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Original Research Article

Analyzing the Effect of Exchange Rate Shocks on Inflation Inequality: A Case Study of Iran

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This study examines the effects of exchange rate shocks on poor and rich households and inflation inequality in Iran over the period 2003m4-2022m4. Based on the econometric results, a one percentage point increase (depreciation) of the exchange rate (Iranian Rial versus US dollar) is expected to lead to a rise in food price inflation of about 0.1 in the short and 0.8 percentage points in the long run. The effect on non-food price inflation tends to be slightly lower, both in the short and the long run. As the share of food in the consumer baskets is higher for poor than for the rich households, depreciations of the exchange rate are more harmful at the lower end of the income scale. Likewise, poor households will benefit more, if the Rial appreciates against the US dollar.

Keywords: Inflation Inequality, Exchange Rate Shocks.
JEL Classification*:* C10, F31, E31

1 Introduction

The exchange rate has depreciated with many breaks in Iran during the past decade (2011-2021), most likely driven by vast monetary expansion and the implementation of sanctions against Iran (see for example Rahmani et al, 2013; Sharifi-Renani et al, 2014; Ghorbani Dastgerdi et al, 2018). Given that the manufacturing and agriculture sectors are heavily dependent on the imports of raw materials and intermediate goods, the pass-through of the exchange rate is substantial. On the other hand, there has been a considerable

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increase in exports of tradeable goods, notably food, as a result of the sharp depreciation of the Rial. Therefore, although it is expected that imports are substituted by domestic products to some extent, the surge in exports of food likely adds to supply shortages in the domestic market, and subsequently, to food price inflation. Government efforts to tame food price inflation have not been successful so far. Therefore, welfare policies to compensate losses for the poor are needed. On the other hand, empirical studies have shown that the share of food in poor households' expenditures is larger than for rich households. Hence, food price inflation is particularly harmful for poor income households. The responses of poor and rich households to the increase in food prices are different. Azarbayejani et al (2021) show that rich households can reduce the share of these goods by changing their consumption pattern, for example, by consuming less, change in quality and substitution by other goods. However, poor households have to consume a minimum of foods. In fact, the share of foods in their expenditures will increase. In this paper, we study the short and long-run effects of the exchange rate on poor and rich households' expenditures and therefore on inflation inequality. By inflation inequality, we mean the difference between inflation that is relevant for the rich and the poor. In particular, we use the difference between the rate of inflation of the first decile and the tenth decile as an index of inflation inequality.

The increase in the exchange rate affects domestic prices via two channels. The first channel is the direct effect of the exchange rate depreciation on the import prices. In general, this direct effect depends on the import intensity of final goods. The higher the import intensity, the stronger is the direct effect. The second channel is the effect of the exchange rate depreciation on the exports of domestic goods as a result of lower relative prices of domestic goods in international markets. The depreciation of the Rial lowers the relative price of domestic goods for trade partners with the associated increase in exports. The effect of exchange rate changes is higher for tradable goods including food, compared to non-tradeable goods. In contrast, the share of non-tradeable goods, with housing as the most important item, is higher for rich households. Overall, it can be concluded that the exchange rate shocks have higher effects on poor households' inflation which brings about higher inflation inequality.

The econometric findings suggest that a one-percentage-point increase in the exchange rate will cause food price inflation to rise by approximately 0.1 in the short and 0.8 percentage points in the long run, respectively. The long run effect is substantially higher since a full transmission of the exchange rate

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does not occur instantaneously. On the other hand, the effect on the non-food price inflation rate is similar, albeit a little lower. Inflation inequality will therefore modestly increase. Due to the different shares in the consumer basket, exchange rate depreciations imply higher welfare losses for the poor.

After introducing the data, we show that the pass-through of the exchange rate is higher for foods than non-foods. The ARDL model is used for monthly data over the time period 2003-2022. By decomposing the inflation rates, we show that the impact of exchange rate changes is higher for foods, compared to non-foods. Hence, depreciations have more harmful effects for poor households. The hypothesis is examined by constructing an index of inflation inequality.

