

Poverty, inequality, and populist politics in Iran

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Abstract Despite nearly three decades of revolutionary government rule, poverty and inequality remain the central issues of political debate in Iran. The unexpected electoral victory of Ahmadinejad, the populist candidate in the 2005 presidential election, has been widely attributed to rising poverty and inequity. Using household survey data, I examine the trends in poverty and inequality for the last three decades and show that this thesis is not grounded in facts. Survey data show that poverty has substantially declined in recent years, and is low by international standards and in comparison with pre-revolution years. This finding is consistent with pro-poor policies of the Islamic government, mainly in provision of basic infrastructure such as electricity, safe drinking water, and health. However, the same policies have not been as effective in reducing inequality, which, after an initial decline following the Revolution, has remained basically constant in the post-Revolution period.

Keywords Poverty · Inequality · Iran · Islamic Revolution · Populism

JEL Classification D63 · D72 · N35

1 Introduction

The unexpected landslide victory of Mahmoud Ahmadinejad in Iran's presidential election in 2005 has been attributed by commentators to voters' concern with poverty

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and economic injustice.¹ More generally, the renewal of populist politics in Iran has been blamed on “frustration with widening income gaps” and widespread poverty which “propels Iran toward extremist politics.”² Ahmadinejad’s campaign platform promised a more equitable distribution of the oil wealth and his campaign slogan to “take the oil money to people’s dinner table”, appears to have resonated widely with voters, trumping calls for democratic reform from his better known reformist rivals. Since his election, his populist movement has established itself as “the second wave” of the Islamic Revolution and has seriously affected both the internal and external politics of Iran. Within Iran, the election has shifted conventional wisdom on the roots of political discontent in Iran away from lack of democracy to poverty and inequality.

The claims of widespread poverty and rising inequality raise important questions about the impact of the Islamic Revolution on the poor who form its social base. The Revolution’s leader, Ayatollah Khomeini, repeatedly declared that the Revolution belonged to the disinherited (*mostazafan*) and the barefooted (*paberehnegan*), and promised large scale redistribution of income and wealth [8, 31].³ Has the Revolution really failed to deliver on its promises to the poor, as these claims suggest? A second question is whether the election was a rejection of pro-market reforms of the preceding decade. The populist politics of the first decade of the Revolution gradually lost steam as the war economy gave way to reform and reconstruction under the Rafsanjani (1989–1997) and Khatami (1997–2005) administrations. In the 1990s, the social agenda shifted from distribution to growth and the economy grew to recover much of the ground it had lost in the 1980s to revolution, war, and the collapse in oil prices. Does Ahmadinejad’s election signal the rejection of economic reforms and a return to the populist and redistributive policies of the Revolution’s first decade?

In this paper I examine the evidence on poverty and inequality during the last 30 years to help answer these questions. My findings, based on extensive survey data, do not support the claim that the poor have lost ground in recent years or that the Revolution has generally failed its poorest and most ardent supporters. The evidence shows that poverty has declined substantially compared to before the Revolution, with most of the decline occurring in the last 15 years when civil society and market reforms have been slowly replacing revolutionary fervor and government control. The proportion of individuals under the international standard of \$2 per day (\$2.90 in 2005) has been in single digits in the last several years, about one-fourth of its level before the Revolution, and is quite low by the standards of developing countries. Nor do I find any evidence that inequality has increased recently, though the gains in redistribution have been much less impressive. Inequality fell immediately after the Revolution but has remained steady for the past two decades. After initially falling by about 7 percentage points in the early years of the Revolution, the Gini coefficient

¹See, for example, Michael Ignatieff, “Iranian lessons,” *New York Times*, July 17, 2005; Abbas Milani, “Regime change”, *Wall Street Journal*, October 31, 2005; Amuzegar [3], Ghamari [17], and Sazgara [35].

²Afshin Molavi, *New York Times*, November 3, 2005.

³The 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.”

of inequality has stayed relatively high, at about 0.42–0.45, where it was before the oil boom of the 1970s.

To be sure, populism can feed on poverty and inequality, but in Iran's case the premise for the conventional wisdom that poverty and inequality have contributed to the recent rise in populism is not supported by any evidence. So, the implication of my findings is that one has to look deeper into Iran's political economy, beyond poverty and inequality, to understand political behavior in Iran.

I do not directly answer the question of whether the pro-market economic reforms of the 1990s have helped poverty to fall or hindered improvements in inequality. Shifting priorities and changing policies during the nearly three decades of Islamic rule have made it difficult to decide, for voters and researchers, how to assign credit for gains by the poor or the blame for why inequality has failed to improve. The Islamic Revolution has been as a whole a very successful anti-poverty endeavor. During the war the government introduced a wide ranging system of rationing of basic commodities, although these policies proved insufficient to shield the poor from economic hardship and poverty rates rose sharply. Direct assistance through a network of semi-public charities expanded and has been effective in reaching the poorest families [15]. The government has maintained a generous system of subsidies for food, medicine, and fuel at huge cost – about 10% of the GDP – that benefits the poor as well as the non-poor. Arguably, the government's most successful anti-poverty program has been to build infrastructure in remote rural areas and poor urban neighborhoods, bringing electricity, safe drinking water, health services, and schools to millions of poor households. The impact of these programs on the poor in terms of more education, better health, and lower fertility has been dramatic. Iran's ambitious rural health and family planning program is widely acknowledged as a successful program and a model for the developing world [1, 18, 33].

In light of these policies the stability of inequality in post-Revolution Iran may seem surprising. Why would the Gini index of inequality in 2002 be the same as in 1972 with a social revolution in between? After the Revolution, in addition to programs that empowered the poor, the strong revolutionary energy unleashed by the overthrow of monarchy in 1979 that led to wide-ranging expropriations and nationalizations could have lowered inequality.⁴ The large exodus of Iranians with property and human capital who fled the Revolution and the war might have also resulted in lower inequality. One would have expected such tumult to produce a substantial change in inequality, but except for the initial decline inequality has stayed put.

The main contribution of this paper is to provide a consistent series on poverty and inequality from before the Revolution up to the present. For most of the post-Revolution period for which unit record data is available (1984–2005) I am able to provide a detailed and reliable picture of poverty and inequality. Such data are not available for the 1970s so I have to rely on published survey results. There are very few studies of poverty and income distribution available in English, but none that cover the entire period. Assadzadeh and Paul [5] analyze changes in poverty during 1984–1993, but there are no studies to my knowledge of the period before the Revolution and none in English for after 1993. There are several careful studies of poverty which are available in Persian (e.g., Pajouyan [27] and Tabibian [38]),

⁴For a description of expropriation and interventionist policies in the early years of the Revolution see, Behdad [7] and Nomani and Behdad [25].

but, though they all use the same data, they employ different methods of measuring poverty and sometimes reach different conclusions. As a result, widely varying poverty rates quoted inside and outside Iran have led to confusion and inhibited the development of a productive public debate in Iran.⁵

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, showing that the standard of living has on average been restored to its pre-Revolution level. This provides the context for understanding changes in poverty and inequality discussed in Sections 4 and 5, which discuss, respectively, the trends in poverty and inequality. Section 6 concludes with a discussion of the implications of the findings of this paper for the role of distributional issues in Iranian politics.

