CHAPTER 5

Housing Costs and Inequality in Post-revolutionary Iran

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Introduction

In this chapter, we investigate the association between housing prices and income inequality in Iran over the last three decades. In the recent period, Iran has had the highest average Gini coefficient in the Middle East (see Table 5.1), a region where inequality has triggered social tension, political instability, and armed conflict (Azeng and Yogo 2013). Moreover, debates on inequality and poverty have featured prominently in Iran's domestic politics since the 1979 Revolution. For example, popular dissatisfaction with inequality is believed to have contributed to an electoral victory in 2005 for the populist presidential candidate Mahmoud Ahmadinejad (Farzanegan 2009)—whose subsequent management of the national economy nonetheless resulted in negative economic growth as well as double-digit inflation and unemployment rates.

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Table 5.1 Gini coefficients for selected Middle Eastern countries

Country	*GINI index (1984–2013)*
Algeria	35.33
Egypt	30.75
Iran	42.26
Iraq	29.54
Israel	39.30
Jordan	36.13
Morocco	39.84
Syria	35.77
Tunisia	39.95
West Bank and Gaza	34.54
Yemen	35.89

Source: World Bank (2016)
Note: Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality

It has been demonstrated that pro-poor policies of the Iranian government (mainly in the provision of basic infrastructure such as safe drinking water, electricity, and health) have not been effective in reducing inequality (Salehi-Isfahani 2009). Furthermore, available studies on drivers of income distribution in Iran (e.g. Ahmadi and Mehregan 2006; Khodadad and Heydari 2009; Salehi-Isfahani 2009) have highlighted the role of economic growth, government expenditures, oil revenues, government policies, economic openness, education, and household characteristics. Yet, an issue that has received little attention in the literature concerned with Iran's economy is the effect of housing prices on income inequality.

Housing prices and rents in Iran have risen at a rapid pace over the last three decades: in 1982, the rental housing index (RH) in all urban areas was 1; after an annual average growth rate of 17 percent, the RH was 112.60 in 2012 (base year 2011 = 100).[1] This housing boom has been blamed for an array of socioeconomic problems, including low levels of household formation (Gholipour and Farzanegan 2015), high divorce rates (Farzanegan and Gholipour 2015), illegal land takeovers (Sodaei 2015; Gholipour 2012), and poor housing affordability together with the expansion of urban slums (Alaedini and Fardanesh 2014).

Income inequality has also been suspected of being influenced by rising home prices in Iran (Majles Research Center 2009), as increases in housing

costs have gone hand in hand with relatively high levels of inequality. Rising housing prices may aggravate inequality through a number of channels. If rising prices make homeownership prohibitively expensive for lower-income families, then these families lose access to the financial benefits of housing as an investment vehicle. Furthermore, with rising home prices, capital becomes concentrated in the hands of a smaller proportion of the population. Unaffordable housing additionally restricts labor migration to regions with greater opportunities. In the long term, there may also be increased intergenerational effects of rising housing prices. In addition, persistent increases in housing prices, along with low returns to agricultural activities in rural areas and smaller cities, are likely to have given impetus to illegal land takeovers in Iran. Land takeovers in rural areas and smaller cities decreases the incomes of poorer households (who are reliant on access to land and natural resources), with negative consequences for the overall income distribution. Finally, sizable capital gains on property investments due to continued increases in real estate prices and the absence of effective capital gains tax (Gholipour 2012)—as well as an ineffective taxation system in general[2]—are also likely to have increased income inequality in Iran.

To investigate causality from housing prices to inequality in this study, we control for other important economic, political, and social determinants of inequality. Our main task is to probe the effect of RH (which we use as a proxy for housing prices) on income inequality in Iran after controlling for other important determinants. We use annual time series data from 1982 to 2012 and apply fully modified ordinary least squares (FMOLS) to estimate the long-run impact of housing prices on income inequality. We show that increases in housing prices lead to higher inequality, ceteris paribus. We further suggest that, to reduce income inequality, the Iranian government should consider policies that increase the supply of affordable housing and redefine capital gains tax on investment properties.

The chapter is structured as follows: the next section describes potential theoretical mechanisms whereby housing prices increase income inequality. The third section provides some stylized facts for income distribution and housing markets in Iran. This is followed by a section that describes our variables and data. The fifth section discusses our empirical methodology and results, and the last section concludes the chapter.