The paper is organized as follows. The next section (Section 2) is a brief review of the literature. The data are described in Section 3. Section 4 presents the econometric results. Finally, Section 5 concludes with some policy recommendations.

2 Findings from the Literature

Although there have been many studies on the effects of the exchange rate shocks on domestic prices and inflation using different empirical methods in Iran, there has been no study on the effect of the exchange rate shocks on inflation inequality. As it affects social welfare, it is of utmost importance for policymakers. For example, Rateghi (2005) and Khoshbakht and Akhbari (2008) have studied the effects of the exchange rate devaluations on the consumer price index, the wholesale price index and import prices in Iran. These studies have shown positive and significant effects of the exchange rate depreciations on domestic prices. Shajari et al (2005) examined the pass-through of the exchange rate on domestic prices by using a vector error correction model for Iran. Their findings imply that the pass-through of the exchange rate is rather weak in the short-run, but quite higher in the long-run. Madanizadeh and Ebrahimi (2016) have analyzed the effects of the exchange rate on domestic prices and the role of other factors on these effects in the framework of a SVAR model. They found a pass-through in the range between 30 to 40 percent over the period 1992-2014. Evidence for the international economy is also available. Based on Ihrig et al (2006), the pass-through of the exchange rate is a little more than 10 percent for the G7 countries. According to Kara and Ogunc (2005) the pass-through of the exchange rate is about 20 percent for Turkey. In a mixed sample of industrial and developing countries, Choudhri and Hakura (2006) found that the size of the pass-through depends

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on the inflation level. They reported 16, 35, and 56 percent for low, medium, and high inflation countries, respectively.

Regarding the effects of exchange rate devaluations on the consumer basket of households, Fajgelbaum and Khandelwal (2016) have shown that low income households usually are faced by a higher share of imported goods such as foods and cloths, compared to high income households. Therefore, low-income households are more prone to suffer from depreciations of the exchange rate. Cravino and Levchenko (2017) have examined the effect of large depreciations of the Peso on the cost of living in the different income groups in Mexico. As the share of tradeable goods in poor households' expenditures is higher, the impact of exchange rate changes is larger for poor households. Compared to the literature, the paper offers progress in three regards. First, the effects of exchange rate on inflation inequality are studied. Second, the subsequent impact on the consumer baskets of rich and poor households is investigated. Finally, third, the analysis is based upon an index of inflation inequality, instead of the Plutocratic Gap which has been used in previous studies.

3 Data

We study the effects of the exchange rate on three variables: (1) consumer price indices, separated for the first and the tenth deciles to capture inflation inequality, (2) the price indices both for food products and non-foods, and (3) the quantity index of exports of food, because a currency depreciation might cause foods to be exported. As such, it will reduce the supply of foods available in the domestic market and can lead to additional inflation. In the analysis, expenditure shares for food and non-foods for the different deciles are considered. They are calibrated in line with consumer behavior in 2010. The results are very robust against this choice[1]. Growth rates are calculated point to point for each month. All figures show growth rates.

According to Figure 1, inflation rates have been rather high and follow an upward trend in Iran, with annual averages between 20 and 40 percent over the observation period. In most years, food price inflation has been slightly above its non-food counterpart. In addition, there have been spectacular depreciations of the exchange rates during the past decade. The data on exchange and inflation rates have been taken from the Statistical Center of Iran and the Central Bank of the Islamic Republic of Iran, respectively.

[1] Results for other years are very similar and available upon request.

