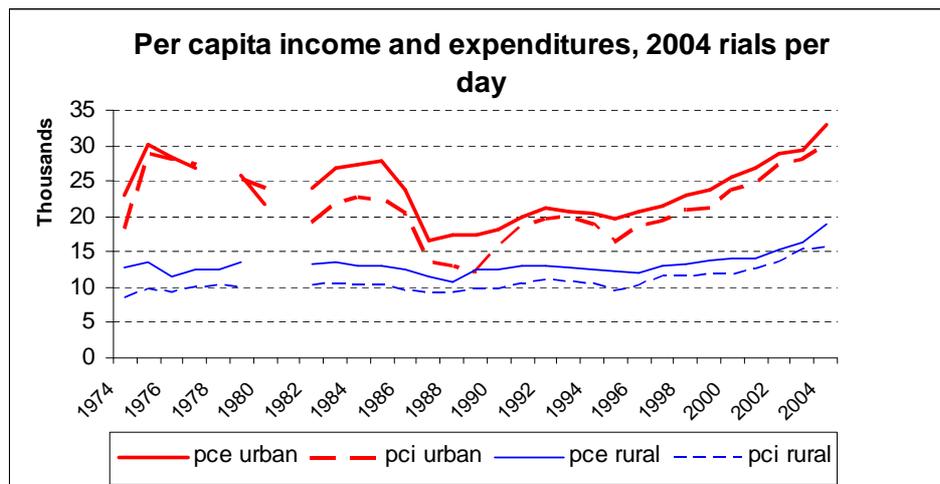
Notes: Average household expenditures divided by average household size and converted to 2004 prices using the consumer price indices for rural and urban areas.
Source: Statistical Center of Iran, HEIS reports, various years.

of stagnant incomes for an entire generation (1974-2000) is significant, however. Positive movement in rural consumption started to appear in the mid 1990s when per capita consumption first started to crawl up and then, between 1999-2004, it accelerated. During this period, which corresponds to the Third Development Plan, rural consumption grew at par with urban consumption, at 6.7 percent per year. Despite parity in terms of growth in recent years, over the longer period since the end of the war the gap between rural and urban areas has widened. The gap tends to narrow during periods of economic decline, as in the mid 1980s, and widen with growth, as in the period since the end of the war. The ratio of rural to urban consumption reached its lowest value of 0.45 in 1975, a year of maximum prosperity, and its peak in 1989, a low point in the last thirty years. The ratio has fluctuated round 0.5 in recent years. The widening of the gap during period of growth may be because more able rural workers migrate to cities, leaving behind the old and the less well off families. Since the rural-urban gap is one of the most important sources of inequality, reduction in overall inequality in the country may not happen until rural incomes catch up.

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3 International comparison of poverty and inequality

Before asking how the dramatic economic swings of the last three decades have affected different income groups, let us see how they have left Iran in terms of poverty and inequality compared to other countries. Comparisons of poverty levels are more difficult than inequality because there are no satisfactory ways to compare living standards, and therefore poverty thresholds, across countries whereas objective statistical yardsticks to compare level of inequality exist. Reported poverty rates (proportion living in poverty) for Iran vary greatly because different authors and institutions define different levels for the poverty line. For example, United Nations (2003, 6) reports that 20 percent of Iranians lived under poverty in 2003, which is a fair statement given the poverty line they assume: about 8800 rials ($3.60 in international dollars) per person per day, which is quite a bit higher than the one and two dollars per day commonly used for international comparisons. World Bank (2005) reports poverty (and inequality) measures for a number of countries, including Iran, using the standards of $1 and $2 per person per day. Table 1 compares poverty and inequality in Iran with a number of countries of interest: Egypt and Turkey, the two other large countries in the Middle East besides Iran; Mexico and Venezuela, two oil exporting countries from Latin America; China, India and Pakistan, poorer but fast growing countries of Asia; and Malaysia, a predominantly Muslim country with a dynamic economy. The data are for 1998-2001, the closest neighboring years for which comparable data were available.

In terms of poverty, Iran compares well with the countries in this table. The proportions of individuals under $2 per day is 7.2 percent in Iran, which is lower than Malaysia, Mexico and Turkey, whose average incomes are the same or higher than Iran's. Not surprisingly, Iran's poverty rate is considerably lower than the poorer countries of China, Egypt, India, and Pakistan. In terms of inequality, as measured by the Gini index, Iran is about average (0.43) for this group of countries. The poorer countries of Egypt, India, and Pakistan have lower inequality (0.30-0.35), but Iran's index is lower than countries with similar income

Table 1: International comparison of poverty and inequality

Country	GDP PC in 2003	Poverty rate % under $2	Gini index
Iran	6608	7.2 (1998)	43.0 (1998)
Egypt	3731	43.9 (1999)	34.4 (2000)
Turkey	6398	10.3 (2000)	40.0 (2000)
China	4726	50.1 (1999)	44.7 (2001)
India	2732	80.6 (1999)	32.5 (2000)
Pakistan	1981	65.6 (1998)	33.0 (1999)
Venezuela	4647	30.6 (1998)	49.1 (1998)
Mexico	8661	26.3 (2000)	54.6 (2000)
Malaysia	8986	9.3 (1997)	49.2 (1997)

Note: GDP per capita is in constant 2000 international (PPP) dollars, and the poverty rate is the percentage of individuals living under $2 per day.
Source: World Bank (2005).

(0.49 and 0.54 for Malaysia and Mexico) except for Turkey (0.40). In short, following a tumultuous post-revolution period, judged by the standards of this group of developing countries, Iran's poverty rate is quite low and its inequality is about average.

4 Poverty

4.1 Defining a poverty line for Iran

The literature on the meaning and measurement of poverty is extensive and contentious (Bhalla 2002), and extends beyond economics (Sen 1999). It is generally agreed, however, that measures of poverty based on what individuals spend on their livelihood serve an important purpose in monitoring of poverty. Poverty thresholds based on surveys of individual income and expenditures therefore form the mainstay of poverty measurement. In this section I compute such thresholds using household expenditure data.[12] In section 6 I consider the extent to which the poor have benefited from increased access to basic services which influence the quality of their life over and above what they spend on themselves.

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[12]For a description of the data see Appendix A.

Following accepted practice, I measure poverty using a poverty threshold based on expenditures reported in household surveys. Estimates of household expenditures are generally preferred to income because personal incomes are recorded less accurately. Measurement of farm income and the self employed in the informal sector difficult and, in addition, individuals maybe unwilling to disclose their incomes if they identify interviewers as tax officials. Expenditures are on the other hand calculated from answers to numerous questions related to specific items which do not directly reveal a person's income. I use a poverty threshold (or poverty line) based on the level of expenditures per person for an average household whose food outlays allows each member to consume a minimum level of calories per day (about 2200). This is the basic approach which has been used in Iran by Pajouyan (1994), Tabibian (2000), and Salehi-Isfahani (2003), among others. The poverty line is thus measured by the average expenditures for a group of households whose food intake amounts to about 2200 calories per day (see Table 2). A closely related method, employed by Assadzadeh and Paul (2004), calculates the cost of a given minimum nutritional bundle at current market prices and augments it by the proportion of non-food expenditures at the sample mean.[13]

Studies that measure poverty in Iran use the Household Expenditure and Income Surveys collected every year by the Statistical Center of Iran.[14] These surveys ask households about their expenditures in the last 30 days or the last 12 months, depending on the type of expenditures, but do not ask about individual consumption. The difference between expenditure and consumption can be large, especially for some rural households who buy their food in bulk at harvest time.[15] Table 2 compares various estimates of poverty lines in rials per person per day (to convert to international dollars, divide by the PPP exchange

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[13]There is no best way to calculate non-food expenditures that correspond to a minimum calorie bundle. See Ravallion (1992) for a survey of methods for measuring poverty thresholds using food and non-food expenditures.

[14]See Appendix A for a description of these surveys.

[15]In 2001, about 24 percent of rural families bought more than 500 kilograms of grain in the month of interview. So, in that month the mere purchase of this amount of grain may place them above the poverty line, but if the bulk expenditure is distributed over six or twelve months they may be in fact poor. See Salehi-Isfahani (2003).

Table 2: Various poverty lines for selected years (per person per day, in current rials)

	1977	1984	1989	1994	1999	2004
Urban						
MPO	75.8	210.4	535.7	1444.5	4327.4	3986.3
Assadzadeh & Paul	95.6	265.2	675.5	1824.9	5456.8	5027.9
Tabibian	85.2	236.4	603.3	1627.5	4864.2	4487.8
Pajouyan	66.4	184.3	468.2	1396.4	4819.4	3484.8
Salehi-Isfahani	73.9	205.0	521.6	1406.0	4204.4	3883.4
Rural						
MPO	42.4	122.3	311.1	837.8	2504.8	2314.6
Assadzadeh & Paul	67.4	194.2	430.5	1160.4	3869.0	3549.1
Tabibian	47.6	137.5	304.8	823.4	2739.6	2520.4
Pajouyan	50.5	145.6	323.6	1049.7	2795.5	2674.7
Salehi-Isfahani	50.9	146.5	325.2	881.1	2929.7	2687.5
PPP exchange rate	32.4	89.9	157.1	481.5	1118.2	2775.3

Note: Estimates of poverty lines were extended to other years using the CPI's for rural and urban areas. The PPP exchange rate for 1977 is not available the 1984 rate
Sources (and the year for which the estimate was made): Management and Planning Organization (2000), 1998; Pajouyan (2000), 1995; Tabibian (2000), 1996; Salehi-Isfahani (2003), 2001.

rate rials given on the last row of the table). The estimates from each source is for a specific year, which I have extended to other years using the consumer price indices for rural and urban areas. There is a fair amount of agreement among these estimates of poverty threshold and in later years they generally exceed the $2 per person per day which is the international benchmark. In section 4, to economize on space, I use only the $2 per day and the Assadzadeh-Paul rates; the former because it is an international benchmark, and the latter because it represents the upper bound on poverty threshold in Table 2 and because its source is published in English.

4.2 Household vs. individual level poverty rates

The purpose of most poverty measurement is to determine the proportion of *individuals* below a certain level of per capita expenditures or income. In Iran poverty rates are often defined as the proportion of households below a household poverty threshold, which tends to overestimate poverty at the level of the individual, because poorer households are smaller

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Table 3: The relationship between household size and household expenditures

Decile of expenditure	Household size		
	1984	1994	2004
1	2.70	3.11	2.98
2	4.47	4.72	3.88
3	5.02	5.09	4.27
4	5.47	5.27	4.42
5	5.68	5.51	4.55
6	5.76	5.58	4.61
7	5.83	5.63	4.74
8	5.91	5.80	4.65
9	5.91	5.77	4.77
10	6.04	5.89	4.63
Total	5.28	5.24	4.35

Source: Author's calculations, HEIS

than the average (see Table 3). This is particularly problematic for understanding the trend in individual poverty because the relationship between household size and expenditure class has changed over time. As seen in Table 3, average household size in the poorest three deciles of household expenditures rose during 1984-94 before declining to 2004, while it declined continuously for richer households.