Housing Prices and Its Impact on Income Inequality

Several studies are available that examine the effects of housing prices on inequality in open developed countries. For example, Muellbauer and Murphy (2008) argue that increases in housing prices change the distribution of welfare toward home owners, and away from non-homeowners in the UK. Furthermore, Abeysinghe and Wong (2014) find a significant positive effect of increasing private residential property prices on income inequality in Singapore. A similar suggestion is made for Singapore by Phang (2015) as well. Yet, to our knowledge, no empirical study has analyzed this link between housing prices and inequality in a developing country with limited integration to the world economy. This is the task we take up in this chapter. In the rest of this section, we summarize the primary mechanisms through which rising housing prices may contribute to increased inequality.

1. *Housing is a major financial asset class with income advantages; unaffordable housing restricts low-income households' access to the associated financial benefits.*

Homeownership makes up a significant proportion of the household sector's wealth; this is even more pronounced for lower- and moderate-income households (Oliver and Shapiro 1990). Frick and Grabka (2003) note that homeowner-occupancy confers a number of income advantages—capital return when house prices are rising, as well as imputed rent. Homeownership is also subject to favorable tax treatment. Further, the greater tax concessions associated with homeownership are typically granted to households with higher wealth (Cho and Francis 2011). Whereas a positive real capital return associated with homeownership is disputed elsewhere—for example, in the US—Iran's housing market has seen a clearly positive rate of return on this type of investment in the previous decade (Masron and Gholipour 2010). In addition, mortgages can be viewed as a form of forced saving for households—with their associated benefits (Tachibanaki 1994: 183). Mortgages also provide incentives to save for the needed down payments, particularly in liquidity constrained markets (Jappelli and Pagano 1994).

If low-income households are prevented from homeownership as a result of rising prices, they will not benefit from forced savings and saving incentives, capital returns, imputed rents, or tax concessions either. Those who are excluded from homeownership will then see their

incomes fall behind. Drudy and Punch (2002) find rising home prices and rents to be a major source of wealth generation for landowners, speculators, and landlords, in opposition to the effects on tenants and those in public housing. Frick and Grabka (2003) also find evidence of increasing inequality between owner-occupiers and renters. Oliver and Shapiro (1990) show that limited access to home ownership due to rising prices has clear implications for inequality. Even in situations where decreasing affordability of housing does not preclude all lower income earners from purchasing homes, there are still implications for inequality. Filandri and Olagnero (2014) find significant inequality between homeowners, depending on income and social class. Larsen and Sommervoll (2004) shows that there are considerable differences in return for different housing submarkets: markets characterized by investors and speculators outperform property in other submarkets.

2. *There are intergenerational effects on inequality: decreases in affordable housing increase the segregation of wealthy families from lower-income families, leading to greater differences in education and human capital formation for the children of poor and rich families.*

Parents affect the likelihood of their children growing up to be high-income-earning adults via influence on the education and peers that their children will be exposed to: human and non-human capital passed to children (Becker and Tomes 1979). The quality of schooling a child receives has significant effects on his/her adult earnings (Card and Krueger 1992). Wealthy adults thus have an incentive to cluster into neighborhoods with other wealthy families, to decrease the cost of providing high-quality education for their children and for other sociological and human capital positive externalities (Durlauf 1996). Decrease in affordable housing makes it easier for this segregation to occur, leading to persistent and likely increasing inequality.

3. *Rising house prices impede the migration of unskilled labor to more productive regions, thus slowing regional income convergence.*

Regional income convergences can reduce income inequalities, as poorer geographic regions experience faster economic growth (Barro and Sala-i-Martin 1992). One driver of regional income convergence is mobility of labor: low-income workers migrating to more productive regions. Ganong and Shoag (2013) find that rising house prices relative

to incomes reduce the mobility of labor and income convergence, and have been a contributor to rising inequality.

4. *More generally, rising house prices may lead to increasing concentration of capital, and increasing returns to owners of capital.*

Piketty's (2014) well-known argument is that income inequality increases when long-run returns to capital are greater than the rate of economic growth, such that the share of national income accruing to owners of capital will rise at the expense of income share accruing to labor. Yet, Rognlie's (2015) examination of the share of national income paid to net capital for G7 countries shows that growth in the income share of net capital is primarily driven by increasing returns to housing.