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

The 1979 Revolution broke a 20-year period of rising living standards, making the post-Revolution economic decline seem like an unprecedented disaster. During 1960–1977, GDP per capita grew at 6.6% per year, allowing it to triple in just one generation.⁶ By 1988, after the post-Revolution chaos, the 1980–1988 war with Iraq, and the oil price collapse of 1986 had all worked their way through the economic system, GDP per capita had fallen to only half of its 1977 level. Fifteen years later, economic growth had brought incomes back to their pre-Revolution peak. Figures 1 and 2 depict the rise and fall of incomes before and after the Revolution.⁷ They show that economic decline occurred in two phases marked by different but closely timed events. First came disruptions in property rights associated with the 1979 Revolution itself, widespread worker unrest in 1978 followed by weakened management in public and private enterprises that lasted for several years, and nationalization of banks and large enterprises [2, 6, 7]. The second year of the Revolution was marked by the Iraqi invasion of Iran which would last for 8 years wrecking the local economy in south-western Iran, causing major damage to productive infrastructure everywhere, and disrupting oil production and exports. These destructive events were capped by the oil price collapse of 1986 which reduced the price of Iran's main export to one-third, ending the oil price boom that had started a dozen years earlier in 1973.

⁵See, for example, Raisdana et al. [30] and Amuzegar [3]. Poverty rates on Iran available internationally range from 7.2% in World Bank [40], to 20% in United Nations [39], and 40% in Central Intelligence Agency [11].

⁶I 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.

⁷Figure 1 uses national income data from three sources, Penn World Tables [37], World Development Indicators (WDI) [40], and the Central Bank of Iran (CBI). The first two series correct for differences in the cost of living between Iran and the USA 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.

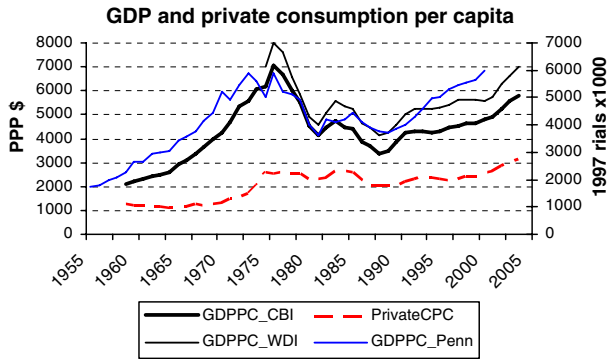


Fig. 1 The rise and fall of GDP per capita, 1955–2005. *Left axis* GDPPC_Penn (GDP per capita, RGDPCCH, Penn World Tables Mark 6.1, 1996 PPP US dollars), and GDPPC_WDI (World Bank, 2000 PPP US dollars). PPP dollars correct for differences in purchasing power between Iran and the USA. *Right axis* GDPPC_CBI (Central Bank of Iran, 1997 rials $\times 1,000$), PrivateCPC (private consumption per capita, 1997 rials $\times 1,000$). See also footnote no. 7. Sources: Summers et al. [37], World Bank [40], Central Bank of Iran, *Annual Report*, various years

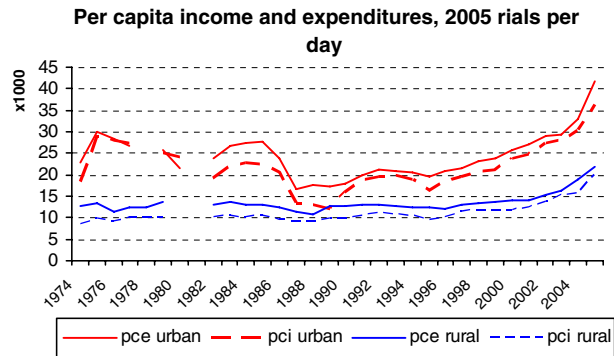
As a result of these shocks, by 1988 per capita GDP had fallen to half its pre-Revolution peak reached in 1976.⁸ From the viewpoint of the national economy, the extent of economic decline is breathtaking, especially considering the rapid pace of growth that it reversed (Fig. 1). Reversals of fortune of this magnitude in such a short period are rare in modern history. Fluctuations in personal incomes and consumption appear to have less dramatic. According to national income data in Fig. 1, private consumption grew at 4.5% between 1960–1977, which is about 2 percentage points less than GDP per capita, but was down by only 23% in 1988 compared to its peak in 1977. A decline of similar magnitude is observed in Fig. 2 in average household income and expenditures which are calculated from the survey data I use in this study.⁹

With the end of the war in 1988, the economy started a long period of reconstruction and recovery. By 2005, GDP per capita was back to its peak level of the 1970s. Per capita consumption more than recovered its pre-revolution level, having grown at 4.6% per year during 1997–2005. A brief oil boom in 1990–1991 helped jolt the economy but economic mismanagement, which caused a balance of payments crisis and import compression in 1993, resulted in 3 years of near zero growth during 1992–1995 (see Fig. 1 and Pesaran [29]).

⁸To 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 [40]: \$6,313 for Penn, \$7,976 for WDI, and \$8,072 for CBI (7,051,200 rials divided by the PPP exchange rate of 917 for 1997 and multiplied by the 1.05 inflation factor between 1997–2000).

⁹Household 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.

Fig. 2 Changes in the standard of living based on survey data, 1974–2005 (2005 rials). Average household expenditures divided by average household size and converted to 2005 prices using the consumer price indices for rural and urban areas. Source: Statistical Center of Iran, HEIS reports, various years



Three points are worth noting based on the evidence presented in this section. First, the fact that GDP per capita in recent years stands at about the same level as it did 30 years ago adds significance to the finding (shown below) of much lower poverty in 2005 compared to 1977. This observation does not necessarily mean that the overall distribution of income became more equal, but it does reflect the post-Revolution focus on improving the lot of the poor. The same claim could not be made if poverty had fallen while average incomes increased. Second, despite the recovery of GDP per capita and private consumption in recent years, the memory of the harsh times in the 1980s continues to haunt most Iranians. This is reflected in exaggerated comparisons of pre- and post-Revolution living standards, a favorite pastime for middle class Iranians, which is frequently reflected in accounts of visiting journalists, and which may explain why anecdotal accounts of widespread poverty find many believers.¹⁰

Third, as seen in Fig. 2 the rural economy has been remarkably insulated from the fluctuations in the national economy. While the urban economy was on the roller coaster ride of boom and bust, the average rural family did not directly experience the great boom of the 1970s nor the big crash of the 1980s, though its loss in terms of stagnant incomes for an entire generation (1974–2000) should not be minimized. Positive movement in rural living standards first appeared in the mid 1990s when per capita consumption started to crawl up, and then after 1999 when it accelerated. During this period, which corresponds to the Third Development Plan, rural consumption grew on a par with urban consumption, at 6.7% per year. Despite parity in terms of growth in recent years, 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, when the economy was at its worst. The ratio has fluctuated around 0.5 in recent years. The widening of the gap during periods of growth may be because more able rural

¹⁰According 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” [24], and still another account lowers it to one-half, “income today is less than half the pre-revolutionary level,” [35].

workers migrate to cities, leaving behind the old and the less well off. Since the rural-urban gap is an important source of overall inequality, reduction in overall inequality depends on the narrowing of this gap.

3 Data

All data used in measurement of poverty and inequality come from the Household Expenditure and Income Surveys (HEIS) conducted annually by the Statistical Center of Iran (SCI). These surveys have been conducted since 1963 in rural areas and 1968 in urban areas, but they are available in unit record from 1984 onwards. These surveys are composed of separate rural and urban surveys and are stratified at the provincial level. All surveys are nationally representative, but require the use of probability weights to correct for the fact that not all households have the same probability of selection. The number of households to be surveyed in each province is determined based on the province population and variance of the variables of interest in the province. 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 five households are randomly selected. Sampled households are distributed evenly throughout the year with 1/12 of the households surveyed each month. 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 surveys collect demographics information and basic income data but their focus is on expenditures, which are collected for some 600 items. The recall period for most items is the last 30 days, which is rather long for consumption (in the early years the recall period for food was only the last 2 days). The recall period for expenditures on durables, travel, school tuition, etc., are annual. Housing expenses include implied rent of owner-occupied homes. Data on wage and salary income are self reported, sometimes checked against receipts and invoices, while self-employment income is calculated from sales and costs.