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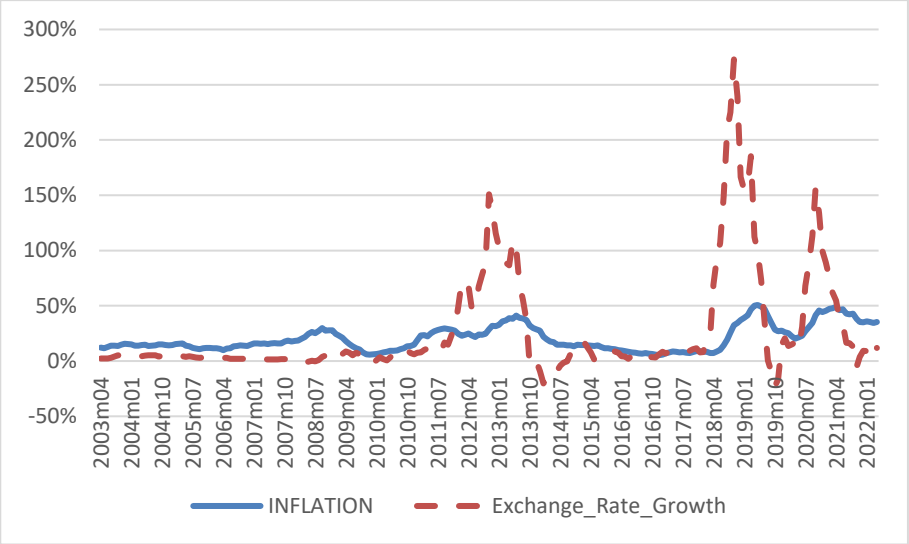

Figure 1. Exchange rate growth and inflation, 2003m4-2022m4
Source: own illustration, data taken from https://www.tgju.org/ and https://www.amar.org.ir/

In line with Engle's law, the share of foods in the households' consumer basket has a negative relationship to income (see Figure 2).

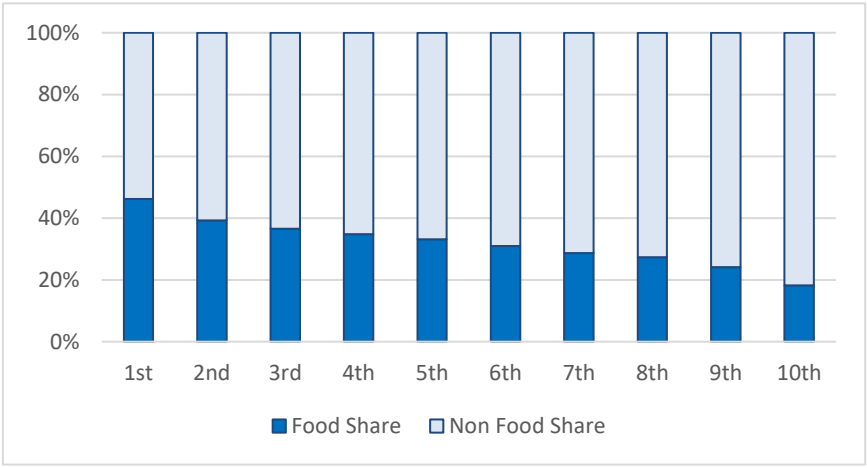

Figure 2. Share of food expenditures for deciles in the income distribution
Source: research finding, raw data from https://www.amar.org.ir/

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Therefore, it is expected that the welfare loss as a response of exchange rate depreciations is more detrimental for poor households. Thus, the consumer price indices for the first and tenth deciles are analyzed. To account for possible changes in the households' behavior, the price indices include annual weights for the expenditure shares which are updated each period.

For the analysis, we need to compute the weights of groups of goods that households consume and the rate of inflation of groups of goods. The raw data of households' budget are taken from the website of Statistical Center of Iran. Then, at the household level, expenditures are computed after cleaning the data. In the next step, any household's equivalent expenditure is calculated, according to the suggestions of the OECD[1]. Based on the computed equivalent expenditure, households are re-arranged. In particular, deciles are constructed using the equivalent weights. Finally, the consumption weight of each decile is obtained. By using group inflation and weights, equivalent inflation of any group is obtained. To compute the weights of each group of goods consumed by rural and urban households in different deciles and also the rate of inflation of each group of goods, the data on households' budget and the data on the price indices of groups of goods for rural and urban households are used, respectively. These data is published by Statistical Center of Iran. If we compute the inflation rates for the first (the poorest) and the tenth (the richest) deciles as explained, the result is as shown in Figure 3.