Income Distribution and Housing Market in Iran: Stylized Facts

Real estate, particularly residential property, has been a very important asset class for Iranian households and investors (Gholipour and Bazrafshan 2012). Over the last three decades, the sector has represented approximately 40 percent of the national capital stock (CBI 2015); 81 percent of Iranian urban households were homeowners (Statistical Centre of Iran 2015). Several interrelated economic and political factors have increased the desirability of real estate as an investment vehicle: high inflation rates, low real interest rates, underdeveloped financial markets and institutions, limited access to international financial and property markets, international sanctions, a weak national currency, and the absence of an effective taxation system on property. 40–60 percent of the demand for Iranian housing has been attributed to investment motives (Alaedini and Fardanesh 2014: 43).

As a result of high demand and insufficient supply (Ibid.:43–47), the last three decades have witnessed strong growth in housing prices and rents in Iran's urban areas (see Fig. 5.1). Housing has become less affordable for Iranian households (Gholipour and Farzanegan 2015). During the 1980s, the RH grew at the relatively slow pace of approximately ten percent per annum. The slow growth was primarily due to the effects of the Iraq-Iran War (September 1980 to August 1988). In the last two decades, growth in the housing market has accelerated (22.6 percent per annum over 1990–2000 and at 16.2 percent per annum over 2001–2012), experiencing at least four cycles of boom and recession (Mohammadpour 2015). The first boom and recession cycle occurred from 1993 to 1999. The RH rose to a peak in 1996 and slumped to a low point in 1999. The second cycle ran

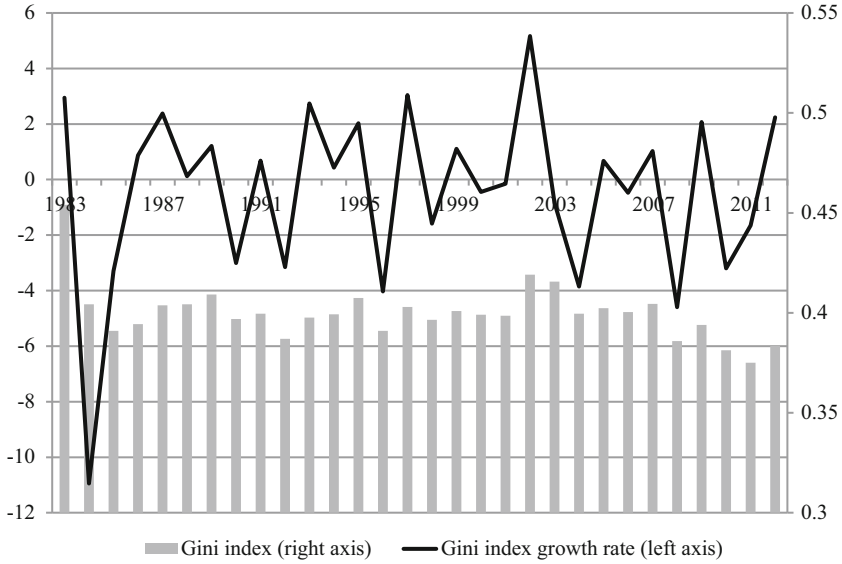

Fig. 5.1 Gini index (level and growth rate) in Iran. Higher scores represent higher income inequality. *Source*: CBI (2015)

from 1999 to 2005 with a peak in 2002 and a trough in 2005. The third cycle began in 2005, peaked in 2008, and ended in 2010. Finally, the fourth cycle occurred between 2010 and 2014, peaking in 2013.

Data Description

To examine the impact of housing prices on inequality in Iran, we utilize annual data for the period 1982–2012. Our empirical specification is as follows:

$$\text{Gini}_t = \text{cons.} + \beta_1.\text{RH}_t + \beta_2.\text{Controls}_t + \varepsilon_t \quad (1)$$

where *Gini* is the Gini index, *RH* represents the rental housing index, and *Controls* represents the control variables detailed below. Appendix A explains notations, measures, and data sources for all variables in the empirical analyses.