A major drawback of these surveys for poverty analysis is that they record expenditures rather than consumption. However, this is not a major problem for us since we are mainly interested in the trend and not the level of poverty in any given year.¹¹

4 Poverty

I divide the discussion of the trend in poverty rates into two parts, a detailed examination of the post-Revolution period (1984–2004) for which unit record data are available, and a comparison of poverty before and after the Revolution based on

¹¹The difference between expenditure and consumption can be large, especially for some rural households who buy their food in bulk at harvest time. In 2001, about 24% 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 have placed them above the poverty line, even if they were in fact poor had the expenditure been annualized [32].

more limited data. Following accepted practice, I measure individual welfare with per capita expenditures (pce), which is more accurately measured than per capita income because individuals are more willing to reveal their expenditures than incomes. To assess the trend in poverty over time I rely on an absolute poverty line with a constant real value over time. Studies of poverty published in Iran, including a study done by the Management and Planning Organization [22], calculate poverty lines as the cost of a basket with the minimum intake of 2200 calories per person per day, separately calculated for rural and urban areas [27, 32, 38]. Using HEIS data, these studies rank households in rural and urban samples into 20 or 50 expenditure groups (based on total expenditures), and identify the group whose food expenditures amount to the minimum required calories (2,200 times the average family size for the group). They then take the average total household expenditure for this group as the poverty line. The preferred method, as described in Lanjouw [21], first identifies a representative basket consumed by low income groups, normalizes it to 2,200 calories, evaluates it at average prices in different locations, and finally adds on non-food expenditures to arrive at the poverty line. The closest study that uses this method for Iran, and the only study of poverty published in English, is by Assadzadeh and Paul [5]. They begin with food poverty lines for rural and urban areas which are the market values in 1989 of a balanced nutrition diet defined by the Iran Institute of Nutrition Sciences and Food Technology, with different sets of prices prevailing in rural and urban areas. They augment these values by the proportion of non-food expenditures at the sample mean for each region rather than, say, at the first quintile, which would be more appropriate for the poor and would also yield a lower poverty threshold. Even though their poverty lines may overstate poverty for this reason, I chose theirs because their methodology is well explained and is accessible to readers.

I extend the Assadzadeh and Paul poverty lines to other years using the Consumer Price Indices for rural and urban areas. The use of CPI to determine the real poverty line in other years is not without problems. One question is whether the CPI accurately reflects changes in prices paid by the poor. Using the price indices for food and clothing, which may be closer to the inflation experienced by the poor, did not change the results. Another complication is that the poor have diversified their expenditures over time as their incomes have increased, spending 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% in 1984 to 44% in 1994 to 50% in 2004. Finally, the poor also spend a greater proportion of their incomes on subsidized goods, whose prices have not increased with the rate of inflation, so my calculations may underestimate the extent of the decline in poverty.¹²

The resulting poverty lines for 2004 are 7,679 rials per day for a rural individual (about \$2.71 in PPP) and 10,886 rials (\$3.84) for an urban resident. As reference, note that these poverty lines are lower than the relative poverty line of half the median pce (Appendix), which in 2004 PPP dollars were \$2.54 and \$4.56 for rural and urban persons, respectively. Another point of reference is the nationwide minimum wage level, which in 2004 was about \$12.80 per day (PPP dollars) and seems set so as to

¹²This is contrary to the usual argument that contends that inflation adjustments would show greater poverty [3]. In general the argument that the poor have been squeezed harder by inflation is not supported by the evidence.

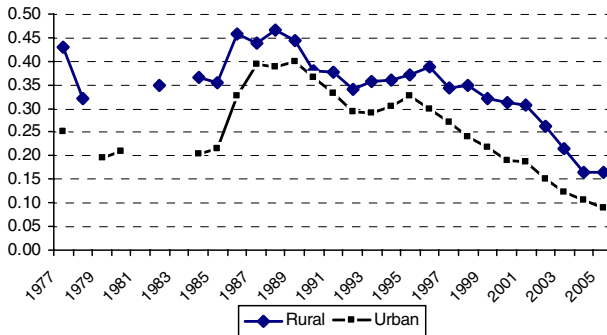


Fig. 3 Poverty rates before and after the Revolution, 1977–2005. The poverty lines are from Assadzadeh and Paul [5], computed for 1994 and extended to other years using the CPI. Source: Statistical Center of Iran (SCI), Household Expenditure and Income Surveys; 1977–83 rates are derived from SCI publications, and 1984–2005 are author’s calculations from unit record data

keep a family of four above a \$3 poverty line.¹³ The international poverty lines of one or two dollars per day have the drawback of giving one single poverty line for the entire country because there is only one national PPP exchange rate. For comparison, in 2005 the one-dollar-per-day line places only 1% of the population in poverty and the two-dollar line results in a poverty rate of 8.8% (about 5.6 million poor), of which 4.1 million are in rural areas.

I begin with the comparison of the incidence of poverty before and after the Revolution before moving on to a more detailed analysis of the post-Revolution period. My aim here is to answer one of the main questions I pose in this paper, namely whether the “Revolution of the disinherited” has served well its principal supporters, the poor. Because of data limitations for the pre-Revolution years, I employ the most accessible poverty measure, the headcount ratio, or the proportion of individuals below the poverty line. Although Iran’s expenditure surveys go back to the 1960s, unit record data are not available for surveys taken before 1984. So, for the earlier years I depend on the tabulations of the expenditure distributions which allow fairly reliable estimates of the headcount ratio.¹⁴ Because published distributions are for rural and urban surveys separately, I make separate comparisons of changes in poverty for rural and urban areas. This makes sense in any case because the revolution and the war affected rural and urban economies differently.

Figure 3 shows that the poor in rural and urban areas experienced the Revolution’s first decade rather differently (see Table 1 for the associated data). Rural poverty declined faster than urban poverty, falling by 8 percentage points between 1977 and the early 1980s, compared to 5 percentage points in urban areas. The incidence of

¹³See the monthly minimum wage of 1,066,000 rials for 1384 (2004/2005) reported in the Central Bank of Iran, Annual Report 1384, Table 44, and the PPP exchange rate of 2780 rials per dollar reported in World Bank [40].

¹⁴We have the proportion of households in expenditure groups defined by some arbitrary levels of total household expenditures. For some years we also know the distribution of household size by the same income groups, which helps us estimate the number of individuals below a given expenditure level. We made simple assumptions about the distribution of individuals within these groups to help place the poverty line between the given cutoff points.

Table 1 Headcount ratios before and after the Revolution, selected years

	Urban		Rural	
	Estimate	SE	Estimate	SE
1977	0.426	–	0.251	–
1978	0.320	–	–	–
1979	–	–	0.197	–
1980	–	–	0.208	–
1982	0.350	–	–	–
1984	0.365	0.004	0.204	0.005
1994	0.359	0.005	0.304	0.006
2004	0.166	0.004	0.107	0.005

Estimates of the headcount are only possible for a few years before 1984.

Source: The estimates for 1977–1983 are based on tables published by the Statistical Center of Iran, for 1984–2004 are author's calculations from unit record data HEIS, various years.

poverty in both rural and urban areas rose sharply in the mid-1980s, when Iran's oil revenues all but disappeared owing to the near shut-down of Iran's oil exports during this phase of the war and the collapse of oil prices in 1986. The gap between rural and urban poverty rates narrowed during the early 1990s, but expanded later in the decade.