[1] For more details on OECD measure see https://www.oecd.org/els/soc/OECD-Note-EquivalenceScales.pdf.

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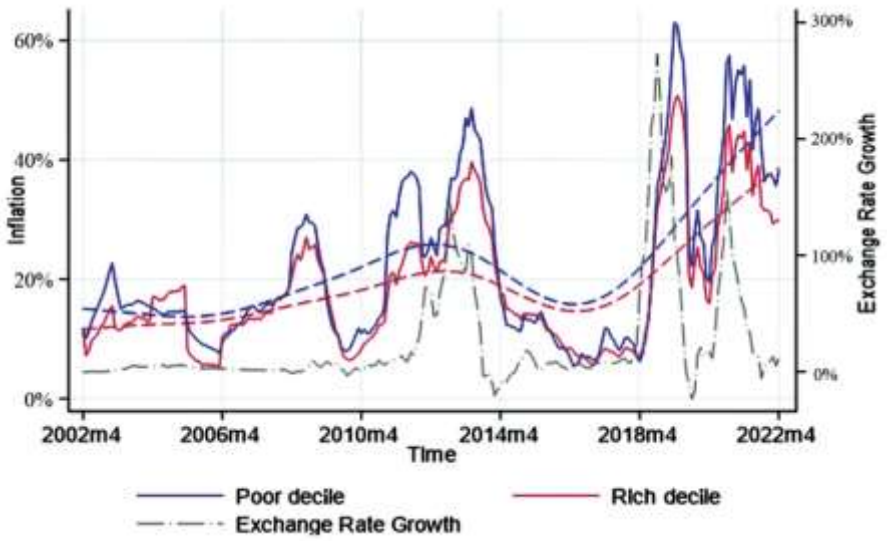

Figure 3. Inflation rates for the first and the tenth deciles, 2003m4-2022m4
Differences of inflation between cities are not taken into account
Source: research finding, raw data from https://www.tgju.org/ and https://www.amar.org.ir/

Figure 3 shows the rates of inflation for the first and the tenth deciles (solid lines) and their trends (dotted lines), the latter obtained by the Hodrick-Prescott filter. Also, the growth rate of exchange rate is shown. In general, inflation for poor households is higher than for rich households. During periods of exchange rate depreciations, inflation inequality has increased, implying losses in purchasing power especially for the poor.

The index of inflation inequality is defined to be the difference between the inflation rates between the first and the tenth deciles. It is exhibited in Figure 4, together with the smoothed growth rate of the exchange rate. In response to an exchange rate shock, inflation inequality increases.

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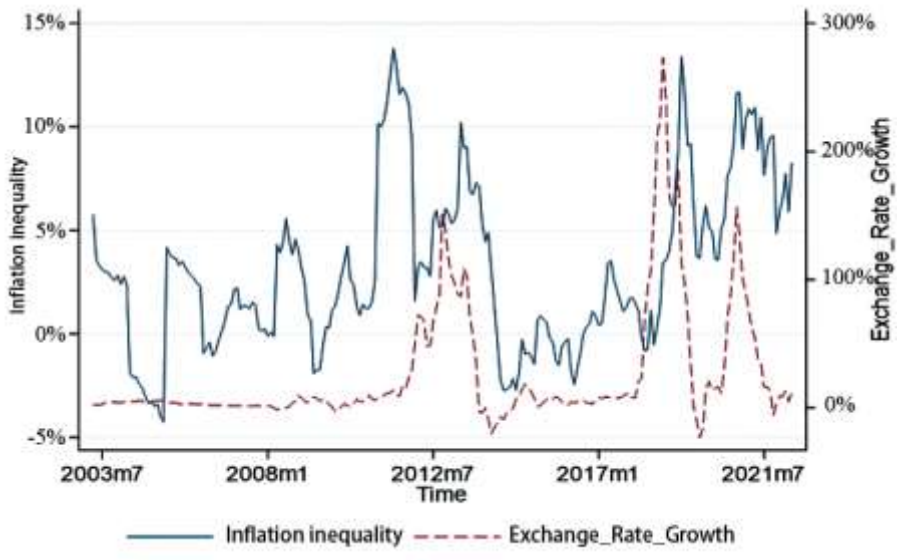