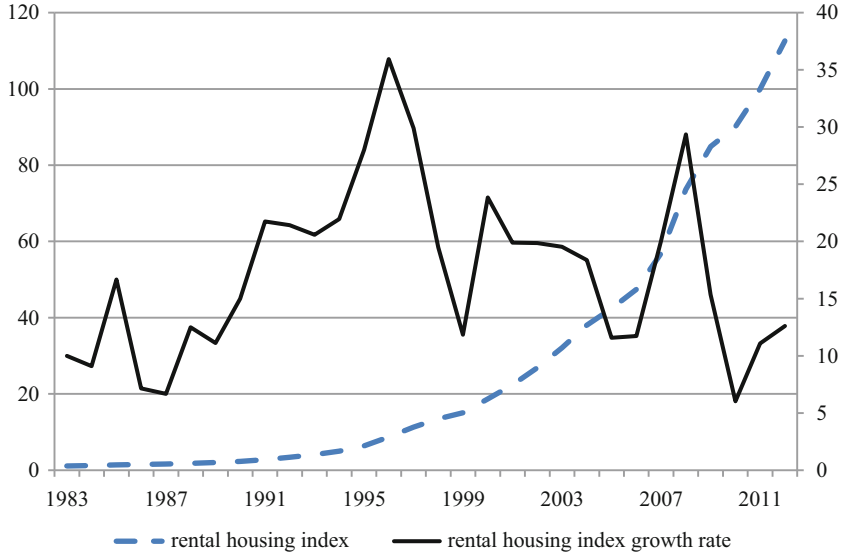

Fig. 5.2 Rental housing index (level and growth rate) in Iran. *Source*: CBI (2015)

Dependent Variable: Income Inequality

Our primary measure of inequality is Gini coefficient data from the Central Bank of Iran (CBI 2015). The Gini coefficient, which takes values between zero and one, is the most widely used measure of inequality in the empirical literature (see, e.g. Dollar and Kraay 2002; Delis et al. 2014). A Gini coefficient of zero describes a society where all individuals earn equal income (complete equality); a Gini coefficient equals to unity describes a society where a single individual earns all of the economy's income (complete inequality). Figure 5.2 depicts the Gini coefficient and its growth rate in Iran from 1982 through 2012.

We also employ another standard measure of inequality: the ratio of tenth decile expenditures (highest expenditure) to first decile expenditures (lowest expenditure). This ratio is provided by the Central Bank of Iran as a measure of income distribution (CBI 2015). The higher this ratio, the greater the inequality of expenditure.

Primary Independent Variable: Housing Prices (RH)

We use the rental housing index (RH) in all urban areas as a measure of housing prices in Iran. The RH is available for the period 1982–2012. We use the RH in preference over raw housing prices for two reasons. First, the RH is available beginning in 1982. Second, RH is a suitable proxy for housing prices: housing prices and rents are highly correlated in Iran (Farzanegan and Gholipour 2015). Figure 5.2 illustrates the variation in growth rates of the RH in post-revolutionary Iran.

Control Variables

We control for drivers of income inequality that are standard in the literature, taking into account their availability for Iran (see Delis et al. 2014). We include the logarithm of real gross domestic product (GDP) per capita. To investigate the possibility of a Kuznets curve, that is, a hypothesized inverted U-shaped relationship between income per capita and inequality (Kuznets 1955), we also include the logarithm of real GDP as a squared term. Data for GDP (at base prices and in billion rials) are from the Central Bank of Iran (CBI 2015).

We control for trade openness, measured as the sum of imports and exports, as a proportion of GDP. Whereas globalization is likely to reduce inequality *between* countries, it is also likely to *increase* income inequality *within* countries: international firms in developing countries tend to and pay higher wage premiums and hire the more highly skilled workers, widening the gap between skilled and unskilled labor. Data on trade are from the Central Bank of Iran (CBI 2015). We also include a financial openness index (Chinn and Ito 2006).

As a proxy for the degree of government intervention in the economy, we include government spending (as a share of GDP) as a control variable. Income inequality may be reduced by government policies such as: government spending, transfers, subsidies, and public sector employment. However, if the quality of political institutions is weak, government spending may be more patronage based, and thus unlikely to reduce inequality. We include the share of public consumption expenditures (billion rials) in constant prices as a ratio of GDP. We also control for the quality of political institutions by using the Polity2 index, which ranges from −10, representing full autocracy, to 10, representing full democracy (Marshall et al. 2014). Dizaji et al. (2015) show that, in the case of Iran, positive

shocks to the quality of political institutions are reflected in positive responses of government spending on public education and negative responses of military spending.