For a more detailed examination of poverty, I focus on the post-revolution period (1984–2005) for which unit record data are available. In addition to the headcount ratio, I use the Poverty Gap Index, or FGT(1), and the Poverty Gap Squared, or FGT(2), to track poverty. FGT(1) measures how far the poor are below the poverty line as a proportion of the poverty line, and FGT(2) is the average of squared relative poverty gaps (poverty gaps divided by the poverty line), which gives greater weight to those farther below the poverty line. Unlike the other two indices, FGT(2) is sensitive to changes in the distribution of income between the poor. These indices can be derived from the following expression:

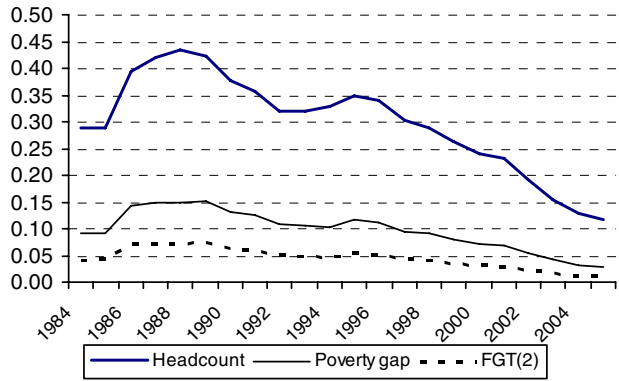
$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^N \left(\frac{z - y_i}{z} \right)^{\alpha},$$

where z is the poverty line and y_i is individual i 's income. The headcount ratio, or FGT(0), is obtained if $\alpha = 0$, and FGT(1) and FGT(2) if $\alpha = 1$ and $\alpha = 2$, respectively.

Figure 4 and Table 2 present the estimates of these indices along with their standard errors.¹⁵ The same pattern of rise and fall in poverty is indicated by all three indices. Poverty increased sharply as a result of economic collapse in the second half of the 1980s, when Iran's oil revenues plummeted due to the war and the collapse of oil prices in 1986 (see also Fig. 1). This is consistent with earlier findings by Behdad [7] and Nowshirvani and Clawson [26] who, relying on published data, found little evidence that the Revolution had improved the lot of the poor during its first decade.

¹⁵Standard errors are calculated using the Stata program `sepov`, described in Jolliffe and Semykina [19].

Fig. 4 Poverty measures for Iran, 1984–2005. Welfare is measured by per capita expenditures and the poverty line is from Assadzadeh and Paul [5]. Source: Statistical Center of Iran (SCI), Household Expenditure and Income Surveys, author’s calculations from unit record data



Furthermore, the severity of poverty also increased. This is reflected in sharper increases in FGT(1) and FGT (2). For example, between 1984–1989, FGT(2), which is the most sensitive of the three to incomes at the lower tail of the distribution, increased by 80%, compared to 47% for the headcount ratio. Evidently, the populist

Table 2 Poverty measures for Iran, 1984–2005

Year	Headcount		Poverty gap		FGT(2)	
	Estimate	SE	Estimate	SE	Estimate	SE
1984	0.289	0.003	0.091	0.001	0.041	0.001
1985	0.289	0.003	0.093	0.001	0.042	0.001
1986	0.394	0.007	0.143	0.003	0.071	0.002
1987	0.419	0.007	0.148	0.003	0.072	0.002
1988	0.433	0.006	0.149	0.003	0.071	0.002
1989	0.424	0.006	0.151	0.003	0.074	0.002
1990	0.377	0.005	0.131	0.002	0.063	0.001
1991	0.356	0.005	0.125	0.002	0.061	0.001
1992	0.321	0.005	0.109	0.002	0.053	0.001
1993	0.319	0.006	0.106	0.003	0.049	0.002
1994	0.329	0.004	0.103	0.002	0.046	0.001
1995	0.347	0.003	0.116	0.001	0.054	0.001
1996	0.339	0.004	0.111	0.002	0.051	0.001
1997	0.304	0.004	0.096	0.001	0.043	0.001
1998	0.287	0.004	0.092	0.002	0.041	0.001
1999	0.264	0.003	0.081	0.001	0.035	0.001
2000	0.241	0.003	0.073	0.001	0.031	0.001
2001	0.232	0.003	0.068	0.001	0.029	0.001
2002	0.192	0.003	0.054	0.001	0.023	0.001
2003	0.155	0.003	0.043	0.001	0.018	0.001
2004	0.127	0.003	0.032	0.001	0.013	0.000
2005	0.116	0.003	0.029	0.001	0.011	0.000

All estimates are based on per capita expenditures, poverty lines from Assadzadeh and Paul [5], and bootstrapped standard errors are calculated using Stata program `sepo`.

Sources: Author’s calculations using HEIS, various years.

economic policies of the 1980s, including large scale rationing, failed to protect the poorest of the poor from the worst ravages of the war and the collapse of oil exports.

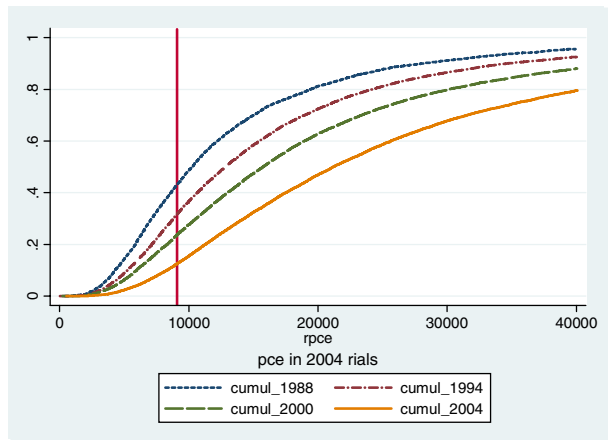
All indices similarly accord in registering the dramatic decline in poverty in the 16 years since the end of the war and economic reconstruction and reform. The headcount ratio declined by more than 30 percentage points, from 0.424 in 1989 to 0.116 in 2005. Once again FGT(1) and FGT(2) register even sharper declines in poverty: by 81 and 85%, respectively, compared to 73% for the headcount. So, in addition to the decrease in the proportion of those under the poverty line, the recovery improved the welfare of the severely poor relatively faster.

Economic recovery received an early boost from the rise in the price of oil as a result of the first Persian Gulf war of 1990–1991, before reforms had had much of a chance to affect incomes. All poverty indices fell, but not at the same rate. As before, FGT(2) shows the sharpest decline, of 34% compared to 25% for the headcount. The oil boom apparently lifted the incomes of those at the very bottom more rapidly. Because of economic mismanagement, the oil boom quickly led to an external debt crisis, which caused the recession of 1993–1995 (see Fig. 1). To combat the debt crisis, the Rafsanjani government resorted to macroeconomic shock therapy, cutting imports by half and putting reforms on hold, even imposing price controls. The policy reversal was prompted by calls to protect the poor, but it clearly failed to do so as poverty increased by about 9% as measured by the headcount and 10% by FGT(2).

Economic growth resumed after the mid-1990s as oil prices increased and the reform program went back on its (slow) track, giving the country its longest continuous period of economic growth after the Revolution. This period also witnessed a dramatic decline in poverty. During 1995–2005, the headcount fell by two-third, and FGT(1) and FGT(2) by even more – 75% and 80%, respectively. Again, the sharper decline in the Poverty Gap indices signifies that economic growth had lowered the severity of poverty and raised incomes at the very bottom of the distribution.