Figure 4. Growth rate of the exchange rate and inflation inequality index, 2003m04-2022m04
Source: research finding, raw data from https://www.tgju.org/ and https://www.amar.org.ir/

One of the main reasons for higher rate of food price inflation compared to non-food price inflation is the increase of food exports, as they are tradable goods. To check this contention, we examine the change of food exports during jumps of the exchange rate for which data is available. Since an index for food exports is not available, it is necessary to compute it. In effect, this is not the focus of the paper and is shown to support our contention that the increase of the exchange rate causes the export of foods to increase which results in higher inflation for tradable goods, especially foods.

To do this, we need to compute the quantity index of the exports of foods that are consumed by the households. To compute this index, we first convert all goods exported via customs border and classified based on HS. This is the reference system of describing and classifying goods applied in customs

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according to the COICOP classification[1]. Then, by using chained methods[2] and compare each month to previous month and using the dollar value index as the weight, the quantity changes in exports is computed as an index and shown in Figure 5. There have been considerable increases in the exports of foods during the recent exchange rate shocks. Because data are not available, the quantity index is not defined for the whole period under study. It is computed for the recent exchange rate shock to show that there is an increase in food exports, as tradeable goods, after exchange rate jump or domestic currency depreciation.

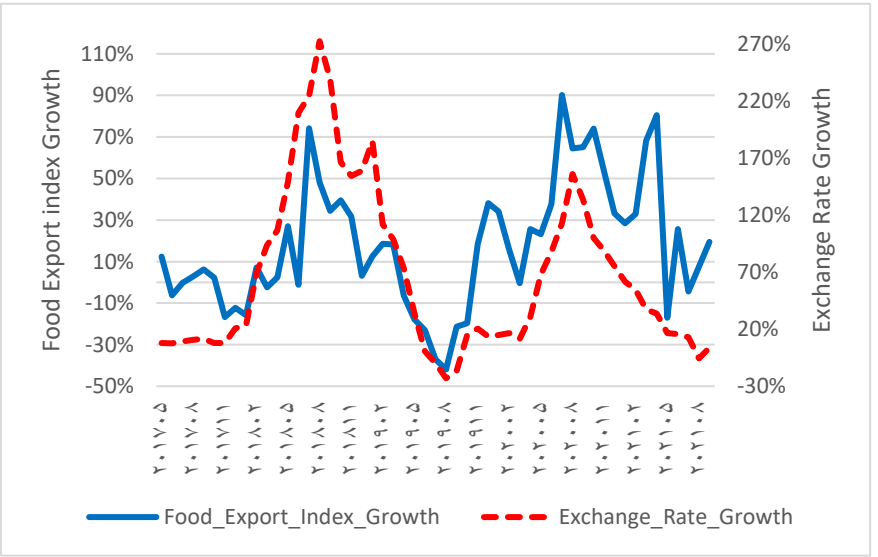

Figure 5. Quantity index of exported foods
Source: research finding, raw data from https://www.tgju.org/ and https://irica.ir/

[1] We first gathered HS data from Customs' website https://irica.ir. Then, to correspond the data from Customs with households' consumption basket, we first converted HS code to the CPC code, i.e. the Central Product Classification and then to COICOP code by using https://unstats.un.org.

[2] Since the basket of exported goods is changing constantly, the chain method is used in which the dollar value index is used as the weight. In this method, the data for two consequent months are used to compute the quantity and price (for example, for foods in households' budget data) by using the Paasche formula. Then, by dividing the obtained quantity and price to the average of the base year, the quantity and price indices are computed. This is repeated for the next months.