For 1984 and later years when unit record data are available,[16] individual-level poverty rates are easily calculated. For earlier years, for which I have to rely on the published survey results, whenever the distribution of household size by expenditure or income group has been reported, I have used the information to estimate individual poverty rates. Furthermore, because the poverty lines I use do not necessarily correspond to the expenditure thresholds in the published results, I estimated poverty rates by assuming a linear relationships between the number of individuals within an expenditure category and the level of expenditures. The results are presented below in Figure 4 and in Table 9 in Appendix B.

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[16]Assadzadeh and Paul (2004) identify their first expenditure survey as 1983, but to my knowledge the 1983 survey is not available in unit record and from the sample characteristics it seems that they are actually using the Iranian year 1363 (1984/85) survey.

4.3 The trend in poverty

Determining the trend in poverty for Iran is fortunately much less contentious than measuring it for a given year. All poverty measures reveal the same trend because in these surveys the relative position of the cumulative distributions of expenditures for different years are characterized by stochastic dominance. Thus, any poverty line applied consistently to all years would show the same trend. To see this, consider the distributions of per capita expenditures for the most recent years depicted in Figure 3, which happen to belong to a period of economic growth and therefore are positioned from left to right for later years. As a result, because the distribution functions do not intersect (stochastic dominance), no matter where we place the vertical line which represents the poverty line, the poverty rate, measured by the vertical height of the distribution function (the proportion of individuals with expenditures below that level), declines over time.

This graph also shows that the proportion of the population under poverty (the so-called Head Count Ratio) is quite adequate for describing the trend in poverty. More complex indices, such as the poverty gap index, which are more sensitive to the depth of poverty and changes in the lower tail of the distribution and are therefore generally preferred to the Head Count Ratio, would tell the same story of change in poverty over time. This is because the shape of the expenditure distribution function at the lower tail has remained relatively contestant over time.

As noted earlier, to track changes in poverty over the 1974-2004 period I use the standard $2 per day rate converted to rials at the PPP exchange rate for each year, and the poverty line for 1994 used in Assadzadeh and Paul (2004)–henceforth AP–and generalized to other years using the consumer price indices for rural and urban areas.[17] These poverty lines represent the two extremes in Table 2, but once extended to the 1970s they switch sides. A major difference between the two thresholds is that the $2 per day is the same for rural and urban areas, whereas AP allows for different rates. Neither measure of poverty

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[17]See Chen and Ravallion (2001) for a discussion of this methodology.

Figure 3: Cumulative distribution of real per capita expenditures, 2000-04
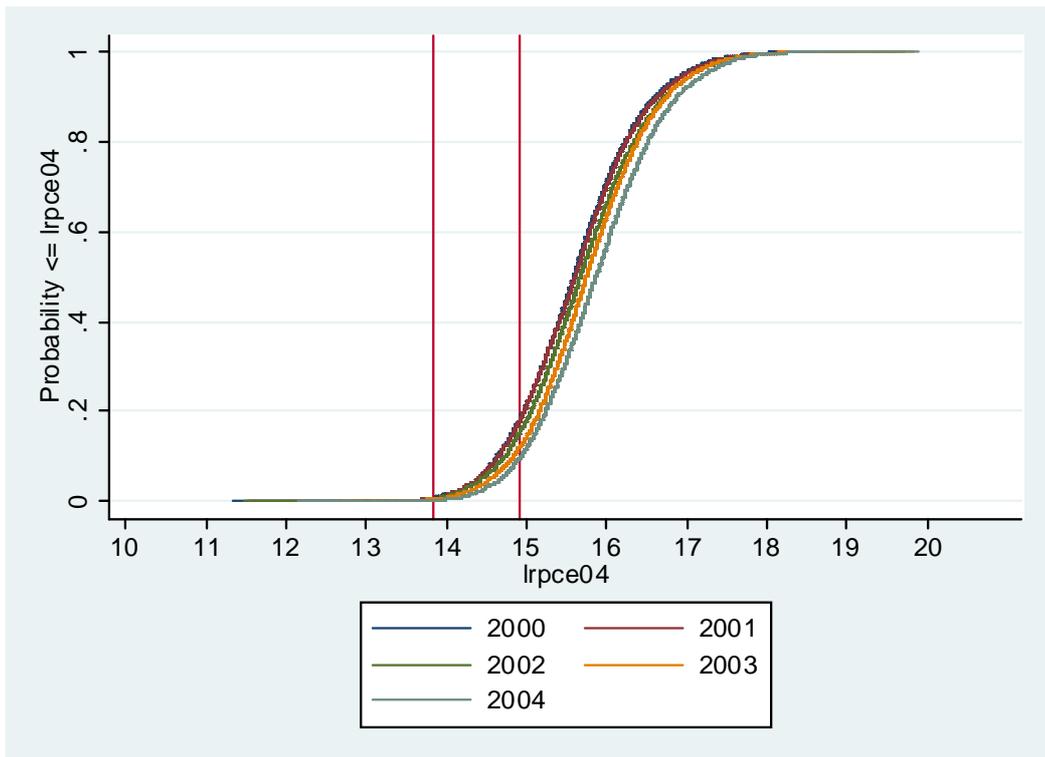
Notes: Per capita expenditures are in logs of 2004 rials. Source: Author's calculations using Household Expenditure and Income Surveys for 2000-04.

fully takes into account the effect on poverty of subsidies for food, energy and medicine, which account for an important part of the poor's expenditures. Subsidies are only partly reflected in my calculations of poverty rates because I deflate nominal expenditures with the Consumer Price Index, which is optimized for the basket of goods purchased by the average consumer. Since the poor spend a greater proportion of their incomes on subsidized goods, my calculations may under-estimate the decline in poverty. This is contrary to the usual argument that contends that inflation adjustments would show greater poverty (Amuzegar 2005).[18] I checked for the sensitivity of the results by deflating instead with price indices for food and clothing, which may be closer to the inflation experienced by most poor families. Because the food and overall CPI are closely correlated, the results did not change.

Figure 4 shows the Head Count Ratio for the period 1977-2004 for households and individuals and for rural and urban areas (the actual numbers are in Tables 8 and 9 in Appendix B). The top two graphs show the proportion of households and the bottom graphs show the proportion of individuals below poverty according to each definition of poverty.[19] The trends in all four graphs are similar, showing decline in poverty immediately after the Revolution, followed by a sharp rise in the latter half of the 1980s, and declining thereafter.[20]

In 1977, according to AP and $2 poverty lines in urban areas about 28 percent of households and 25 percent of individuals were below poverty; for rural households, the proportions of households were 43 percent according to AP and 66 percent according to the

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[18]The argument that the poor have been squeezed hard by inflation is not supported by the evidence. In addition to direct evidence of rising incomes presented in this paper, we notice that rising real income has allowed the poor to diversify their expenditures, in particular to spend more on non-food items. For the lowest decile of per capita expenditures, the share of non-food expenditures in total household expenditures has increased steadily during the period under study, from 40 percent in 1984 to 44 percent in 1994 to 50 percent in 2004.

[19]As noted earlier, the household rates are directly taken from SCI publications. For example, in 1977, SCI reports 64 percent of households spent under 15,000 rials per year, which is about $2 per day using the PPP rate of 46.5 rials per dollar and the reported average family of 5.43 for this expenditure group. The lower individual poverty rate of 59 percent for 1977 is because poorer households were smaller in size.

[20]The $2 poverty line yields higher rates in the 1970s compared to AP but lower in later years. The reversal has to do with the way the PPP exchange rate (which drives changes in rial value of the $2 poverty line) varies relative to the Consumer Price Index (which drives changes in the AP line).

$2 poverty line, and for individuals 43 (AP) and 60 percent ($2). The extent of decline in poverty in the early years of the Revolution and how long it lasted are difficult to determine with precision because during the early years of the Revolution expenditure surveys did not happen regularly. There was no urban survey in 1978, and 1981-83, and no rural surveys in 1979-81 and 1983. The 1982 rural survey indicates that individual-level rural poverty had declined to 40 percent in that year, which is much lower than 59 percent in 1977, but according to AP poverty in 1982 was only 9 percentage points lower relative to 1977 and was actually slightly higher compared to 1978. Household-level rates show uniform decline between 1977-1982. Even for the years when data were collected, they were not used to measure poverty.

Poverty rates rose sharply in the mid 1980s as incomes plummeted with the intensification of the war with Iraq and the collapse of oil prices (see Figures 1 and 2). According to the poverty line defined by Assadzadeh and Paul (2004), the rural individual poverty rate peaked 47 percent in 1988 and urban at 40 percent in 1989; according to the $2 per day threshold, poverty peaked at 36 percent in 1987 and 14 percent in 1987. Evidently, the wide ranging system of rationing intended to shield the poor against price increases and shortages was not sufficient to keep overty from rising in the face of diminished resources. During the war years the government had instituted a wide ranging system of rationing for basic goods, which had informally extended to most commodities from refrigerators to construction materials which were procured from centers located in mosques. One possible reason for the rising level of poverty in the mid 1980s may be accelerating inflation, rising from 7 percent in 1985 to 24 percent in 1986, pushing up the estimated poverty line. A shift in the poor's expenditures toward rationed goods might have protected them.[21] Another reason is that because of the nation's focus on the war effort, delivery of goods and services to the poor was still not a priority. The delivery of key basic services (roads, electrification, and health) to rural areas did not start in earnest until the war had ended.

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[21]Since we only focus on expenditures deflated with CPI, we do not know to what extent such substitution helped then allay falling incomes.

With the end of the war in July 1988, rising price of oil as a result of the first Persian Gulf war of 1990-91, and reconstruction, poverty began to decline, and was down by one quarter by 1993. This was briefly interrupted in the mid 1990s as a result of macroeconomic adjustment and import compression which was introduced in response to an external debt crisis (Pesaran 2000). However, poverty soon resumed its falling precipitously to very low levels in 2004. According the two-dollar poverty line, in 2004 of only 1 percent of urban individuals and 7 percent of rural individuals were poor; the rates according to the AP poverty line were about 11 and 17 percent. Thus, in 2004, according to the higher poverty line (AP) of $3.3 per person per day, about 12.7 percent of the population, about 8.9 million individuals, were poor, while by the lower $2 criterion, only 3.3 percent, about 2 million, were poor.