There is a lively debate in Iran about poverty which centers around how the poverty line should be measured (see Raisdana et al. [30]). Where poverty line is placed obviously matters for how many people are designated as poor but, as Fig. 5 shows, it does not matter for the direction of change in poverty. Figure 5 depicts the

Fig. 5 Poverty measures for Iran, 1984–2004. Real per capita expenditures limited to below 40,000 rials; the vertical line is at \$2 PPP. Source: Statistical Center of Iran (SCI), Household Expenditure and Income Surveys, author's calculations from unit record data



lower part of the cumulative distributions of pce (pce less than 40,000 rials) for 1988–2004, the period since the war. For convenience, a vertical line shows the rial value of the \$2 poverty line (in PPP dollars), indicating the headcount ratios with the height of the curves at this level of pce. The graph clearly shows that because of stochastic dominance no matter where the poverty line is placed the conclusion is a substantial drop in the poverty rate between 1988 and 2004. In fact, the drop in the poverty rate as defined by the \$2 threshold, from about 20% to less than 5%, is not the largest to measure. Placing the poverty line higher at \$4.25 would yield a larger decrease in the poverty rate of about 40 percentage points, which is to say that with the higher threshold there were nearly 30 million fewer people in poverty in 2004 than there would have been had the incidence of poverty not decreased from its 1988 level.

The data presented in this section describe, but do not explain, the decline in poverty in post-Revolution Iran. However, there is suggestive evidence that growth and pro-poor social policies have helped in poverty reduction in Iran. I have noted how poverty increased during periods of economic crisis and decreased with economic growth, and that fluctuations in growth and poverty have been closely timed with fluctuations in oil revenues. The dramatic decline in poverty since the late 1990s took place while the price of oil quadrupled. There is abundant evidence that growth reduces poverty [13, 16]. The peculiarity of growth in oil exporting countries suggest that oil induced growth may do even better. Oil revenues stimulate primarily the non-tradable sectors such as construction and services, which rely heavily on unskilled labor and therefore raise the incomes of the poor.

The effect of growth on poverty reduction in Iran should be considered in the context of economic and social policy. Two sets of policies affected the poor: pro-market reforms aimed at promoting growth, and social policies aimed directly at helping the poor. Pro-market reforms started under the first Rafsanjani administration (1989–1993) under the rubric of the Islamic Republic's Second Five-Year Development Plan (1989–1994). Reforms were put on hold during the second Rafsanjani Administration (1994–1997) because of a balance of payments crisis, but were resumed under Khatami (1997–2005) and have continued, albeit at a slow pace, until Ahmadinejad's election. Under Khatami the foreign exchange market was liberalized, trade barriers were lowered, government control of the credit market was reduced and private banks were allowed to operate. However, the reforms stopped well short of creating a competitive market economy. Progress in privatizing public enterprises was slow, and in 2005 the economy was still dominated by the public sector. As a consequence, growth was sluggish and unemployment remained above 10%. Although these reforms have been the center of the public debate on social justice [41], their effect on poverty, whether positive or negative, has not been investigated.

It is easier to ascertain the direction of the effect on poverty of the various social policies of revolutionary governments, most of which were implemented after the war with Iraq. These policies improved the lives of the poor by building infrastructure and by providing social protection. After the Revolution, electricity, safe water, health and education services were extended to most rural and poor urban areas. In 2004, 95.1% of rural households in the lowest expenditure quintile had electricity and 79.4% had piped water, compared to 37.0% and 31.0% in 1984. Ownership of refrigerators and gas stoves had increased from 12.7% and 21.0% in 1984 to 80.4

and 75.8%. Similar increases had taken place in poorer urban areas.¹⁶ An ambitious health and family planning program, started in 1989, brought basic family health to most rural families. By 2005, about 90% of the rural population was served by rural Health Houses [1, 18]. Schooling was extended to nearly all rural areas raising educational attainment of the rural families [33]. Considerable social protection was also offered through a vast system of subsidies and the labor market (minimum wage legislation and job security legislation). Vast subsidies for food, fuel, and medicine, though poorly targeted, greatly benefited the poor. Semi-public charities that had sprang up after the Revolution, most notably *Komiteh Emdad Emam Khomeini*, provided direct assistance to the very poor [15].

5 Inequality

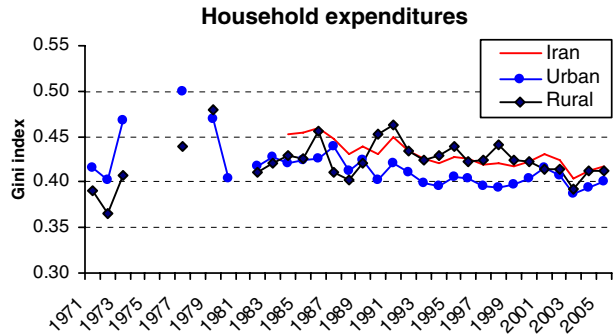
Poverty is only one half of the usual explanation for the return of populist politics in Iran, the other half being rising inequality. The previous section showed that the explanation of rising or widespread poverty has little support in facts. In this section I examine the second part of the explanation. I show that the Islamic government's success in fighting poverty did not extend to inequality. Inequality, though it fell just after the Revolution, has been steady in the post-Revolution years, staying at about the same level as in the early 1970s. This finding should not be surprising because in general lower poverty does not imply lower inequality, and the link is even less obvious in the case of an oil exporting country. International evidence suggests that growth should lower poverty [13], but the evidence for inequality is mixed. Economic growth can in the initial phase worsen inequality before improving it [4, 12, 20, 23].

In Iran, where oil dominates the economy and growth spells often coincide with increases in the price of oil, the relationship between growth and distribution may deviate from the norm. A reasonable conjecture is that rent seeking can link the distribution of the benefits from oil to the distribution of political power and the institutions that promote or limit corruption. The oil boom of the 1970s, which many Iranians now associate with the golden age of prosperity, made the country less equal, favoring the rich over the poor [28]. The Islamic Revolution brought a large shift in political power, so in principle the relationship between (oil-induced) growth and inequality should have changed relative to before the Revolution. As we show below, the 1970s pattern seems to be repeated in the oil booms of 1990–1992 and 1999–2002. However, during the latest oil boom inequality started to improve after initially getting worse. In particular, in 2005, when voters elected President Ahmadinejad, inequality was at about the same level as it had been in 1997 when they had first elected his reformist predecessor, President Khatami, by a landslide.

Two principal conclusions can be drawn from the analysis of this section. First, the relationship between oil induced growth and inequality is complex and the evidence we have here falls well short of identifying this relationship. Second, while the populist movement that toppled the Shah in 1979 might have drawn strength from rising inequality in the 1970s, the one that defeated the reformists in 2005 was most likely not. A different set of grievances may have been at work since inequality was

¹⁶Calculated from survey data (HEIS). For more details see, Salehi-Isfahani [34].

Fig. 6 The Gini index of inequality of household expenditures, 1971–2005. Estimates for all Iran are not available before 1984. Source: 1971–1973: Pesaran [28]; 1977–1983: Behdad [7]; 1984–2005: author's calculations using HEIS data files, various years



relatively stable in the preceding decade and, as we see below, had even declined in the two years preceding the election.

Turning to the evidence, I begin with the comparison of pre- and post-Revolution inequality and then turn to a more detailed account of inequality during 1984–2005 using unit record data. As with poverty, the more reliable indicator of welfare for measuring inequality is per capita expenditures. However, because the published information about inequality for the pre-1984 period is at the household level, the initial discussion of changes in inequality over the long period will be based on inequality between households. Furthermore, the only available measure of household inequality that spans the period from before the Revolution to the present is the Gini index.¹⁷ The comparison based on household level data turns out to be similar to the one based on per capita values because the distribution of household size by income has remained relatively constant during the entire period. For the 1984–2005 period, when unit record data are available, the Gini coefficient for household and per capita expenditures track each other very closely (see Salehi-Isfahani [34, Table 10]) even though during this period the average household size fell dramatically due to decline in fertility. For the early years, published data report the Gini index separately for rural and urban households, so for those years I must conduct separate comparisons of inequality in rural and urban sectors.