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4 Exchange Rate and Inflation Inequality

In the previous section we showed that the effect of the exchange rate jump is higher for foods, compared to non-foods. In addition, the share of foods is higher in the consumption expenditures of the poor, compared to the rich. Therefore, the pass-through of the exchange rate increase for the poor households is higher than the rich households. Hence, devaluations of the exchange rate lead to increases in inflation inequality.

The expenditures of the ith household's for consumption purposes are defined as the sum of the changes in the cost of his consumer basket (π_g^i) times the share of that goods and services in his expenditures (w_g^i). Assuming that we have G sets of goods and services in the consumer basket, the change in the whole cost of living of the ith household (as a representative for a group or decile) is:

$$\pi^i = \sum_{g\in G} w_g^i \pi_g^i \quad (1)$$

By adding and subtracting the term $\sum_{g\in G} w_g \pi_g$ to the right side and re-arranging, the following equation is obtained[1]:

$$\pi_t^i = \sum_{g\in G} w_g \pi_{g,t} + \sum_{g\in G}\left(w_g^i - w_g\right)\pi_{g,t} = \gamma exch_t + \left(\mathrm{w_f^i} - \mathrm{w_f}\right)\left(\pi_{\mathrm{f,t}} - \pi_{nf,t}\right) + \varepsilon_t \quad (2)$$

Defining $\pi_{g,t} = \gamma_g exch_t + \varepsilon_{j,t}$ as the short-run and the long-run pass-through of the exchange rate on the rate of inflation of groups of consumer goods of households and substituting in the above equation, we will have:

$$\pi_t^i = \left(\gamma + \left(w_f^i - w_f\right)\left(\gamma_f - \gamma_{nf}\right)\right) exch_t + \varepsilon_t + \left(w_f^i - w_f\right)\left(\varepsilon_{f,t} + \varepsilon_{nf,t}\right) \quad (3)$$

The indices f and nf stand for food and non-food, respectively. As mentioned before, the pass-through of the exchange rate on the inflation rate of foods was higher than non-foods in the short-run and the long-run for the whole period (2003-2022); that is, ($\gamma_f > \gamma_{nf}$). Due to different shares in the consumer baskets, we have $w_f^p > w_f$, for the poor and $w_f^r < w_f$ for the rich. Therefore, it is expected that the pass-through of the exchange rate for the poor to be higher than the rich. This means higher inflation inequality as a consequence of exchange rate devaluation.

[1] $\sum_{g\in G}\left(w_g^i - w_g\right)\pi_g = \left(\mathrm{w_f^i} - \mathrm{w_f}\right)\pi_{\mathrm{f}} + \left(\mathrm{w_{nf}^i} - \mathrm{w_{nf}}\right)\pi_{\mathrm{nf}} = \left(w_f^i - w_f\right)\pi_f + \left(\mathrm{w_f} - \mathrm{w_f^i}\right)\pi_{\mathrm{nf}} = \left(\mathrm{w_f^i} - \mathrm{w_f}\right)\left(\pi_{\mathrm{f}} - \pi_{nf}\right)$

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5 Regression Analysis

We showed in Figure 1 that the effect of the exchange rate shock on food inflation is higher than on non-food inflation. On the other hand, the share of foods in the households' expenditures has a negative relationship with the level of income (Figure 2). Thus, the shares of foods expenditures for poor and rich households are higher and lower than the average for all households, respectively. Therefore, it is expected that the effect of the exchange rate depreciation tends to be more harmful for poor households than households in other deciles. To examine this assertion, we examine the effect of the exchange rate shocks on the inflation rates of consumer price indices of foods and non-foods. Then, the relationship between the exchange rate shocks and inflation inequality is investigated. It is expected to find a positive relationship between the exchange rate shocks and inflation inequality.

To estimate the effects in the short and long run, we define two sub-periods 2009m04-2016m04 and 2015M04-2022M04, in which Iran has experienced two major exchange rate shocks. In addition, the relationships are examined for the entire period 2003M04-2022M04. The estimation for sub-periods with similar results for the whole period is done to see if the results are robust.