Figure 4: Proportion of individuals below poverty, 1977-2004
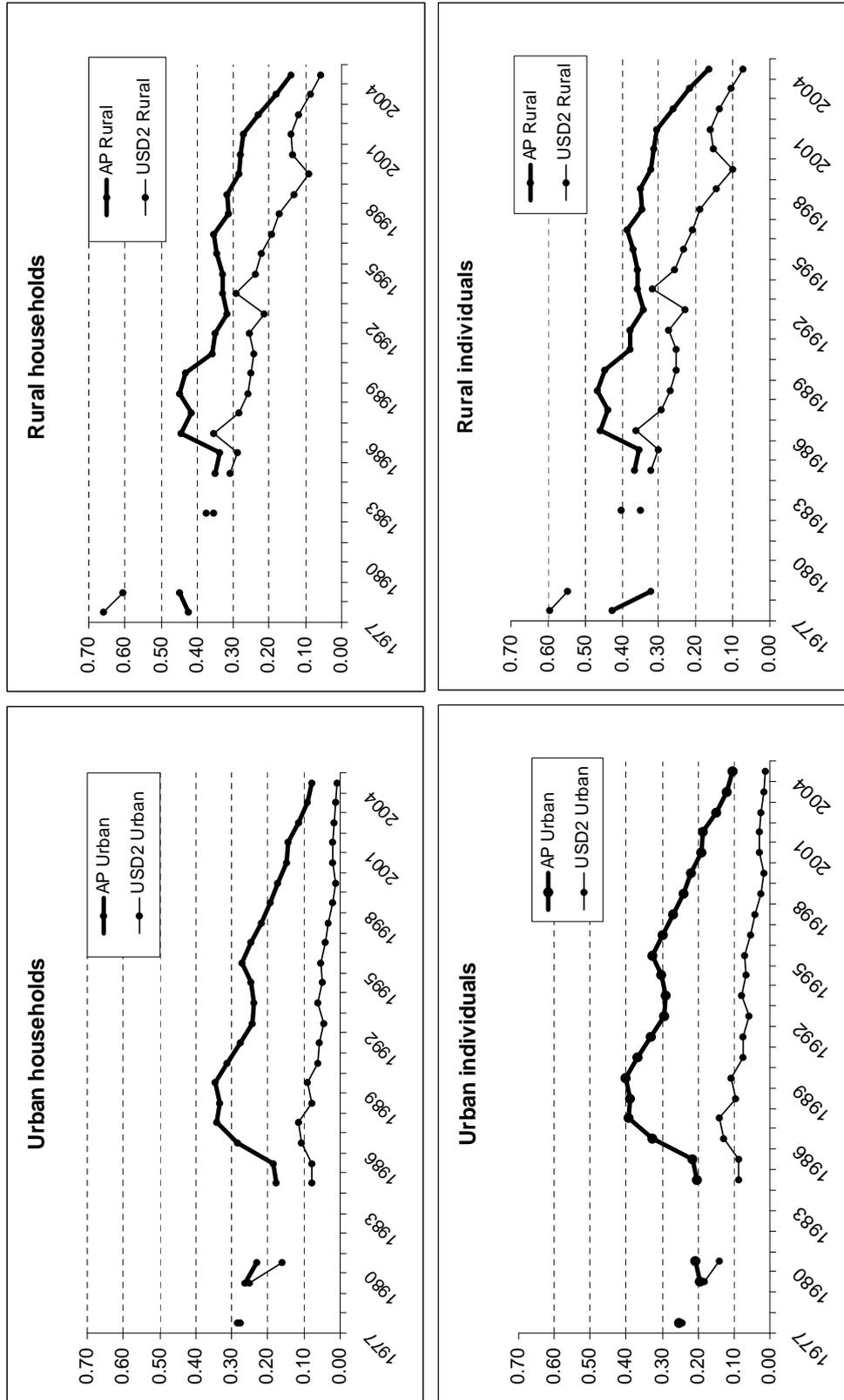
Notes: The USD2.00 per day poverty rate is converted to rials using the purchasing power parity exchange rates), and the AP line is based on Assadzadeh and Paul (2004). Source: and Statistical Center of Iran, Household Expenditure and Income Surveys, for 1977-83 based on SCI publications, and 1984-2004, author's calculations.

The trend depicted in Figure 4 has important implications for the political economy questions I raised in the introduction to this paper. First, the large difference between poverty rates in 1977 and 2004 is an indication that the Revolution has had a profound impact on the welfare of Iran's poorest families. Since per capita incomes in 1977 and 2004 were about the same, the lower poverty rate must be due to the effect of significant improvement in equality, at least at the lower end of the distribution. Overall equality, to be discussed below, shows improvement between 1977 and 2004, but is nowhere as impressive as the decline in poverty. To the extent that the reduction in poverty is attributed to the pro-poor and pro-rural policies after the Revolution, one can be sure that the Islamic regime has its supporters. The quality of life for millions of people, especially in rural areas, has improved significantly thanks to large scale investments in rural electrification, rural health, family planning and education that took place in the 1980s and 1990s (Shakoori 2001). Agricultural support prices after the war also helped to increase farm incomes (Mojtahed and Esfahani 1989), and subsidies for basic commodities protected the poor in rural and urban areas.

Second, these results challenge the suggestion that pro-market reforms during the Rafsanjani and Khatami administrations left the poor behind, and thus contributed to the reformists' electoral defeat in June 2005. As it happens, the largest declines in poverty coincided with periods of reform, suggesting that, to the contrary, reforms may have been good for the poor. The critics often point to rise in poverty during the mid 1990s as evidence that the pro-market reforms (often labeled as structural adjustment to give it a neo-liberal twist) were anti-poor. But poverty actually fell during the first Rafsanjani adminstration in 1989-94 and only rose after market reforms were put on hold in 1995 on orders from Ayatollah Khamenei. Oil revenues were falling during the second half of the 1990s (oil prices in 1998 were only one-third their level in 1991) and, more importantly, imports were cut to manage the balance of payments crisis created by poor macroeconomic management in the first Rafsanjani adminstration (Pesaran 2000).

Finally, the trend in poverty highlights the role of oil income in fluctuations in the incidence of poverty. With the exception of the 1996-99 period, when oil prices actually fell, all other periods of decline in poverty coincided with rising oil prices. This is true of the 1990-92 spell, as well as the most recent decline during 2000-04, when rising oil prices helped the economy grow by about 5 percent per year, bringing poverty down sharply. In theory, the idea that rising oil income, as distinct from other types of macroeconomic stimuli, tends to reduce poverty is rather straightforward. Higher government expenditures increase aggregate demand, which disproportionately benefits non-traded sectors such as services and construction, which employ a significant proportion of unskilled workers and raises their wages. At the same time, the inflow of foreign exchange helps increase supply of traded consumer goods, especially food, and thereby prevent the CPI from increasing at par with nominal wages. Government subsidies for food, energy, and medicine help further to prevent inflation from eroding the purchasing power of the poor. It is indeed difficult to imagine how, with the vast system of subsidies in place, rising oil revenues could have led to the ranks of the poor in Iran to swell. The well-known phenomenon of immiserizing growth (Bhagwati 1958), which is sometimes associated with increased poverty happens because economy growth is associated with deteriorating not improving terms of trade. Thus, the insistence of many Iranian observers that poverty has been on the rise is in some cases a mere extension of the immiserizing growth hypothesis to the case of oil-exporting countries, to which the theory does not apply.[22] If there is any transfer away from the poor as a result of an oil boom, it is from the poor in oil importing countries to citizens of oil exporting countries.

In this section I have focused on absolute (commodity based) poverty lines. Falling poverty rates based on absolute poverty lines do not necessarily indicate that over time fewer people are feeling poor. The feeling of being poor is often relative. So people may feel poorer even if they are gaining in absolute terms as long as they fall behind others. People

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[22]This view is prevalent among the Iranian Left. See the papers in Raisdana et al. (2000) for a sample of writings on poverty.

may also fail to notice a decrease in poverty if their expectations are increasing. This is the reason why absolute poverty lines are revised upwards over time and why richer countries have higher absolute poverty lines. However, as an objective measure of how welfare has changed in Iran the results of this section serve an important purpose, by forcing us to look deeper than the conventional measured of welfare to understand explain why, subjectively, many Iranians do not consider poverty to have declined. Certain aspects of the subjective comparisons of welfare are better captured by changes in inequality rather than poverty, to which I now turn.

5   Inequality

In this section I present evidence on the distribution of expenditures and income. Understanding the evolution of inequality illuminates the relationship between economic fluctuations, poverty reduction, and political change in post-Revolution Iran. Since changes in poverty are not closely related to changes in the underlying distribution of income, it is possible, as in China and India, for poverty to fall while the distribution of income becomes more unequal. Rising inequality might explain the apparent anomaly of rising social frustration with the economy in the face of economic growth and falling poverty. The findings in this section show that while inequality has declined compared to the years immediately before the Revolution, it has been relatively stable in recent years. As such, these findings do not support the view that increase in inequality explains economic frustration and therefor the rise of populism in Iran.

As noted earlier, the proposition that economic growth induced by rising prices of exports should reduce poverty is hardly controversial. But a reduction in inequality is by no means guaranteed and it may worsen the distribution of income if the rich gain even more than the poor. Kuznets' famous generalization (Kuznets 1955, Milanovic 1994, Deininger and Squire 1996) suggests that during the early stages of economic growth inequality wors-

ens before it improves. Inequality and economic growth in oil exporting countries may follow a different dynamic, one related to access to the oil rent. Economic growth under these circumstance may cause inequality to rise if the distribution of political power, which determines access to the oil rents, is unequal to begin with and does not improve with rising oil income. In Iran, the Revolution brought about a large shift in political power but there is no evidence that the distribution of political changed as much. Even the two presidential elections in 1997 and 2005, which seemed to entail significant shifts in political power, may have been more of a reshuffling of those in power than a different distribution of power. The remarkable stability of inequality of income and expenditures in the last twenty five years lends credence to these conjectures. Is lower inequality a real possibility for Iran? The answer is maybe. To the extent that the increased complexity of the economy over time will increase returns to human capital, and as an asset it is more equally distributed than power and access to rents, one could expect economic growth to lower not raise inequality. In addition, since productive human capital which is held widely, if not equally, by individuals in the society is likely to lead to greater democratic participation, one would expect that increase in returns to human capital would also help bring about a more equal access to power and the oil rent.

5.1 Inequality of household expenditures

My comparison of pre and post-Revolution inequality relies on inequality at the household level because all published estimates of inequality for the years before 1984 are at the household level. A comparison based on expenditures per capita is preferable because it is not affected by changes in the distribution of household size by income.[23] This is particularly serious for the 1990s because of the change in household composition noted earlier as a result of the fifty percent decline in fertility which tool place between in the late 1980s and 1990s.

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[23]This difference seems particularly significant for rural areas: the estimated Gini coefficient for rural household expenditure in 1984 reported by Behdad (1989) is 0.43 which is significantly higher than what I have estimated from unit record data for per capita expenditures.

This caveat may also apply to changes in inequality during the 1970s, but for a different reason. Rapid rural-urban migration in the 1970s may have added disproportionately to the number of younger but poorer families in urban areas, thereby reducing family size at the lower end of the urban expenditure distribution. This could then explain why distribution of expenditures at the household level is in a less equal than the individual level.

Figure 5 presents estimates of the Gini coefficient of inequality of household expenditures obtained from two sources: published studies for 1971-1983 and my own calculations from unit record HEIS data.[24] The largest shifts in the distribution of income in recent times appear to have taken place before the Revolution, during a period of apparent social and political stability, leading Pesaran and Gahvary (1978) to conclude that the oil boom of the 1970s had worsened the distribution of income. Between 1972 and 1977 the Gini index of inequality rose from 0.4 to 0.5 in urban areas and from 0.37 to 0.44 in rural areas. The Gini index declined immediately after the Revolution, to about 0.4 for both rural and urban sectors (Behdad 1989, Nowshirvani and Clawson 1994), but rose slightly later in the 1980s. These changes in inequality mirror fall and rise in poverty in the 1980s discussed above. According to household expenditures the period since the end of the war with Iraq has been one of general stability in inequality.[25] Urban inequality which was higher than rural inequality before the Revolution, has been lower for the last twenty years. Greater equality defines an important aspect of Iranian urban life compared to the period before the Revolution. Contrary to several reports noted in the introduction to this paper, and to the oil boom of the 1970s, the more recent oil-induced expansion of 2000-2004 seems to have been consistent with (slightly) increased equality.