Figure 6, which reports inequality for the longer series, reveals two important aspects of the evolution of the distribution of per capita expenditures in Iran's recent history (see Table 3 for the associated data for selected years). First, the distribution of income deteriorated sharply during the oil boom of the 1970s just before the Revolution. The Gini index for the urban sector increased by 10 percentage points in just 5 years, reaching its peak level of 0.50 in 1977; the rural index increased by 7 percentage points to 0.44. The Revolution, which was likely fueled by the rise in inequality, is credited for the decline in inequality in the early 1980s [7, 26]. Second, after the initial decline, inequality has remained fairly stable in the post-Revolution period (Fig. 6). Clearly, the Revolution's success in later years in reducing poverty did not extend to improving inequality.

¹⁷The published data on the distribution of household expenditures, which proved useful in Section 4 in headcount estimation, are not suitable for the estimation of inequality. The distributions for the years prior to 1984 are presented by income group rather than deciles.

Table 3 The Gini index of inequality of household expenditures, 1971–2004

	Urban		Rural	
	Estimate	SE	Estimate	SE
1971	0.415	–	0.390	–
1972	0.403	–	0.366	–
1973	0.467	–	0.407	–
1977	0.500	–	0.440	–
1979	0.470	–	0.480	–
1980	0.404	–	–	–
1985	0.426	0.004	0.426	0.006
1995	0.406	0.003	0.439	0.003
2005	0.401	0.004	0.412	0.003

The estimates for pre-1984 years are from published sources that do not report standard errors.

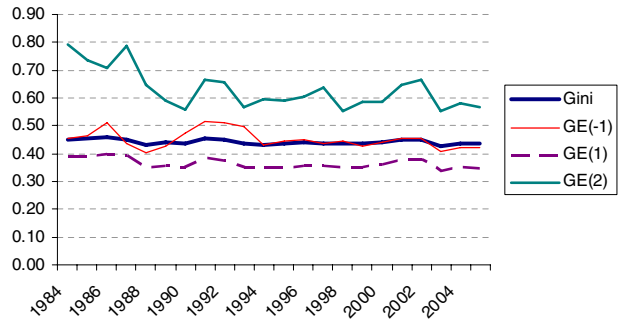
Source: 1971–1973 estimates are from Behdad [28], 1977–1983 estimates are from Pesaran [7], and post-1984 estimates are my calculations using HEIS data files, various years.

The trend in inequality for the longer time period is based on the Gini index, which may hide interesting variation in inequality because it is not sensitive to observations in the tails of the distribution. For a more accurate view, I turn to general entropy (GE) measures, which are more sensitive to differences in income at the tails of the distribution. This means narrowing the period of study to 1984–2005 for which micro data is available. Figure 7 compares the Gini index with three GE indices: $GE(-1)$ is more sensitive to changes in the lower tail of the distribution, $GE(1)$ – also known as the Theil index – treats all incomes neutrally, and $GE(2)$ is more sensitive to the observations at the upper tail. Table 4 presents the associated data and the estimated standard errors.¹⁸ As expected, the GE indices reveal more variation than the Gini index. $GE(2)$ is the most volatile followed by $GE(-1)$, confirming that there are distributional changes at the tails that the Gini index does not pick up. During the first decade of the Revolution $GE(2)$ fell from 0.79 in 1984 to 0.56 in 1990, a statistically significant drop. During the same period, $GE(-1)$ actually increased, from 0.45 to 0.47, though the change is not significant. The discrepancy suggests that in the early years of the Revolution, there were improvements in inequality due to compression at the upper tail of the distribution. Such compression is unsurprising given the revolutionary atmosphere of the country in the early 1980s, when the state was strongly socialist, had nationalized all banks and large enterprises, and had gained significant control over private consumption through an elaborate system of rationing of basic goods. The country's mood was also hostile toward the private sector and the wealthy were socially castigated, many of whom decided to leave Iran altogether.¹⁹

¹⁸The standard errors for the Gini index are bootstrapped estimates as implemented in the Stata program `ineqerr`; standard errors of the GE indices are computed using `svygei`, which uses a linearization method and allows for complex sampling design [10]. The latter program does not compute standard errors of the Gini index, hence the alternative bootstrap method. Biewen [9] shows that for large samples, such as ours, the bootstrap technique produces results close to asymptotic techniques.

¹⁹During this period the preferred term to describe the wealthy was *taghouti*, a Quranic reference to persons of wealth who also oppressed people.

Fig. 7 Inequality of per capita expenditures, 1984–2005.
Source: Author’s calculations using HEIS data files, various years

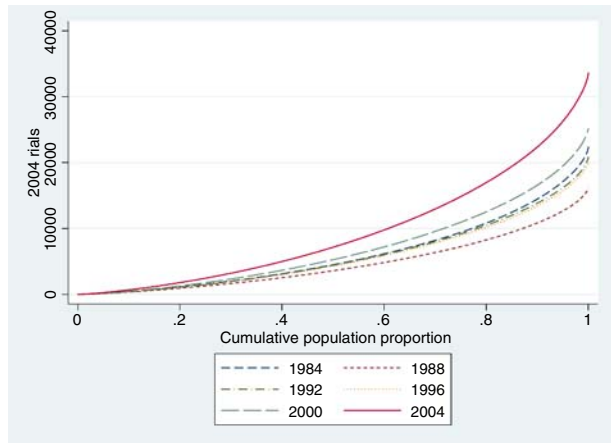


The fluctuations in inequality, especially as reflected in GE(2), raise interesting questions about the relationship between oil revenues and inequality. As noted earlier, inequality rose sharply during the pre-Revolution oil boom of 1974–1977. There are two short episodes of rising inequality after the Revolution which also coincide with rising oil prices and revenues. During the first period (1990–1992) oil revenues increased by about 50% and GE(2) rose from 0.558 to 0.657, during the second period (1998–2002) oil revenues more than doubled and the index increased from 0.551 to 0.667 (both increases are statistically significant at 5% level). However,

Table 4 Inequality measures for per capita expenditures, 1984–2005

	Gini		GE(-1)		GE(1)		GE(2)	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
1984	0.451	0.004	0.454	0.008	0.391	0.013	0.792	0.098
1985	0.453	0.004	0.466	0.008	0.388	0.012	0.736	0.088
1986	0.461	0.005	0.509	0.016	0.400	0.014	0.708	0.057
1987	0.448	0.007	0.436	0.015	0.396	0.020	0.785	0.089
1988	0.432	0.004	0.403	0.010	0.353	0.012	0.648	0.080
1989	0.439	0.005	0.425	0.011	0.358	0.011	0.590	0.034
1990	0.436	0.004	0.476	0.012	0.349	0.009	0.558	0.032
1991	0.453	0.004	0.515	0.012	0.385	0.011	0.668	0.043
1992	0.448	0.004	0.513	0.015	0.377	0.010	0.657	0.039
1993	0.436	0.005	0.495	0.023	0.350	0.010	0.568	0.035
1994	0.433	0.003	0.433	0.012	0.350	0.007	0.597	0.032
1995	0.435	0.002	0.446	0.008	0.351	0.005	0.589	0.022
1996	0.439	0.003	0.451	0.008	0.358	0.007	0.603	0.025
1997	0.435	0.003	0.435	0.008	0.358	0.008	0.639	0.039
1998	0.438	0.003	0.445	0.008	0.350	0.007	0.551	0.020
1999	0.434	0.003	0.426	0.007	0.350	0.008	0.587	0.031
2000	0.441	0.003	0.439	0.007	0.360	0.007	0.586	0.022
2001	0.449	0.003	0.455	0.008	0.378	0.008	0.645	0.030
2002	0.449	0.003	0.457	0.007	0.380	0.008	0.667	0.040
2003	0.428	0.008	0.408	0.007	0.339	0.008	0.551	0.027
2004	0.435	0.003	0.421	0.007	0.350	0.007	0.580	0.029
2005	0.435	0.004	0.422	0.007	0.348	0.009	0.566	0.033

Fig. 8 Generalized Lorenz Curves for Per Capita Expenditures, selected years. Source: Author's calculations using HEIS data files, various years



the correlation ends there as during the latest doubling of oil revenues, in 2003–05, GE(2) was at its lowest level for the post-Revolution period.