The short-run and the long-run effects of the exchange rate on inflation inequality are investigated by the ARDL model. As a first step ADF tests are used. The results are shown in Table 1. As it is seen, every variable includes one unit root, implying that they are non-stationary in their levels, but stationary in first differences.

Table 1
The results of ADF test

Variable	Level	First differences
Food Inflation	0.352	-8.890
Non-Food Inflation	0.108	-3.163
Exchange Rate Growth	-	-2.963
Inflation of the first decile	-0.937	-11.270
Inflation of the tenth decile	0.295	-8.285

Left hand side distribution. Critical value at the 0.05 level is -2.575. Source: Research Findings

The estimated ARDL and the short-run and the long-run effects of the exchange rate on the rate of inflation of food and non-food are displayed in Table 2. While the long run is based on level variables, the short run refers to differenced series.

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Table 2
Effects of the exchange rate on the rate of inflation for foods and non-foods

	2003M04-2022M04		2009m04-2016m04		2015M04-2022M04	
	Food Inflation	Non-Food Inflation	Food Inflation	Non-Food Inflation	Food Inflation	Non-Food Inflation
Selected Model:	ARDL(2,0)	ARDL(4, 1)	ARDL(1,0)	ARDL(2, 1)	ARDL(2, 0)	ARDL(1,1)
Long-term effect of exchange rates growth	0.793 (7.762)	0.654 (3.376)	0.775 (6.364)	0.448 (2.830)	0.703 (5.854)	0.670 (5.001)
Short-term effect of exchange rates growth	0.041 (7.716)	0.009 (3.768)	0.053 (4.789)	0.011 (2.184)	0.041 (5.624)	0.019 (8.360)
CointEq(-1)*	-0.051 (-7.886)	-0.023 (-3.786)	-0.069 (-4.891)	-0.023 (-2.355)	-0.058 (-5.802)	-0.028 (-8.634)

t statistics in parentheses
ARDL Model selection criteria: Schwarz criterion. Source: Research Findings.

As shown in Table 2, the pass-through of the exchange rate on the rate of inflation of foods is higher than the rate of inflation for non-foods. This result holds both for the short and long run in all sample periods. In particular, a 1 percentage point increase in the exchange rate causes the rate of inflation of foods to increase by about 0.041 and 0.793 percent in the short-run and the long-run, respectively. In contrast, inflation in the price of non-foods rises only by 0.009 and 0.654 percent in the short- and the long-run, respectively. The results are based on ARDL models and exhibited in Table 3.

Table 3
Long-run relationship between the exchange rate, income specific inflation rates and inflation inequality, 2003M04-2022M04

	F-statistic	**lower bound**	**upper bound**
Relationship between Exchange Rates and Inflation of the first decile	24.984	4.81	6.02
Relationship between Exchange Rates and Inflation of the tenth decile	27.129	4.81	6.02
Relationship between Exchange Rates and index of Inflation inequality	9.277	4.81	6.02

Null Hypothesis: No long run relationship.
Lower and upper bounds for the critical values at the 0.05 level. Source: Research Findings

As is evident, the estimated value of F is higher than the critical value for three relationships. As the empirical F-value exceeds the critical value for all three relationships, the null hypothesis of no co-integration can be soundly rejected. Finally, we estimate income specific ARDL models (Table 4).

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Table 4
Income specific ARDL models