A similar depiction of inequality at the household level is obtained by using a more

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[24]A frequent complaint against the use of HEIS data for measurement of inequality in Iran is that they underestimate income and expenditures at the higher end of the distribution. One could also think of the same happening at the lower end because the poor do not generally keep good records, so in balance the bias in inequality may not be that large. In any case, while estimates of inequality at a given point in time may be affected by measurement bias, the comparison over time is less affected because the method of HEIS data collection has remained the same over time.

[25]The rise in rural inequality in 1986 may be due to poor quality of rural data in 1986, which may have been due to the difficulties caused the war.

Figure 5: The Gini index of inequality of household expenditures, 1971-04
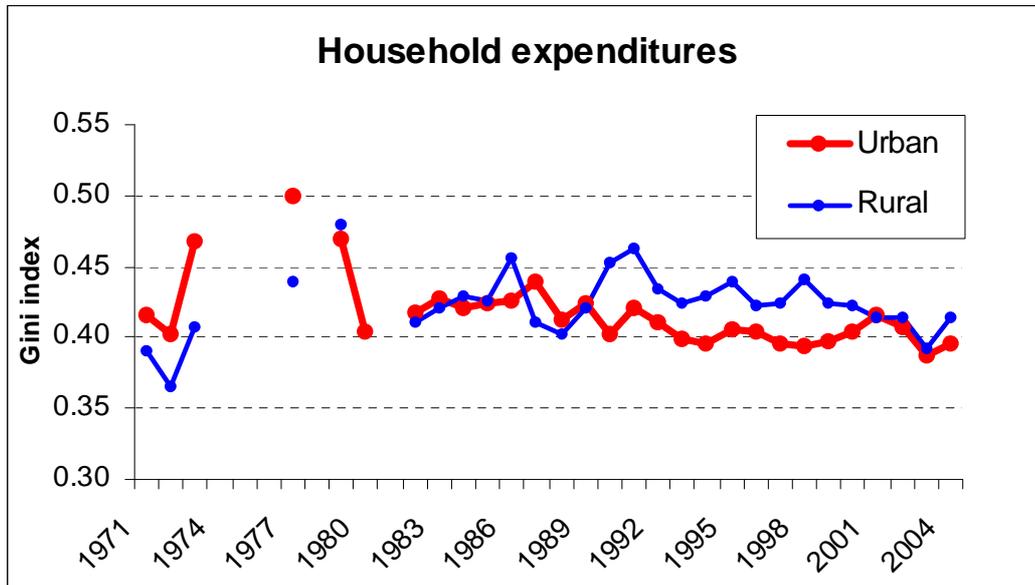
intuitive measure of inequality, the ratio of the share of the top to the bottom 10 percent of the households (this measure is not available to push the comparison reliably to the early 1970s. See Figure 6). The decile share ratio for urban households fell from over 28 to about 18 immediately after the Revolution, then rose some in the 1980s to above 20, before falling to below 15 in 2002. The ratio for rural households exhibits more variation compared to urban, fluctuating widely between 18 and 32 during 1977-1992, before declining to less than 20 in 2000. The rise of the ratio for rural households in the early reconstruction years, resulted in the largest contrast in inequality between the rural and urban areas in 1992, pushing the national ratio to over 25. The rise in rural inequality during the 1990-92, which is evident in both Figures 5 and 6, is the only piece of evidence that is consistent with the claims made by the critics of market reforms in Iran regarding the adverse consequences of reforms for inequality. Their other claims regarding increase in poverty and urban inequality do not find any support in this study.

Figure 6: The share of the richest decile of household expenditures relative to the poorest decile, 1977-04
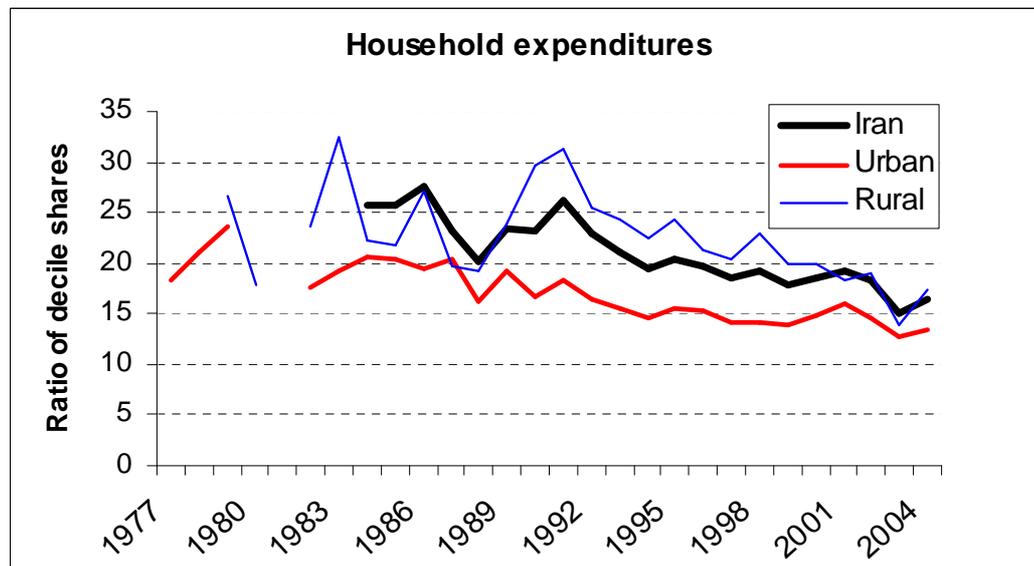
Household expenditures

5.2 Inequality of per capita expenditures

Inequality at the household level, though it allows our historical series to go back to 1971, is of limited value as the changing relationship between family size and income may have distorted the true picture of inequality which is at the individual level. Indeed, the Gini index of per capita expenditures for the 1984-04 period (Figure 7), shows little or no decline and is mostly flat for the entire period. This is consistent with the observation made earlier that in the last fifteen years poorer families have become smaller at a faster rate than richer families, resulting in lower inequality between individuals compared to household. The decile ratios for inequality of per capita expenditures also show more stability compared to household level expenditures (Figure 8). Also, in contrast to household-level inequality, individual level inequality indicates that urban inequality is *greater* than rural inequality for most of the period, especially in the last ten years.

A more direct way of showing how inequality among individuals has changed over time

Figure 7: The Gini index of inequality of per capita expenditures
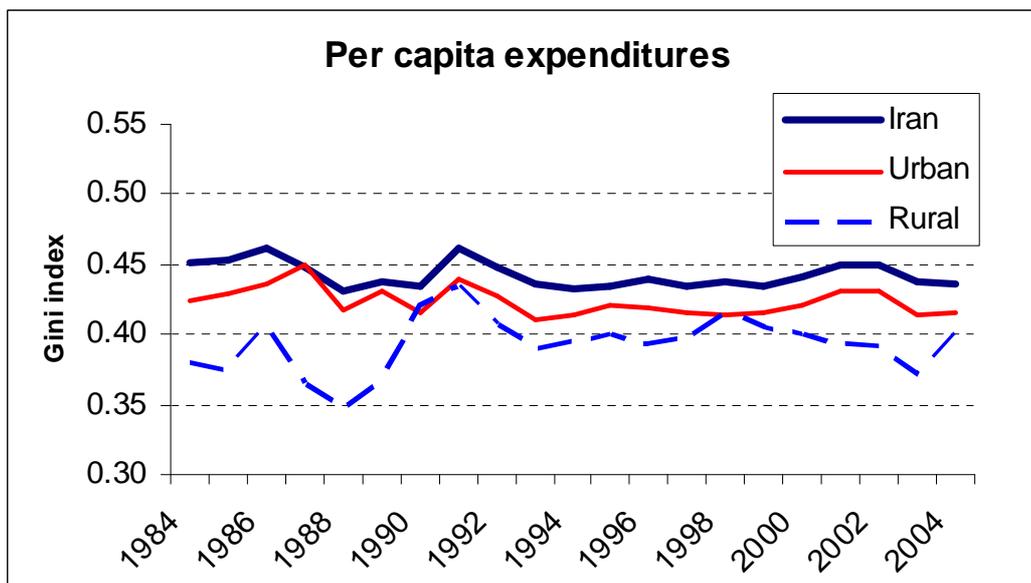
Per capita expenditures

Figure 8: The share of the richest decile of per capita expenditures relative to the poorest decile, 1984-04

Per capita expenditures

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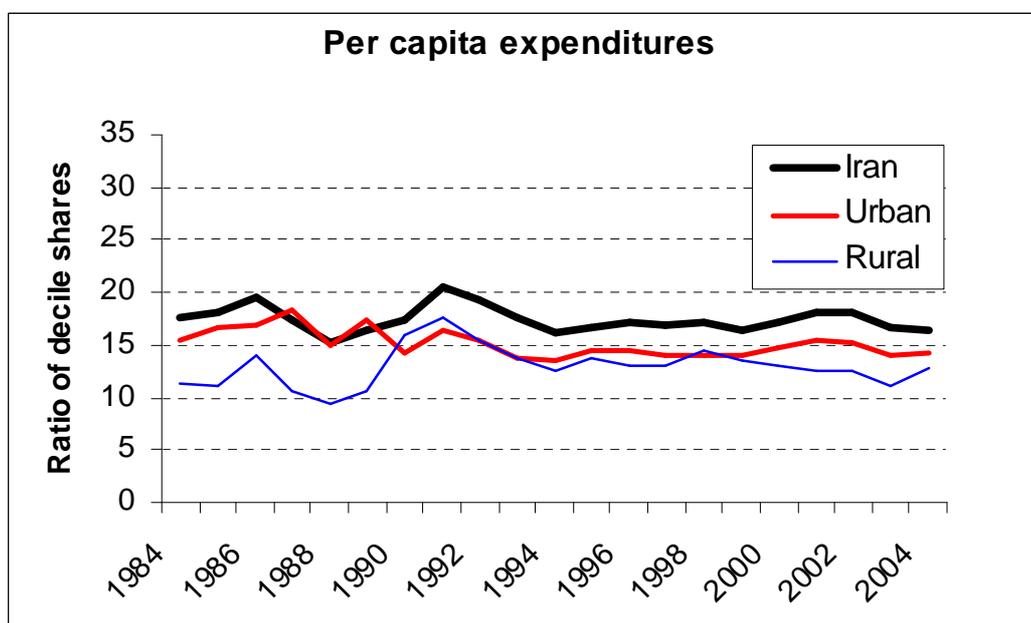
is to measure the growth rate of per capita expenditures (pce) for different deciles of pce. Table 4 shows that during 1984-2004 individuals in lower deciles have done well compared to those in higher deciles. Nationwide, the lowest deciles lost less in the downturn of 1984-89 and did no worse in the subsequent recovery of 1990-2004. However, the nationwide data hides divergent trends in urban and rural areas. For urban individuals, those in the lowest decile actually did much worse, losing nearly 9.3 percent per year during 1984-89, compared to the richer deciles. However, they did better during the ensuing recovery as well as for the entire 20 year period. In contrast, individuals in the lowest rural decile lost less than the average during the downturn (-2.2 percent per year) and gained significantly more during the next five years of recovery (4.4 percent). These observations conform to the point noted earlier that rural incomes have generally been more stable and more resistant to aggregate economic shocks. They do not, however, corroborate the general view that during the war years the poor, who supplied the bulk of fighters for the war, had greater access to government provided goods and services. The very different consumption paths of the lowest decile in rural and urban areas during 1984-89 is an interesting observation that deserves further research.