There is some weak evidence to support the critics of the pro-market reforms of the first Rafsanjani administration (1989–1993), who blamed the reforms for presumed rising poverty and inequality in this period. The evidence on poverty, presented in Table 2 above, dispelled the notion that poverty increased in the post-war era, but the increased inequality reflected in GE(2) suggests that rising affluence among the rich may have worsened inequality without any increase in poverty. Rafsanjani's reforms have been labeled neo-liberal and attacked as inspired by the World Bank and the IMF [41]. Although the brief rise in inequality in 1990–1992 appears consistent with the view of the critics, two observations suggest the relationship between market liberalization and inequality in Iran is far from certain: first, inequality fell immediately after the war when reforms were first introduced (1988–1990), and it remained stable while reforms continued during the Khatami era right up to 2005, when Ahmadinejad was elected.

A fair assessment of the Islamic regime's report card in dealing with poverty, inequality, and general economic welfare should be based on the period since the end of the war with Iraq, as the destruction of the war years arguably overwhelmed any policy outcomes. So far, I have relied on estimates of poverty and inequality to show that the post-war period of economic recovery has not worsened the lot of the poor. In the remainder of this section I provide a more formal assessment of whether welfare has increased as a result of economic growth in the last two decades by employing the method of generalized Lorenz (GL) dominance [36]. GL curves are Lorenz curves scaled by the mean of the distribution; therefore they allow a more comprehensive welfare comparison based on changes in the mean as well as inequality between two distributions. If the GL curves for later years lie everywhere above those for earlier years, it is a clear indication that growth has lifted the incomes of all individuals located at different parts of the income distribution.

The GL curves for real per capita expenditures depicted in Fig. 8 show the ups and downs of economic welfare during the past two decades.²⁰ Economic collapse during the war years is clearly reflected in the position of the GL curve of 1988 below that for 1984. Likewise, the increase in welfare during the latest oil boom is captured by the upward shift in the GL curve between 1996 and 2004. A more detailed examination of changes in the GL values in Fig. 8 (not shown) reveals interesting shifts in the position of deciles. During the war and rationing period (1984–1988) all expenditure groups experienced losses, but the rate of decline was greater for those in richer quantiles. The next 4-year period (1988–1992) – marked by the end of the war-induced rationing, start of reforms, and the oil price spike of 1990–1991 – showed decline in real per capita expenditures for the poorest 3% while the rest enjoyed a rate of increase which was positively correlated with their level of expenditures. The ensuing period of contraction (1992–1996) seems to have favored the poor, who gained about 5–10% over the 4-year period while those above the 30% quantile lost slightly. As with the 1984–1988 period, contraction coupled with price controls seems to have hurt the rich more. Beyond 1996, with the resumption of economic growth we observe unambiguous increase in welfare across all expenditure quantiles, especially among the poorest groups.

The evidence presented in this section shows that overall inequality in Iran has not only been resilient to policy change but also to the Revolution itself. The small changes in inequality that we do observe are more related to oil price increases than the economic reforms of the 1990s. A possible lesson from this observation is that, unlike poverty, inequality outcomes are structural and are not easily affected by policy or in this case even a social revolution. There is no doubt that the Revolution displaced many from their place on the economic ladder, sometimes violently, but, perhaps because the economic ladder on which individuals must in the end find their place remained the same, the distribution did not change. Different people stand on the higher rungs of the ladder but the ladder itself has changed little. As regards the political economy question that concerns this paper, the evidence undermines the conventional wisdom that blames rising inequality for the populist backlash in the 2005 election. The increase in inequality starting in 1999, captured by $GE(2)$ and $GE(-1)$, does not last beyond 2002 and reverses itself in 2003–2005. The general stability of inequality indices over the post-Revolution period makes it hard to conclude that *changes* in inequality have had much to do with post-Revolution Iranian politics. However, the evidence does not rule out that the revolutionaries are disappointed with the lack of a substantial decline in inequality in the last 20 years and may therefore be searching for a leader who can yet fulfill the Revolution's promises with respect to greater equality.

6 Concluding remarks

This paper provides a descriptive account of poverty and inequality in Iran before and after the Revolution of 1979. Its purpose is to assess the extent to which the “Revolution of the Disinherited” has succeeded in fulfilling its promises to Iran's

²⁰The corresponding Lorenz curves (not shown) lie very close to each other, confirming the stability of inequality evident from the Gini and GE indices.

poor, and to illuminate the role of poverty and inequality in the recent revival of populist politics in Iran. Many observers of Iran's political scene have stressed rising poverty and inequality as factors in Ahmadinejad's surprise 2005 election, implying that the Revolution has so far failed to achieve its main objective of serving the poor. Immediately after the 2005 presidential election, some commentators blamed the reformers' electoral defeat on their focus on democratic reforms instead of economic justice. "The political task ahead for the liberal thinkers of Iran," wrote Michael Ignatieff in *The New York Times* shortly after the 2005 election, "is to find a program that links human rights and democracy to the poor's economic grievances."²¹ Estimates of the trends in poverty and inequality based on extensive survey data presented in this paper question the importance of poverty and inequality as underlying factors in the rise of populism in Iran. They show that at least on this account the Revolution has not failed its most ardent supporters. After increasing sharply during the war with Iraq, poverty has declined fairly continuously and is now considerably lower than it was before the Revolution. Furthermore, the sharpest reduction in poverty took place during the period of pro-market reforms under the Rafsanjani and Khatami administrations, thus undermining the thesis that resurgent populism in Iran is a reaction to these reforms.

Unlike poverty, inequality has been relatively constant in the post-Revolution period, after its initial decline immediately after the Revolution. The Gini index of inequality in 2005 was about the same as it was in the early 1970s before it increased during the oil boom. So, on this count the Revolution has fallen short of its promise. But, as far as the rise of populism in recent years is concerned, rising inequality could not be blamed for pushing a large number of voters away from reformists and into the populist camp because there was no increase in inequality immediately preceding the 2005 election. A graphical examination of the generalized Lorenz curves indicates that after 1988 in successive years the distribution of welfare stochastically dominated those of previous years, indicating that in this period welfare increased for all Iranians irrespective of income.

I discussed a wide range of social policies that contributed to poverty reduction and stability of inequality, some of which had nothing to do with the reforms but may have compensated for their adverse effects. I emphasized subsidies for food, energy, and medicine, and investment in electricity, water, and health and family planning services. Rising oil revenues not doubt contributed to lower poverty, but the role of pro-poor social policies should not be minimized.