Inflation is also an important driver of income inequality which we control for; inflation generally has a negative effect on the relative income share of the poor (Easterly and Fischer 2001).

Empirical Methodology and Results

To estimate the long-run relationships between variables, we employ the FMOLS estimator (Phillips and Hansen 1990). This method is most efficient in testing the long-run relationships between variables, and has been employed by several researchers to test the long-run relationship between income inequality and its determinants (e.g. Cavusoglu and Dincer 2015; Herzer and Nunnenkamp 2012).

Our primary reason for utilizing FMOLS is to account for endogeneity in the model. We also face the issue of simultaneity: we assume that increases in housing prices increase income inequality; however, research has shown that increased income inequality also has a negative impact on housing prices (e.g. Määttänen and Terviö 2014). In such cases, ordinary least squares (OLS) produces biased and inconsistent estimates. We employ FMOLS to correct for endogeneity in the regressors and serial correlation in the errors in cointegrating regressions, thereby providing unbiased estimates of the coefficients.

We perform Augmented Dickey-Fuller (ADF) unit root tests to determine the order of integration of the series, testing for the presence of a unit root in both the log levels and log levels of the first differences of each. Results of the unit root tests are presented in Appendix B; the results suggest that all series, except log (Gini index) and Inflation/100, are integrated at order one (I (1)). Given that all variables are I (1), we test for the presence of a long-run equilibrium relationship among the variables using Johansen's Trace and Max-Eigen statistics. The Trace and Max-Eigen statistics indicate that there is at least one cointegrating relationship between the dependent variable (income inequality) and its determinants. Having established that a long-run cointegrating relationship exists, equations are estimated using the FMOLS estimator.

Table 5.2 shows the main results. Models 1–10 (M.1 to M.10) in Table 5.2 use the logarithm of the Gini coefficient as a dependent variable. In Model 11 (M.11), we use the ratio of tenth decile expenditures to first

Table 5.2 FMOLS results of the long-run effect of housing prices on income inequality in Iran, 1982–2012

	Dependent variable: Logarithm of Gini index (Models 2.1–2.10)										*R10/P10 (c)*
	M3.1	M3.2	M3.3	M3.4	M3.5	M3.6	M3.7	M3.8	M3.9	M3.10	M3.11
log(RH)	0.124***	0.098***	0.159***	0.176***	0.112***	0.150***	0.143***	0.130***	0.119***	0.125***	0.248***
	(3.35)	(2.94)	(4.11)	(5.26)	(3.35)	(4.73)	(4.47)	(4.03)	(4.50)	(4.79)	(3.44)
log(GDPPC)		4.03	−0.187	−6.213	5.234	5.33	5.59	10.09**	3.22	−0.34	−4.28
		(1.01)	(−0.04)	(−1.47)	(1.09)	(1.26)	(1.37)	(2.23)	(0.81)	(−0.08)	(−0.37)
log(GDPPC)^2		−0.118	0.006	0.184	−0.162	−0.165	−0.173	−0.307**	−0.099	0.006	0.123
		(−1.00)	(0.05)	(1.48)	(−1.13)	(−1.30)	(−1.42)	(−2.28)	(−0.84)	(0.05)	(0.36)
log(Trade)			0.093***	0.089***	0.178***	0.199***	0.206***	0.193***	0.185***	0.177***	0.435***
			(2.81)	(3.19)	(5.38)	(6.39(	(6.63)	(6.21)	(6.15)	(6.02)	(5.33)
log(OIL)				0.033**	0.011	0.003	0.002	0.006	0.007	0.006	−0.010
				(2.20)	(0.77)	(0.28)	(0.20)	(0.55)	(0.63)	(0.51)	(−0.32)
log(POP)						−1.372***	−1.392***	−1.489***	−1.06***	−1.056***	−2.834***
						(−4.11)	(−4.37)	(−4.75)	(−4.98)	(−5.09)	(−4.93)
Inflation/100							0.100***	0.116***	0.146***	0.119***	0.304***
							(3.10)	(3.61)	(4.10)	(3.23)	(2.98)
GOVEX								−0.001	0.000	−0.015	−0.060**
								(−0.39)	(0.22)	(−1.65)	(−2.36)
FINOPEN								0.058**	0.057**	0.010	0.037
								(2.29)	(2.18)	(0.31)	(0.39)
POLITY									0.002*	0.039**	0.125**
									(2.08)	(2.19)	(2.53)
GOVEX×POLITY										−0.002*	−0.009**
										(−2.03)	(−2.38)
C &Time Trend	C&T	C&T	C&T	C&T	C&T(a)	C&T(a)	C&T(a)	C&T(b)	C(b)	C(b)	C(b)
Adj. R2	0.30	0.24	0.36	0.39	0.48	0.52	0.50	0.51	0.54	0.55	0.80
Obs.	30	30	30	30	30	30	30	30	30	30	30