Table 4: Average annual growth rates of real per capita expenditures (pce) by deciles of pce, 1984-2004

Decile	Iran			Urban			Rural		
	1984-89	1990-04	1984-04	1984-89	1990-04	1984-04	1984-89	1990-04	1984-04
1	-4.28	4.58	2.35	-9.27	4.71	2.02	-2.21	4.42	1.93
2	-4.01	4.18	2.36	-8.16	4.58	1.70	-2.16	3.71	1.95
3	-4.06	4.10	2.35	-7.94	4.56	1.60	-2.07	3.34	2.01
4	-4.52	4.18	2.34	-7.71	4.68	1.55	-2.16	3.14	2.04
5	-4.74	4.30	2.35	-7.43	4.71	1.55	-2.30	3.02	2.10
6	-5.12	4.35	2.30	-7.59	4.75	1.49	-2.42	3.02	2.19
7	-5.42	4.34	2.25	-7.79	4.68	1.43	-2.62	2.95	2.28
8	-5.96	4.35	2.16	-7.90	4.57	1.31	-2.81	2.68	2.34
9	-6.45	4.39	1.99	-7.95	4.63	1.31	-2.70	2.55	2.45
10	-7.19	4.46	1.74	-7.67	4.46	1.29	-3.47	2.64	2.49
Total	-6.03	4.37	2.05	-7.80	4.58	1.40	-2.79	2.86	2.31

Source: Author's calculations using HEIS, various years.

5.3 Income inequality

Poverty and income distribution measures based on consumption are generally preferred to measures based on income for a number of reasons. First, many individuals feel more comfortable talking about their expenditures than income, especially when they respond to questions expenditures on individual items. Second, compared to wage and salary income, in developing countries income from self employment and farm operations are less accurately reported because bookkeeping is rudimentary. Keeping these caveats, and because they apply to all years equally, it is worth looking at the trends in inequality of total household incomes and earnings. The analysis of inequality of income and earnings are restricted to the 1984-04 period when the micro data is available, because comparable published estimates for the pre-Revolution years are not available.

The trend in inequality of per capita household incomes (earnings plus transfers) is very similar to expenditures, though the level of inequality of incomes appears somewhat higher in most years (Figures 9 and Table 10). The Gini indices for household incomes in rural and urban areas show short term fluctuations which closely follow each other, but the overall trend is constant.[26] There is a similar sharp rise in inequality in 1999, which is difficult to explain, except that, like 1986, it was a bad year for the economy. Significantly, inequality did not increase in during 2000-04. Income inequality in 2003-04 was below its average for the period. This is confirms the main conclusions reached from the analysis of per capita expenditure inequality, namely that inequality was not on the rise in the years before the 2005 elections.

Finally, consider the level of inequality in earnings, depicted in Figure 10. Interstingly, the Gini indices for per capita earnings are significantly higher than for either per capita incomes or expenditures. The Gini index for urban areas in 2004 is 0.42 for per capita expenditures, 0.43 for per capita income, but 0.52 for per capita earnings (Table 10). One

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[26]The sharp rise in inequality in 1986 should be treated with caution as the 1986 survey was conducted under difficult conditions due to the intensity of the war and therefore contains a disproportionate number of missing values for income.

Figure 9: The Gini index of inequality of per capita household income, 1984-04

**Per capita household income
(earnings plus transfers)**
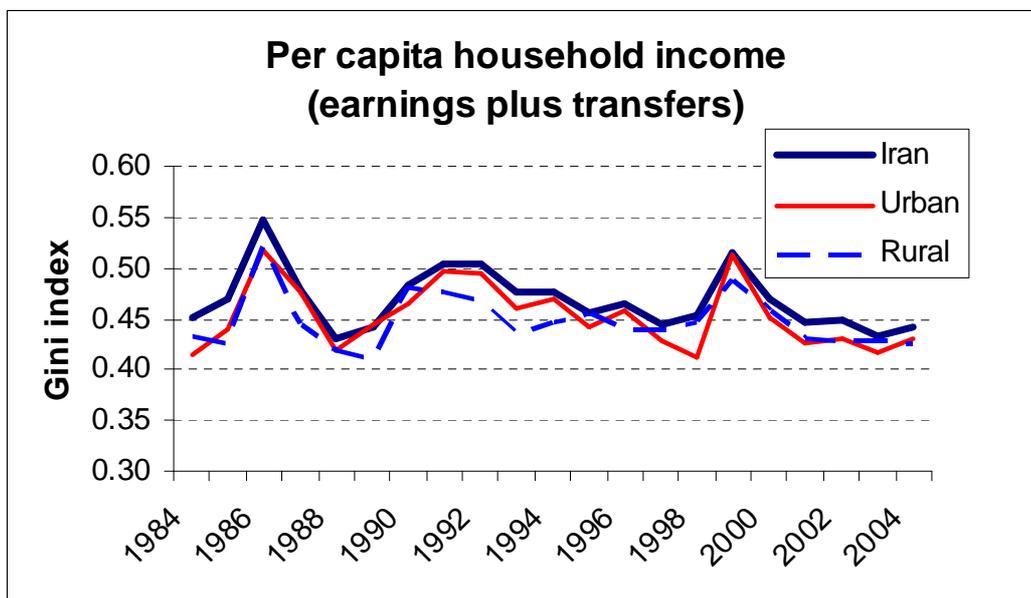
Note: Total household income, including monetary and in-kind transfers.
Source: Author's calculations using HEIS data files, various years.

Figure 10: The Gini index of inequality of per capita household earnings

Per capita household earnings
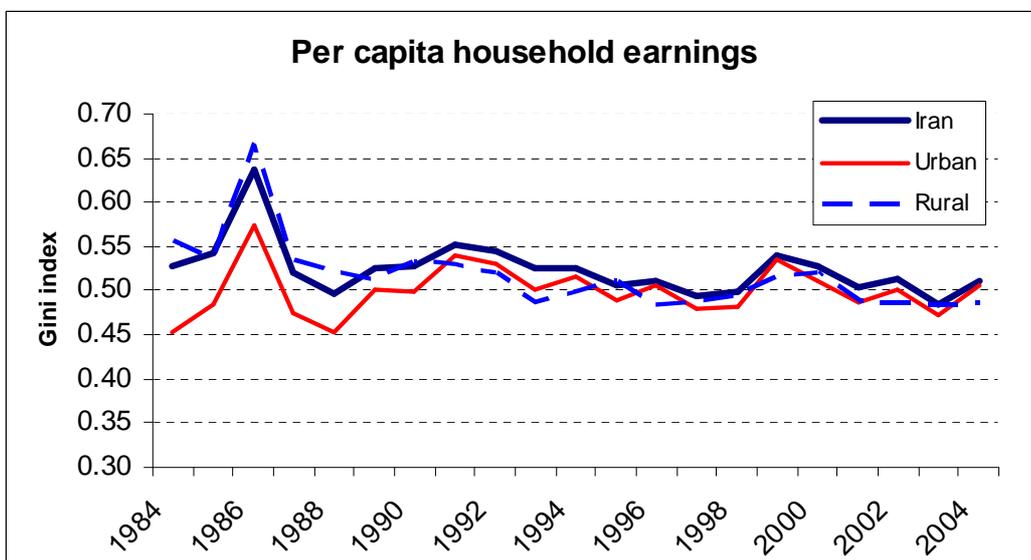
Note: Earnings include income from wage and salary work and self employment.
Source: Author's calculations using HEIS data files, various years.

explanation for the gap between incomes and expenditures on one hand and earnings on the other may be that transfers are more equally distributed, as they should be. However, as with others, the trend exhibits stability more than anything else.

To summarize, the evidence on inequality presented in this section shows that, in contrast to the evidence on poverty, there has been little progress toward greater equality in thirty years of revolutionary and redistributive policies. At the household level, the Gini index in 2004 is about the same as it was in 1971-72. At the individual level, our estimates of inequality do not go back to the 1970s, but at least for the last 20 years we there is a fair degree of stability. Apparently, overall inequality in Iran has not been only resilient to policy changes but also to the Revolution itself. A possible lesson from this observation is that, compared to poverty, inequality is more structural and therefore stable; a social revolution could not affect it, much less incremental policy. There is no doubt that the Revolution displaced many people from their place on the economic ladder, often quite drastically and violently, but perhaps because the economic ladder on which individuals must in the end find their place has remained the same, the distribution has failed to change: different people stand on the higher rungs in the ladder but the ladder itself has changed little.

6 Access to services and home appliances

Improvements in living standards are only partially measured by changes in household incomes and expenditures. Neither include allowances for public investment, whose distribution changed significantly after the Revolution, shifting its focus to rural and poorer communities. Investments which have resulted in increased access by the poor, especially in rural areas, to basic services such as electricity, piped water, and natural gas affect the quality of life but are not fully reflected in household income or expenditures in part because they are highly subsidized. In addition to access to basic services, in this section I consider home ownership and ownership of home appliances, most of which require electricity to

operate, and thus provide further indication of improvement in the quality of life which has resulted from public provision of basic services as well increased household resources.

Tables 5 shows changes in indicators of housing, appliance ownership and access to basic services have changed over time as they are reflected in HEIS data. According to these indicators, there has been a significant increase in access to basic services and availability of household appliances. Home ownership has remained high despite rising urbanization which tends to promote rental housing, but living area per person has increased. An important aspect of access to services is the narrowing of the rural-urban gap. These indicators provide a fuller picture of the direction of change in the rural-urban welfare gap, showing more narrowing than is apparent in per capita expenditures (compare with Figure 2). An ambitious program of rural electrification, one of the first to be implemented after the Revolution, has increased access by rural households from 16.2 percent in 1977 to 98.3 percent in 2004. This change is responsible for many other improvements recorded in Table 5. Ownership of refrigerators in rural areas increased from 7.6 percent to 92.4 percent during the same period. Among urban households, nearly all of whom had access to eccentricity by 1977, only 36.5 percent owned refrigerators; by 2004 it was 98.5 percent. Ownership of televisions increased in both urban and rural areas, from 22.6 percent to 97.5 percent in urban and 3.2 percent to 89.1 percent in rural areas. Interestingly, TV ownership in urban areas, where access to electricity already existed, jumped from 22.6 percent to 79.0 percent in just seven years, perhaps as watching TV received the stamp of approval from religious leaders. Nearly half of rural homes had a fixed telephone line in 2004, a non-existent service for them before the Revolution.

Access to piped water among rural households increased from 11.7 to 89.0 percent, an impressive gain in view of the fact that rural families live in over 60,000 villages some of which are quite remote. Delivery of cheap piped natural gas to residential homes, which is an entirely post-Revolution project, is now a reality for 80.1 percent of urban homes. The geographic dispersion of rural households makes it very costly to extend the same services

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to rural households, of whom only 14.1 percent have access to piped natural gas. In housing, despite rapidly increasing population, in the last two decades average living area per person increased for both rural and urban families.