The findings on inequality raise important questions about the nature of the Islamic Revolution. Did it significantly affect the power structure as a social revolution of its magnitude should have? This is particularly relevant in the case of Iran because, in addition to changes in the distribution of productivity, the distribution of access to oil rents also affects inequality. Since access is directly related political power, inequality may reflect the distribution of power. Thus, the finding that inequality in 2002 was about the same as in 1972 raises questions about the significance of the Islamic Revolution as a social and political revolution, a question that Nomani and Behdad [25] have also seriously posed. Oil rents are clearly central to the politics of distribution in Iran, as evidenced by Ahmadinejad's promise to "take the oil money

²¹"Iranian lessons", *New York Times*, July 17, 2005.

to people's dinner tables," and the apparent popularity of pledge.²² But we do not know exactly how oil rents affect inequality, and much less politics. While in the long run inequality appears to have been resilient to shifts in policy and ideology, we saw evidence in this paper that it was affected by swings in oil revenues. We observe small but significant increases in inequality during periods of rising oil revenues, with the notable exception of 2003–2005, and noted how oil booms affected more strongly the distribution of expenditures away from the median, as revealed by estimates of the general entropy indices, $GE(-1)$ and $GE(2)$. That is, inequality increased among the rich as well as among the poor.

To diminish the causal role of poverty and inequality in the populist backlash, as I have tried to do here, is not to argue that broad economic dissatisfaction had nothing to do with the voters' switch from liberal and reformist politics of President Khatami to populist and conservative politics of President Ahmadinejad. The challenge is to explain the appeal of populism around 2005, at a time of relative prosperity, falling poverty, and stable inequality. Several possibilities suggest themselves. Increased economic insecurity may have accompanied rising prosperity in the last decade. Even those social groups who benefited during the last decade of economic growth may have suffered anxiety due to increased insecurity, more than compensating for their collective gain. Lower poverty and stable inequality may indeed be compatible with increased insecurity. When economic reforms began in the early 1990s, about 60% of wage and salary workers were employed in the public sector, compared to about 40% in 2004 [33]. Public sector jobs offer much more security and are coveted despite sometimes lower pay. Labor market regulations intended to make private sector jobs more secure have failed in practice as employers have shifted to offering short term contracts and part time work. Significantly, an early move by the Ahmadinejad government was to prevent short term employment contracts in state-owned companies. The reform of the foreign trade regime in recent years, which ended non-tariff barriers and lowered the average tariff rate, increased competitive pressures from East Asia on the traditional manufacturing sectors of Iran, notably textiles, reducing job security for a large section of the less skilled population. Interestingly, these competitive pressures increased precisely as oil revenues climbed and opened the gates to cheap imports from East Asia.

There is also the interesting possibility, suggested by the polarization literature (see, for example, Duclos et al. [14]), that Iranian society may have become more polarized without becoming less egalitarian. The poor are better off than before but they are also more similar to each other – most have a basic education, access to basic services, and own refrigerators and televisions. At the same time, as a group they may still feel distinct from the more prosperous social groups, perhaps on account of cultural differences, such as different degrees of attachment to western culture. Thus polarization may have increased along social lines while economically the entire society has become more equal.

Finally, economic growth in a distributive society such as Iran that heavily relies on oil rents, and one that is also imbued with a deep sense of economic justice, can create social envy and frustration. In such an economy individual incomes typically increase

²²A report in the Baztab news website (downloaded from <http://www.baztab.com/news/75025.php> on 9/12/07), suggested that the president's office had received about 9 million letters (more than one for every two Iranian households) requesting economic aid.

not only because of higher productivity but also as a result of more rent seeking. Lack of economic transparency which is inherent in the rent seeking process exacerbates envy. Most Iranians who express dissatisfaction with their economic system seem to have very exaggerated ideas about the size of the oil income and are suspicious of how it is distributed. Wild speculations 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.²³ Not surprisingly, corruption rather than reliance on markets is the main reason why Iranians suspect that the oil money has not found its way to their dinner tables. For decades large oil rents have blurred the connection between individual productivity and income. Because rewards appear detached from productivity, individuals lack a firm 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 the greater the possibility that one's own share is not large enough. Reduction in poverty seems unimpressive if the poor believe that their gains are small relative to others. Under these circumstances, economic growth, even it were to lift all incomes evenly, could create social envy and resentment leading 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. One possible explanation for such shifts toward populism is the understandable tendency of the lower classes to turn to a leader with a modest personal fortune (Khomeini in 1979 and Ahmadinejad in 2005) at times when the state is in a position to dispose of a large amount of oil money. Lack of transparency in the Iranian economy in general, and about how the oil rent is distributed in particular, thus fuels envy and complicates politics precisely at times when the economy is poised for rapid growth.

These possibilities suggest the need to examine and test more complex reasons for the recent shift to populism in Iran than increase in poverty and inequality. Abandoning economic reform for populist policies may thus be the wrong lesson to learn from the setback suffered by reformists at the polls in 2005. At this point we simply do not know enough about the links between the economy and social and political change in Iran to draw firm conclusions.

²³ A recent article in the *New York Times* ("Young Iranians Follow Dreams to Dubai," December 4, 2005) reported claims of \$200 billion invested by Iranians in Dubai, a figure which is unrealistically high.

Appendix

Table 5 Mean per capita expenditures by deciles of pce

Year	1	2	3	4	5	6	7	8	9	10
1984	3,849	6,165	8,016	9,962	12,145	14,809	18,207	23,334	32,562	71,254
1985	3,809	6,201	8,102	10,092	12,323	15,024	18,555	23,793	33,043	72,397
1986	3,038	5,012	6,611	8,301	10,138	12,475	15,338	19,488	27,036	59,760
1987	3,144	5,073	6,564	7,968	9,564	11,548	14,082	17,900	24,340	54,685
1988	3,232	5,096	6,469	7,851	9,400	11,158	13,527	16,993	22,964	48,002
1989	3,071	5,007	6,495	7,895	9,524	11,404	13,770	17,180	23,379	49,031
1990	3,253	5,503	7,232	8,903	10,708	12,895	15,691	19,787	26,507	54,733
1991	3,297	5,583	7,410	9,242	11,235	13,693	16,740	20,945	28,460	63,046
1992	3,488	6,003	7,993	9,897	12,017	14,410	17,614	22,125	29,876	67,793
1993	3,628	6,116	7,993	9,903	11,986	14,348	17,255	21,443	29,001	58,023
1994	3,875	6,219	7,964	9,696	11,700	14,090	17,072	21,341	28,656	59,199
1995	3,580	5,880	7,652	9,425	11,353	13,703	16,660	20,875	28,098	58,344
1996	3,646	5,996	7,728	9,548	11,589	13,937	17,008	21,327	28,778	60,664
1997	3,908	6,443	8,371	10,228	12,302	14,709	17,788	22,127	29,889	63,282
1998	3,965	6,490	8,526	10,579	12,930	15,586	19,242	24,086	32,650	67,604
1999	4,257	6,882	9,013	11,185	13,600	16,361	20,054	25,214	34,184	71,126
2000	4,391	7,114	9,395	11,751	14,331	17,266	21,034	26,422	36,076	77,023
2001	4,524	7,350	9,602	11,950	14,710	17,766	21,640	27,097	37,011	81,748
2002	4,897	8,088	10,588	13,090	15,912	19,250	23,626	29,811	41,076	88,791
2003	5,414	9,001	11,666	14,349	17,262	20,648	25,071	31,298	42,047	87,262
2004	6,126	9,821	12,735	15,849	19,322	23,356	28,403	35,757	48,189	100,339
2005	6,318	10,187	13,361	16,561	20,055	24,137	29,388	37,121	50,910	103,907

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