***Statistical significance at 99 %

**Statistical significance at 95 %

*Statistical significance at 90 %

Note: Method of estimation is the Fully Modified OLS (FMOLS); *t statistics* are reported in (): a, no constant/trend is statistically significant; b, only intercept is included in the cointegrating equation; c, dependent variable is the ratio of tenth decile expenditures (the richest) to first decile expenditures (the poorest). The higher the ratio, the more inequality in the society. In all models, the long-run variances are computed using a nonparametric method with the Bartlett kernel and a real-valued bandwidth chosen by Newey-West fixed bandwidth selection method

decile expenditures. In line with theoretical expectations, we find a robust positive association between income inequality and the rental housing index (log (RH)). The sign and the size of the effect are stable across multiple specifications and are not sensitive to the inclusion of control variables. Since both the rental housing index and our dependent variable are in logarithmic form, the coefficients can be interpreted as elasticities: a 1 percent increase in the rental housing index increases income inequality by 0.125 percent (as measured by the Gini coefficient) in our general model (M.10). The magnitude of effect is even greater when considering the ratio of the richest 10 percent to the poorest 10 percent's expenditure: a 1 percent increase in the rental housing index increases this ratio by 0.248 percent, controlling for other drivers of inequality. Our results underscore the importance of housing policies: the provision of affordable accommodation is an important channel for reducing the concentration of wealth and improving income distribution. A taxation structure favorable to low-income, first-time homeowners would enhance public access to more stable housing and would additionally provide the beneficiaries with longer-term financial benefits.

The effects of some control variables are also interesting. First, there is no robust evidence for a Kuznets-type inverted U-shaped relationship between income per capita and inequality. The coefficients of log (GDPPC) and log (GDPPC)^2 are not significant (except in M.8).

Second, there is a robust and highly significant effect of trade openness (log (Trade)) on income inequality in post-revolutionary Iran. The effect of trade and economic globalization on inequality is positive (i.e. inequality increases with trade). This finding is in line with the literature focusing on mechanisms through which trade liberalization and globalization lead to increased inequality within developing countries. In our general model (M.10), a one percent increase in trade openness increases inequality by 0.177 percent, ceteris paribus. Also, there is some evidence for the impact of financial liberalization (FINOPEN) on income inequality. Our results suggest that higher economic and financial globalization in Iran is unlikely to lead to increasing demand for unskilled labor and a corresponding closing of the wage gap between skilled and unskilled labor force.

Third, inflation (Inflation/100) is another robust driver of income inequality in Iran. Inflation, which acts as an additional tax on the poor, is widening the income gap between the poor and the rich. Low-income

earners often lack indexation of their wages and access to financial investment. In contrast, the value of real estate and fixed capital, typically held by high-income, high-wealth individuals, increases in an inflationary economy like Iran's. The average inflation rate in Iran between 1982 and 2012 was 19 percent, ranging from a minimum of 6.9 percent and a peak of 49 percent.

Fourth, the size of government spending as a share of GDP has (GOVEX) a mostly negative effect on income inequality and the ratio of the richest ten percent to the poorest ten percent's expenditure. However, this negative effect is only statistically significant when we use the ratio of richest to the poorest as the dependent variable. As we expect, the final effect of government spending on income inequality and the gap between the rich and the poor is dependent on the quality of political institutions, as can be seen from the negative and significant interaction term (GOVEX $\times$POLITY). In other words, when the quality of political institutions is low, government spending is unlikely to be an effective tool for dealing with the income gap between the rich and the poor.

Our general model (M.10) explains about 55 percent of the variation in income inequality from 1982 to 2012. M.11, which uses the ratio of tenth decile expenditures (the richest) to first decile expenditures (the poorest), is more powerful and explains about 80 percent of the variation in the dependent variable.