Table 5: Home ownership, household appliances, and access to services, 1977-2004

Year	Home owner	Living area	TV	Car	Phone	Washing machine	Refrig- ator	Gas stove	Elect- ricity	Water	Natural gas
Urban
1977	–	–	22.6	5.9	–	2.4	36.5	40.1	–	–	–
1984	71.3	20.1	79.0	17.2	21.3	32.3	90.7	84.5	99.5	96.2	8.5
1989	73.6	17.9	83.9	17.2	27.4	38.4	92.4	88.7	99.6	96.0	16.7
1994	74.2	25.0	93.5	17.1	42.4	48.4	95.1	93.0	99.7	97.9	42.0
1999	74.2	26.4	95.3	17.4	53.7	52.4	97.0	95.6	98.9	99.9	60.0
2004	68.3	28.3	97.5	25.8	81.2	64.3	98.5	97.9	100.0	99.1	80.1
Rural
1977	–	–	3.2	1.4	0.4	–	7.6	–	16.2	11.7	–
1984	89.4	–	25.6	2.8	–	–	35.5	45.5	57.1	43.9	0.2
1989	89.7	–	42.8	3.6	–	–	51.7	58.8	71.2	56.9	0.9
1994	87.6	16.3	68.1	4.2	6.0	12.3	69.0	72.6	83.6	72.2	2.3
1999	86.8	18.2	77.9	5.1	16.0	15.7	81.8	80.0	82.4	94.5	2.9
2004	86.0	21.3	89.1	9.3	49.4	23.4	92.4	89.5	98.3	89.0	14.1

Note: Homeowner is percent who own their home; living area is square meters per person; all other numbers are percents
Source: Author's calculations using HEIS, various years.

Have the poor experienced improvements in basic services and home appliance ownership to the same extent as the average family? This question can be answered for the years after 1984 for which unit record data are available. Changes in the indicators of interest for different expenditure quintiles are presented in Figure 11 (and Table 11 in Appendix B). Ownership of household appliances and access to basic services for poorer households (quintile 1) have increased at least as much as for richer households (quintile 5). In urban areas, by 2004 differences between the top and bottom quintiles had decreased considerably. The rich and poor households had about equal access to basic services, except for natural gas. Nearly two-third of households in all expenditure quintiles own their homes. The bottom quintile enjoyed an ownership rate of 63 percent for telephone, 93.4 percent for TV, 95.7 percent for refrigerators, and 33.4 percent for washing machines. Nearly all had access to electricity and piped water, and 62.8 percent were hooked up to the natural gas network.

In rural areas, too, except for natural gas, there is a high degree of basic service delivery to poorer homes. In 2004, 95 percent of the poorest quintile of households had access to electricity, 79.4 percent to water. Because of the wide dispersion of over 60,000 rural communities scattered across the country, only 7.7 percent had been hooked up to the natural gas network. In ownership of basic appliances, poorer households naturally lag behind, as they have less income to buy them with. Nevertheless they have made significant gains. TV ownership among the lowest quintile increased from 7 percent in 1984 to 76.7 percent in 2004, refrigerator from 12.7 percent to 80.4 percent, and gas stove from 21 percent to 75.8 percent.

In sum, both in terms of access to basic services and ownership of major home appliances, the poor have made significant gains in the last two decades. The gains in access to basic services, where the role of public sector has been critical, have been more impressive than in ownership of appliances, which depend in large part on households' own resources. Whether these gains would have happened in Iran anyway or they are, or considered to be, the product of the Revolution is impossible to say. What is obvious is that the comparison

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between what the poor had access to before the Revolution and in 2004 favors the Islamic regime. Whether Iranians, especially the young who have no personal memory of the past, are content or dissatisfied with the progress made since the Revolution depends very much on the kind of standard of comparison they pick for life in present day Iran: life in Iran as it was in the 1970s, as they imagine it to have been, or even life in some advanced country where a distant relative now calls home.

Figure 11: Ownership of appliances and access to services by expenditure quintile, 1984-2004

40
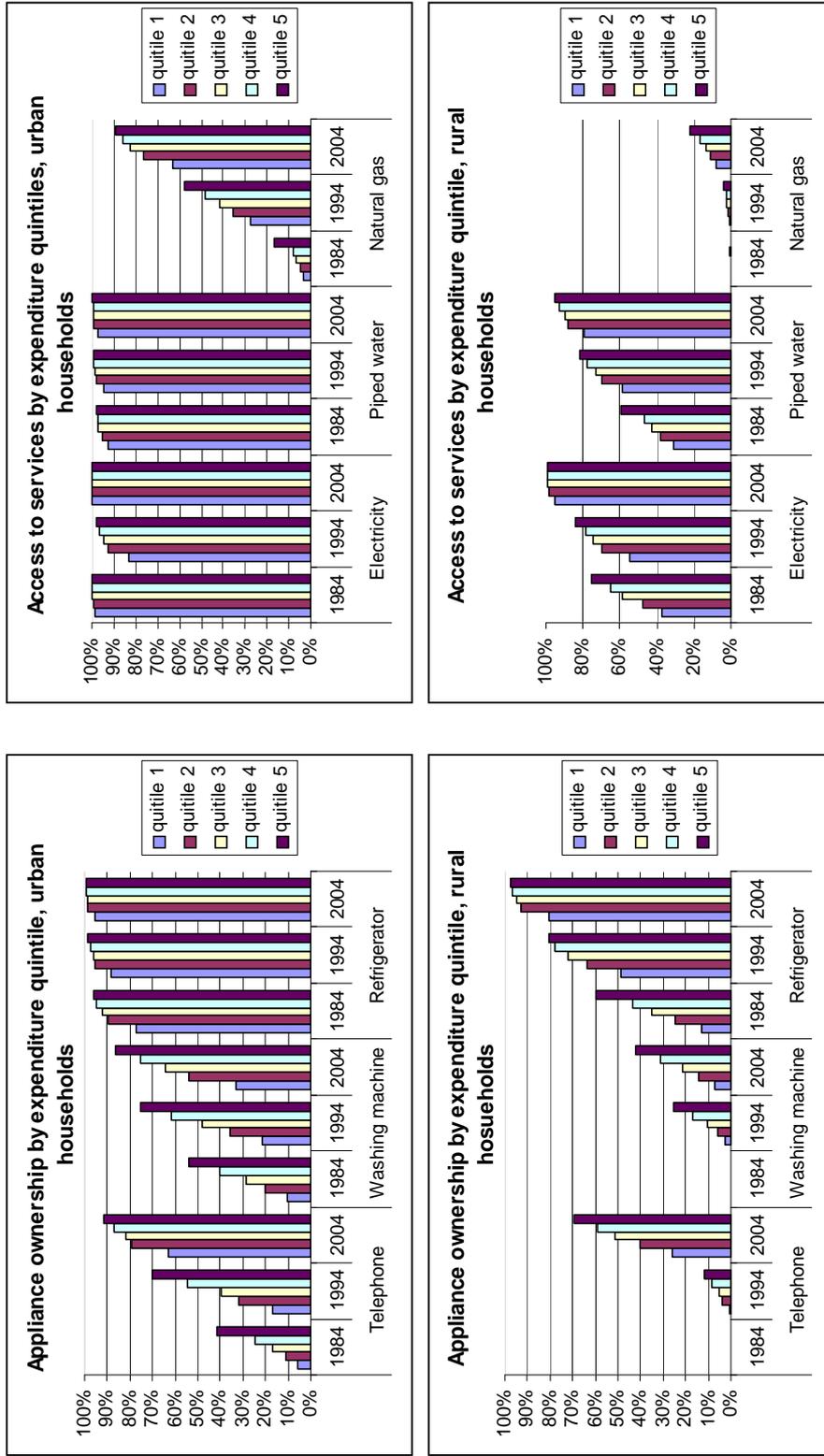
7 Concluding remarks

This paper describes how the poor have fared in the last three decades of revolutionary change in Iran. It focuses on the extent of poverty and inequality and how they have evolved during a period of tumultus change beginning with the years before the Islamic Revolution in 1979 up to 2004. Using published evidence from the 1970s and survey data for 1984-2004, I compare economic welfare on average and for the poor before and after the Revolution. I show that the drastic economic losses of the first decade of the Revolution have been reversed by economic growth in the last 15 years, restoring average incomes to their pre-revolutionary level. For the poor, the recovery has meant much more than restoration: they have made substantial gains in income, consumption, and access to basic services. As a result, poverty has declined substantially, and without increase in inequality. I show that the poor have gained significantly from publicly provided basic services, such as electricity and safe water. Greater access to electricity has increased ownership of home appliances, such as refrigerators and gas stoves, raising the quality of life for the poor. Extension of electricity and safe water have enabled health services to operate effectively in poorer rural and urban areas, resulting in substantial decline in infant mortality and lower fertility.

What appears as a story of economic stagnation when viewed as a comparison of average economic indicators before and after the Revolution, is in fact a story of significant improvement in the quality of life of the poor. The improvements documented in this paper corroborate what we already know from other indicators, namely lower infant mortality, lower fertility and higher child education that have occurred across geographic and income groups (Salehi-Isfahani 2005). Furthermore, unlike the 1970s, economic growth of the last 15 years has not been at the expense of inequality. There is no evidence that the distributions of incomes and expenditures have worsened over time. While improving their lot in absolute terms, the poor have managed to maintain their relative status vis-á-vis the rich.

I discuss the implication of the timing of the periods of decline in poverty with economic

reform and rise in oil income. I find little evidence to supports the thesis that economic reforms of the last 15 years have left the poor behind and have thereby contributed to a populist backlash in the 2005 presidential election. In fact, the reform period under the Rafsanjani and Khatami administrations coincided with substantial decline in poverty. It is difficult, however, to decide from the circumstantial evidence presented here the extent to which reforms were actually responsible for decline in poverty. A strong case can be made that while a number of policies favored the poor, rising oil incomes played the critical role in poverty reduction. These policies ranged from subsidy for food, energy, and medicine, to investment in electricity and water, to health and family planning. Without careful analysis of the data, it is difficult to say anything specific about which of these programs and policies had the greatest impact on the decline in poverty. But it is safe to argue that without them the effect of rising oil revenues may not have been as beneficial to the poor as they have been.

An important implication of the results of this paper is that, contrary to widely held opinion, the rise of populism in Iran cannot be a consequence of rising poverty and inequality. Nor is there any evidence that they are a reaction to economic and political reform. Following a short visit to Tehran on the eve of the 2005 presidential elections, Michael Ignatieff describes the dilemma felt by reformers in Iran: "The political task ahead for the liberal thinkers of Iran is to find a program that links human rights and democracy to the poor's economic grievances." If his assumption, shared by many who were surprised by the election's unexpected results, that neglect of the poor fueled popular discontent leading to electoral defeat, lacks empirical support, the change in focus he suggests may not be the cure.

This is not to deny that most Iranians seem dissatisfied with their economic conditions. Anyone familiar with Iranian society knows about the prominence of economic justice in the public psyche and can confirm that reports of rising poverty and inequality, though factually incorrect, accurately reflect the people's sense that they live in desperate times.