Conclusion

The housing industry and its related activities and services have become increasingly influential in the Iranian economy. Based on information from the Central Bank of Iran (CBI 2016), the average share of the construction industry from 1982 to 2012 was approximately seven percent of Iran's GDP, while the average share of real-estate-related professional services to GDP for the same period was 11.5 percent. The latter ratio shows a significant increase over the period, rising from 6.6 percent in 1982 to 17 percent in 2012.

In this chapter, we examined the effect of housing prices on income inequality in Iran. Probing the association between housing prices and income inequality, we employed FMOLS on data from 1982 to 2012 to investigate the long-run relationship. The analysis controlled for drivers of

inequality such as income per capita, inflation, trade and financial openness, government spending, population size, and the quality of political institutions. Our main results show a robust positive, and highly significant, association between housing prices and income inequality in Iran—that is, higher housing prices are associated with increased income inequality. One potential policy to reduce the relatively high income gap between the poor and the rich in Iran would thus be the provision of affordable housing, involving both supply- and demand-side initiatives. In addition, policymakers should redefine capital gains taxes on investment properties to reduce income disparities between owners and tenants.

Appendix A

Table 5.3 Variable definitions and sources

Variable	*Definition*	*Source*
Gini Index	Gini coefficient, which is a number between zero and one, is an important measure of inequality in distribution of income. Zero indicates a society with absolute equality in distribution of income and one indicates a society with inequality in income distribution. Logarithmic transformation is used.	CBI (2015)
R10/P10	Ratio of tenth decile expenditures (the richest) to first decile expenditures (the poorest). Logarithmic transformation is used.	CBI (2015)
RH	Logarithm of rental housing index. Rent Index is part of the CPI group of consumer goods and services basket. This index is available for urban areas including Tehran as well as other large, medium, and small cities.	CBI (2015)
GDPPC	Logarithm of gross domestic product in billion Iranian rials (base year: 2004).	CBI (2015)
POP	Logarithm of the population	CBI (2015)
INF/100	The CPI inflation rate (%)/100	CBI (2015)
TRADE	The ratio of the sum of exports and imports over GDP (%)	CBI (2015)
GOVEX	The ratio of government expenditures over GDP (%)	CBI (2015)
OIL	Logarithm of oil revenues in total government revenues	CBI (2015)
FINOPEN	Financial openness index. The Chinn-Ito index is normalized between zero and one. Higher values of this index indicate that a country is more open to cross-border capital transactions.	Chinn and Ito (2006)
POLITY	Quality of political institutions (−10: full autocracy, +10: full democracy)	Marshall, et al. (2014)

Appendix B

Table 5.4 Augmented Dickey-Fuller (ADF) unit root test results

Level	t-*Statistic*	*First difference*	t-*Statistic*
log(Gini Index)	−3.36**	Δlog(Gini Index)	−6.53***
log(R10/P10)	−2.48	Δlog(R10/P10)	−7.32***
log(RH)	−0.34	Δlog(RH)	−2.99**
log(GDPPC)	−0.15	Δlog(GDPPC)	−3.71***
log(Trade)	−1.78	Δlog(Trade)	−4.86***
log(OIL)	−0.30	Δlog(OIL)	−5.26***
log(POP)	−1.56	Δlog(POP)	−2.32**
Inflation/100	−2.94*	ΔInflation/100	−5.52***
GOVEX	−1.44	ΔGOVEX	−5.97***
FINOPEN	−1.69	ΔFINOPEN	−3.56**
POLITY	−1.61	ΔPOLITY	−5.19***

***refers to statistical significance at 99 % confidence intervals
**refers to statistical significance at 95 % confidence intervals
*refers to statistical significance at 90 % confidence intervals
Notes: Lag length is based on SIC

Notes

1. Economists and other observers have identified several factors that pushed housing prices and rents upward in Iran: excess demand in the housing market (particularly investment demand); speculation of real estate agents; high inflation; Dutch disease; increases in costs of construction (due to reduction of subsidies during the Ahmadinejad presidency, as well as sanctions imposed on the economy of Iran by the United Nations (UN), the United States (U.S.) and European Union); increases in land prices; and currency crisis (for a review see Farzanegan and Gholipour 2015).
2. Iran was ranked 139 out of 189 economies surveyed in 2013 in terms of paying taxes (World Bank 2013).

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