The question then arises what explains their sense of lost ground relative to thirty years ago, or relative to others in their own generation. Is it possible that the frustration they are expressing is ?

Several possibilities come to mind. First, economic insecurity may be on the rise, such that even for social groups who have benefited from recent growth, individual anxiety overcomes collective gains. Lower poverty and stable inequality do not lower insecurity. When the reforms began 60 percent of wage and salary workers were employed in the public sector, compared to 40 percent in 2004 (Salehi-Isfahani 2005). Public sector jobs offered security and were coveted often despite lower pay. Labor regulations have tried to make private sector jobs as secure but have failed as employers have shifted to short term contracts and part time work. An early move by Ahmadinejad government has been to outlaw short term contracts in state-owned companies. The reform of foregin trade in recent years, which ended all non-tariff barriers and lowered the average tariff rate, increased competitive pressures from East Asia on some sectors of Iran's economy, such as textiles, and reduced job security in those sectors.

Second, there may be frustrations inherent to economic growth in a distributive economy in which incomes increase not just from increase in individual productivity but also from greater access to oil income. Most Iranians who express dissatisfaction with their economic condition have exaggerated ideas about the size of oil income and are suspicious of how it is distributed. Corruption is the reason why people suspect the oil money has not found its way to their dinner table, to paraphrase Ahmadinejad's effective election slogan. For the last thirty years large oil rents have blurred the connection between personal productivity and income for most Iranians. Because rewards seem detached from productivity, be it real or imagined, individuals lack a basis on which to build their aspirations and expectations. The faster the rise in average incomes, the larger they infer must be the pie that is being divided, and greater the possibility that one's own share of the bounty is not large enough. Reduction in poverty would seems less impressive if the poor believe that their gains are

small compared to gains of others. Under these circumstances, economic growth, even when it lifts all incomes evenly, may create social envy and resentment and even lead to political instability. It is a remarkable but little noticed fact that significant popular political shifts in Iran, first in late 1970s and again in 2005, have taken place during economic booms. Lack of transparency in general, and about how the oil rent is distributed in particular, can further fuel envy. A recent article in the *New York Times* reported claims of $200 billion invested by Iranian in Dubai.[27] Wild speculations of this type about accumulation of wealth by Iranians inside and outside Iran is indicative of how little information exists about the size and the distribution of the oil rent in Iran.

Finally, there is the intriguing possibility suggested by the polarization literature (Duclos, Esteban, and Ray 2004), that Iranian society may be more polarized even though it is less unequal. One implication of this literature might be that the poor are better off, but they are more similar to each other–all have tv, basic education, etc–but as a group remain distinct from other social groups. Polarization may have increased along social as well as economic lines.

These possibilities suggest that the shift to populism in Iran may have more complex reasons than either a failure to revive economic growth, or for economic growth to reduce poverty. Consequently, abandoning economic reform by going back to the policies of the 1980s, re-introducing price controls and spending even more on subsidies, may not be the right response to the setback suffered by reformists at the polls or the rise of populism. At this point we simply do not know enough about the links between economic change and social and political change in Iran to draw such grand conclusions.

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[27] "Young Iranians Follow Dreams to Dubai," *New York Times* December 4, 2005.

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A   Data

Household Expenditure and Income Surveys (HEIS) have been conducted annually by the Statistical Center of Iran (SCI) since the 1968. They are available in unit record from since 1984. All surveys are nationally representative but not all households have equal probability of selection. The sampling method is Probabilities Proportional to Size (PPS). The sample is stratified according to rural and urban residence which, in effect, treats the rural and urban surveys as separate surveys even though they have the same questionnaires and are collected on the same schedule. Sampled households are distributed evenly throughout the year with 1/12 of households surveyed each month. Both samples (rural and urban) are cluster based. First, the number of observations (households) for each province is determined based on the province population and variance of the variables of interest in the province. The latter consideration implies that not all households have the same probability of selection into the survey. Therefore sampling weights equal to the inverse of probability of selection must be used in all statistical calculations. Second, the number of primary sampling units (PSU) in each province is determined by dividing the sample size for the province by 5. PSU's correspond to census tracts, which are chosen randomly, and from each of which 5 households are randomly selected. Sample sizes vary from 5,759 households in 1986 to 36,591 in 1995. The total number of households in the combined data set is about 433,000 households and about 2.3 million individuals.

The survey questionnaires contain eight sections. Section 1 is the demographics module, which asks about age, sex, marital status, relationship to the head of the household, education, and employment status of individuals. Section 2 contains information on household ownership of assets and amenities. Section 3 records very detailed information on food expenditures; food expenditures can be aggregated into broader groups such as grains, meats, dairy, and so on. Section 4 reports on non-food expenditures, including non-durable and semi-durable goods such as clothing and other household goods, as well as rent and utilities. The recall period for these expenditures is the last 30 days, which is rather long for consumption (in some earlier surveys the recall period for food was only the last two days). Section 5 records expenditures on durables, which include appliances, furniture, vehicles, bikes, as well as expenditures on vacation travel, school tuition, or housing extension. Modules 6, 7, and 8 record individual information on wage and salary income, self-employment income, and other income from retirement, rent, or other sources, respectively. Expenditures include implied rent but not the value of services provided by consumer durable goods. However, expenditures on durables for each year are included, which provides a good approximation for the distribution of durable services for households in a given year.

B   Tables

Table 6: Gross Domestic Production and Consumption Per Capita, 1955-2004

	GDPPC_Penn	GDPPC_CBI	GDPPC_WDI	PrivateCPC
	(1996 PPP$)	(1997 rialsx1000)	(2000 PPP$)	(1997 rialsx1000)
1955	1,736.1	–	–	–
1956	1,769.2	–	–	–
1957	1,969.7	–	–	–
1958	2,091.0	–	–	–
1959	2,279.8	2,077.2	–	1,277.3
1960	2,668.3	2,232.0	–	1,220.2
1961	2,679.3	2,335.0	–	1,187.7
1962	2,938.1	2,417.6	–	1,174.8
1963	3,010.7	2,485.8	–	1,152.9
1964	3,053.0	2,599.1	–	1,078.4
1965	3,434.2	2,926.0	–	1,093.7
1966	3,567.2	3,109.5	–	1,157.4
1967	3,781.7	3,346.2	–	1,246.3
1968	4,129.1	3,644.2	–	1,196.0
1969	4,465.3	3,989.3	–	1,257.6
1970	5,225.0	4,255.8	–	1,350.6
1971	4,935.6	4,697.4	–	1,508.7
1972	5,433.5	5,326.3	–	1,551.4
1973	5,884.4	5,559.1	–	1,711.1
1974	5,606.6	6,075.0	–	2,035.7
1975	5,024.5	6,181.5	6,984.0	2,605.7
1976	5,899.1	7,051.2	7,976.0	2,528.2
1977	5,217.4	6,678.4	7,626.0	2,606.0
1978	5,132.8	5,991.1	6,547.0	2,558.9
1979	4,943.0	5,542.6	5,823.0	2,546.4
1980	4,028.6	4,529.6	4,897.0	2,339.1
1981	3,618.8	4,156.7	4,586.0	2,317.5
1982	4,211.2	4,482.9	5,097.0	2,392.8
1983	4,107.5	4,768.4	5,549.0	2,635.4
1984	4,206.4	4,479.3	5,377.0	2,672.7
1985	4,435.5	4,392.8	5,266.0	2,616.3
1986	4,080.0	3,847.4	4,620.0	2,262.9
1987	3,895.5	3,681.0	4,476.0	2,063.5
1988	3,769.7	3,371.0	4,156.0	2,019.5
1989	3,711.7	3,468.5	4,230.0	2,028.1
1990	3,881.7	3,856.1	4,598.0	2,031.1
1991	4,027.8	4,223.9	5,015.0	2,208.7
1992	4,301.3	4,302.5	5,236.0	2,292.8
1993	4,591.5	4,286.2	5,268.0	2,350.8
1994	4,963.3	4,235.4	5,251.0	2,379.6
1995	5,013.1	4,292.6	5,295.0	2,344.3
1996	5,333.2	4,487.8	5,402.0	2,247.2
1997	5,458.4	4,551.4	5,606.0	2,303.2
1998	5,538.5	4,623.4	5,641.0	2,418.8
1999	5,670.5	4,643.5	5,647.0	2,442.2
2000	5,994.6	4,822.9	5,576.0	2,572.6
2001	–	4,934.0	5,738.0	2,639.2
2002	–	5,257.6	6,277.0	2,895.9
2003	–	5,559.6	6,608.0	2,969.9
2004	–	5,774.5	6,983.0	3,168.3

Sources: Summers, Heston, and Aten (2002), World Bank (2005), Central Bank of Iran, *Annual Report*, various years.

Table 7: Per capita income and expenditures per day in 2004 rials, 1974-2004

	income		expenditures	
	Rural	Urban	Rural	Urban
1974	8525	18218	12775	22901
1975	9815	28948	13508	30075
1976	9098	28149	11448	28392
1977	10013	27350	12475	26709
1978	10231	–	12501	–
1979	10056	25189	13599	25862
1980	–	24133	–	21623
1981	–	–	–	–
1982	10210	19201	13169	23906
1983	10513	22064	13626	26742
1984	10145	22769	12970	27311
1985	10285	22508	13122	27779
1986	9366	20415	12545	23820
1987	9190	13505	11544	16479
1988	9134	13024	10639	17498
1989	9749	12215	12590	17365
1990	9720	15860	12643	18094
1991	10458	18550	12921	19972
1992	11045	19719	12925	21136
1993	10735	19948	12863	20791
1994	10530	18857	12437	20544
1995	9488	16319	12387	19666
1996	10155	18549	12097	20767
1997	11393	19542	13016	21526
1998	11582	20985	13357	23087
1999	11645	21304	13736	23757
2000	11667	23769	14015	25667
2001	12430	24833	14092	26937
2002	13639	27356	15356	28898
2003	15273	28099	16312	29380
2004	15687	30187	18871	32876

Sources: Statistical Center of Iran (http://amar.sci.org.ir)

Table 8: Poverty lines, Consumer Price Index, and PPP exchange rates

| | Assadzadeh & Paul | | USD2 | | CPI | | PPP |
	Rural	Urban	Rural	Urban	Rural	Urban	(rials per $)
1975	46.3	65.6	76.7	76.7	0.60	0.60	38.4
1976	53.9	76.5	82.8	82.8	0.70	0.70	41.4
1977	67.4	95.6	93.1	93.1	0.88	0.88	46.5
1978	73.6	104.3	96.4	96.4	0.96	0.96	48.2
1979	82.6	117.1	113.2	113.2	1.08	1.08	56.6
1980	102.1	144.7	128.2	128.2	1.33	1.33	64.1
1981	125.4	177.7	145.9	145.9	1.63	1.63	72.9
1982	149.5	212.0	157.1	157.1	1.95	1.95	78.5
1983	171.7	243.4	169.8	169.8	2.24	2.24	84.9
1984	194.3	265.6	179.9	179.9	2.53	2.44	89.9
1985	201.2	276.5	182.6	182.6	2.62	2.54	91.3
1986	236.5	342.9	202.1	202.1	3.08	3.15	101.0
1987	301.0	437.6	241.5	241.5	3.92	4.02	120.8
1988	367.8	568.2	273.2	273.2	4.79	5.22	136.6
1989	430.0	676.0	314.2	314.2	5.60	6.21	157.1
1990	466.9	741.3	359.0	359.0	6.08	6.81	179.5
1991	537.5	885.0	428.0	428.0	7.00	8.13	214.0
1992	659.6	1073.3	508.0	508.0	8.59	9.86	254.0
1993	809.3	1353.1	757.1	757.1	10.54	12.43	378.5
1994	1162.5	1823.3	963.0	963.0	15.14	16.75	481.5
1995	1786.8	2698.6	1356.5	1356.5	23.27	24.79	678.2
1996	2185.3	3309.2	1559.1	1559.1	28.46	30.40	779.6
1997	2531.6	3892.7	1834.5	1834.5	32.97	35.76	917.3
1998	3133.6	4562.2	1948.6	1948.6	40.81	41.91	974.3
1999	3867.7	5454.8	2236.3	2236.3	50.37	50.11	1118.2
2000	4464.3	6214.6	3106.4	3106.4	58.14	57.09	1553.2
2001	4966.5	7050.6	3603.9	3603.9	64.68	64.77	1801.9
2002	5781.2	8183.8	4232.4	4232.4	75.29	75.18	2116.2
2003	6730.3	9456.4	4839.6	4839.6	87.65	86.87	2419.8
2004	7678.6	10885.7	5550.6	5550.6	100.00	100.00	2775.3

Sources: Assadzadeh and Paul (2004); CPI, the Central Bank of Iran; PPP, World Bank (2005).

| | Household | | | | Individual | | | |
| | Assadzadeh-Paul | | USD2 | | Assadzadeh-Paul | | USD2 | |
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1975	0.230		0.472		0.042		0.352	
1976								
1977	0.426	0.283	0.657	0.275	0.426	0.251	0.595	0.244
1978	0.450		0.604		0.320		0.547	
1979		0.263		0.252		0.197		0.183
1980		0.230		0.160		0.208		0.142
1981								
1982	0.352		0.377		0.350		0.402	
1983								
1984	0.351	0.179	0.309	0.079	0.365	0.204	0.321	0.087
1985	0.339	0.187	0.288	0.078	0.356	0.214	0.301	0.089
1986	0.445	0.284	0.355	0.109	0.457	0.328	0.364	0.129
1987	0.416	0.341	0.283	0.117	0.438	0.395	0.294	0.141
1988	0.447	0.335	0.261	0.078	0.467	0.388	0.268	0.094
1989	0.432	0.347	0.252	0.090	0.445	0.400	0.254	0.107
1990	0.359	0.312	0.243	0.061	0.380	0.367	0.254	0.075
1991	0.352	0.275	0.254	0.058	0.377	0.333	0.272	0.073
1992	0.317	0.243	0.215	0.045	0.340	0.293	0.229	0.056
1993	0.331	0.237	0.294	0.060	0.357	0.290	0.317	0.079
1994	0.330	0.248	0.237	0.051	0.359	0.304	0.258	0.065
1995	0.347	0.271	0.223	0.055	0.371	0.326	0.235	0.070
1996	0.355	0.246	0.194	0.040	0.388	0.299	0.211	0.052
1997	0.315	0.220	0.173	0.031	0.344	0.270	0.191	0.041
1998	0.319	0.194	0.132	0.019	0.349	0.241	0.145	0.024
1999	0.285	0.174	0.090	0.011	0.320	0.219	0.101	0.015
2000	0.279	0.149	0.134	0.021	0.313	0.190	0.152	0.027
2001	0.272	0.146	0.142	0.020	0.306	0.187	0.161	0.029
2002	0.230	0.115	0.118	0.017	0.262	0.150	0.135	0.023
2003	0.183	0.092	0.086	0.012	0.216	0.122	0.103	0.017
2004	0.140	0.077	0.059	0.010	0.166	0.105	0.071	0.012

Note: Per capita income includes monetary and in-kind transfers; per capita earnings is wage and salary income plus income from self-employment.

Sources: 1971-73, Pesaran (1976); 1977-83, Behdad (1989); 1984-2004, author's calculations using HEIS, various years.

Table 10: The Gini index of inequality of income and expenditures, 1971-2004

	Per capita expenditures			Household expenditures			Per capita income			Per capita earnings		
	Iran	Urban	Rural	Iran	Urban	Rural	Iran	Urban	Rural	Iran	Urban	Rural
1971					0.415	0.390						
1972					0.403	0.366						
1973					0.467	0.407						
1977					0.500	0.440						
1978												
1979					0.470	0.480						
1980					0.404							
1984	0.452	0.424	0.380	0.453	0.421	0.430	0.451	0.414	0.432	0.529	0.453	0.558
1985	0.452	0.429	0.374	0.455	0.425	0.425	0.479	0.453	0.430	0.544	0.485	0.538
1986	0.461	0.436	0.406	0.459	0.425	0.455	0.557	0.529	0.524	0.636	0.574	0.665
1987	0.448	0.450	0.365	0.447	0.439	0.412	0.489	0.488	0.449	0.522	0.476	0.536
1988	0.430	0.418	0.348	0.431	0.412	0.403	0.431	0.432	0.425	0.497	0.452	0.523
1989	0.438	0.430	0.366	0.440	0.425	0.422	0.453	0.458	0.416	0.527	0.502	0.514
1990	0.435	0.416	0.422	0.430	0.403	0.453	0.483	0.465	0.481	0.528	0.499	0.533
1991	0.461	0.439	0.435	0.449	0.421	0.463	0.504	0.496	0.476	0.552	0.539	0.531
1992	0.448	0.428	0.407	0.434	0.410	0.435	0.503	0.494	0.468	0.546	0.530	0.521
1993	0.436	0.411	0.390	0.426	0.399	0.424	0.477	0.460	0.434	0.525	0.502	0.486
1994	0.433	0.413	0.395	0.421	0.395	0.429	0.476	0.469	0.448	0.524	0.516	0.498
1995	0.435	0.421	0.400	0.427	0.406	0.439	0.457	0.443	0.455	0.506	0.489	0.512
1996	0.439	0.420	0.393	0.425	0.404	0.423	0.465	0.457	0.439	0.512	0.506	0.484
1997	0.435	0.416	0.396	0.419	0.396	0.424	0.445	0.429	0.440	0.494	0.479	0.490
1998	0.438	0.414	0.416	0.421	0.394	0.440	0.447	0.413	0.446	0.498	0.482	0.495
1999	0.434	0.416	0.405	0.417	0.397	0.424	0.485	0.460	0.463	0.541	0.535	0.515
2000	0.441	0.421	0.400	0.422	0.403	0.422	0.465	0.435	0.439	0.529	0.511	0.521
2001	0.450	0.432	0.394	0.431	0.417	0.414	0.446	0.418	0.414	0.503	0.486	0.490
2002	0.449	0.430	0.392	0.424	0.407	0.413	0.456	0.429	0.415	0.513	0.501	0.486
2003	0.438	0.413	0.372	0.404	0.388	0.392	0.432	0.410	0.417	0.485	0.472	0.484
2004	0.436	0.416	0.400	0.413	0.395	0.415	0.441	0.422	0.413	0.511	0.506	0.486

Note: Per capita income includes monetary and in-kind transfers; per capita earnings is wage and salary income plus income from self-employment.
Source: 1971-73, Pesaran (1976); 1977-83, Behdad (1989); 1984-2004, author's calculations using HEIS, various years.

Table 11: Ownership of home and appliances, and access to services by expenditure quintiles, 1984-2004

Quintile	Home owner	Living area	TV	Car	Phone	Washing machine	Refrig- ator	Gas stove	Elect- ricity	Water	Natural gas
Urban											
1984											
1	69.8	11.9	60.0	2.4	5.7	10.3	77.2	65.6	98.5	92.3	3.4
2	73.3	14.0	74.4	5.7	11.1	20.3	89.7	81.5	99.6	95.2	4.9
3	73.9	17.5	82.3	13.4	16.6	28.8	92.4	86.9	99.7	97.0	6.7
4	71.2	20.6	85.4	19.6	24.6	40.0	94.7	90.5	99.8	97.2	8.3
5	68.9	32.6	87.9	37.9	41.7	53.7	96.0	93.4	99.9	98.2	16.8
1994											
1	73.6	13.3	86.1	3.3	16.6	21.6	88.3	98.9	83.4	94.4	27.6
2	73.8	18.1	93.4	6.9	31.8	35.5	95.5	99.7	92.4	98.0	35.7
3	75.4	22.0	94.8	14.2	39.7	48.3	96.3	99.9	94.5	98.8	41.3
4	73.7	27.7	96.1	22.1	54.5	61.8	97.2	99.9	96.7	99.0	48.2
5	74.4	44.0	97.1	39.5	69.9	75.6	98.6	99.9	98.0	99.6	57.5
2004											
1	65.7	16.8	93.4	5.7	63.0	33.4	95.7	93.7	100.0	97.1	62.8
2	67.5	21.9	98.0	11.4	79.1	53.6	99.0	98.1	100.0	99.1	76.2
3	67.2	25.9	97.3	18.9	81.7	64.2	98.8	98.0	100.0	99.5	82.4
4	70.6	30.6	98.8	31.7	86.7	75.4	99.1	99.2	100.0	99.5	85.8
5	69.9	41.9	98.9	53.0	91.5	86.2	99.4	99.6	100.0	99.8	89.2
Rural											
1984											
1	88.3	.	7.1	0.2			12.7	21.0	37.0	31.0	0.1
2	91.2	.	15.0	0.5			24.5	36.5	47.8	38.3	0.2
3	90.6	.	23.5	1.1	.	.	35.1	44.9	58.8	42.6	0.2
4	90.3	.	32.2	2.0	.	.	43.3	54.2	64.8	47.1	0.4
5	86.8	.	48.2	10.0	.	.	59.5	68.5	75.2	59.2	0.3
1994											
1	87.6	12.0	49.2	0.8	0.8	2.6	49.0	74.6	54.5	58.5	0.9
2	89.4	13.3	64.8	1.6	3.6	6.0	63.9	82.1	69.5	69.5	1.6
3	88.0	15.5	70.6	3.3	5.5	10.1	72.1	84.0	74.9	72.7	2.6
4	87.0	17.6	76.6	4.0	8.2	16.8	78.0	88.0	78.9	77.4	2.4
5	86.2	22.8	78.1	11.0	11.6	25.3	80.7	88.9	84.2	81.9	3.6
2004											
1	84.7	14.0	76.7	1.7	26.0	6.9	80.4	75.8	95.1	79.4	7.7
2	88.4	17.6	88.2	3.5	40.4	14.3	92.6	88.7	98.3	88.1	11.0
3	86.0	20.2	90.9	5.2	51.0	21.5	94.6	92.0	99.0	89.4	13.3
4	86.2	23.5	93.5	9.7	59.3	31.1	96.5	94.3	99.3	92.8	16.4
5	84.6	30.8	95.9	25.2	69.3	42.2	97.5	96.6	99.6	94.9	21.9

Note: Homeowner in column 2 is percent who own their home; living area in column 3 is square meters per person; all other columns are percents.
Source: Author's calculations using HEIS, various years.