	2003M04-2022M04			2009m04 2016m04			2015M04-2022M04		
	first decile Inflation	tenth decile Inflation	index of inflation inequality	first decile Inflation	tenth decile Inflation	index of inflation inequality	first decile Inflation	tenth decile Inflation	index of inflation inequality
Selected Model	ARDL (1,1)	ARDL (1,1)	ARDL (1, 0)	ARDL (2,0)	ARDL (2,1)	ARDL (1,0)	ARDL (1, 0)	ARDL (1, 0)	ARDL (1, 0)
Long-term effect of exchange rates growth	0.768* (5.707)	0.657 (5.849)	0.093 (3.643)	0.622 (4.001)	0.546 (4.313)	0.0855 (1.649)	0.617 (4.918)	0.494 (5.564)	0.106 (2.662)
Short-term effect of exchange rates growth	0.033 (7.065)	0.026 (7.354)	0.007 (3.730)	0.027 (3.177)	0.016 (3.087)	0.005 (1.221)	0.042 (5.930)	0.035 (6.354)	0.007 (3.448)
CointEq(-1)*	-0.0433 (-7.084)	-0.041 (-7.382)	-0.079 (-4.317)	-0.044 (-3.344)	-0.03 (-3.166)	-0.065 (-1.804)	-0.068 (-5.972)	-0.072 (-6.402)	-0.069 (-3.549)

t statistics in parentheses.
Model selection criteria: Schwarz criterion. Source: Research Findings

Exchange rate shocks in the sample period have been the results of sanctions and the vast monetary expansion. The estimates for all periods reveal that the short-run and the long-run effects of exchange rate changes are higher for the poor than for the rich households. One potential explanation is the high inflation environment in Iran for about 50 years which has caused prices to adjust rather quickly. For the first decile, impact of the exchange rate on inflation is 3.3 in the short and 76.8 percent in the long run, respectively. But these effects are 2.6 and 65.7 percent for the tenth decile, respectively. This causes the inflation inequality index to increase by 0.7 and 9.3 percent for 1 percentage point increase in the exchange rate in the short-run and the long-run, respectively.

Exchange rate shocks in the sample period have been the results of sanctions and vast monetary expansion. The estimates in Table 4 for all periods reveal that the short-run and long-run effects of exchange rate changes are higher for poor households than for rich households. One potential explanation is the high inflation environment in Iran for about 50 years, which has caused prices to adjust rather quickly. As indicated in Table 4, the impact of the exchange rate on inflation for the first decile is 3.3 in the short run and 76.8 percent in the long run, respectively. For the tenth decile, these effects are 2.6 and 65.7 percent, respectively. This causes the inflation inequality

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index to increase by 0.7 and 9.3 percent for a 1 percentage point increase in the exchange rate in the short run and the long run, respectively.

6 Conclusion

The depreciation of the Rial has been among the most important problems Iran's economy has faced during the past decade. The exchange rate jump had heterogeneous effects on the inflation rates of different goods and services because Iran's manufacturing and even agriculture sectors are highly dependent on the imports and because there are legal and illegal exports of foods to neighboring countries. Since the basket of goods and services that poor and rich households consume is different, the changes in the prices of goods and services had different effects on the cost of living of specific households. By using ARDL models, we have shown that the short- and long-run effects of the exchange rate on the rate of inflation of foods are higher than for non-foods. On the other hand, based on the consumption pattern of poor and rich households, the share of foods in the consumption expenditures of the poor is higher than the rich. Therefore, the cost of living of the poor increases more than the rich. This means that the inflation inequality would rise, implying more harm for the poor. Policymakers should implement fiscal measures especially designed for low-income households to compensate for the higher cost of living.

Data Availability Statement:

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of Interests Statement:

The authors have no relevant financial or non-financial interests to disclose

References

Azarbayejani, A., Rahmani, T., Madani Zadeh, S. A., Afrouzi, H. (2021). Inflation inequality and household response effect: the case study of Iran (in Persian). Journal of Economic Research, 56(1), 1-24.

Choudhri, Ehsan U. and Hakura, Dalia S. (2006). Exchange rate pass-through to domestic prices: does the inflationary environment matter? Journal of international money and finance, Volume 25, Issue 4, 614-639.

Cravino, Javier; Levchenko, Andrei A. (2017). The distributional consequences of large devaluations. American Economic Review, 107(11), 3477-3509.

Customs of the Republic Islamic of Iran, Monthly Data on Exports, https://irica.ir.

Ihrig, J. E.; Marazzi, M. and Rothenberg. (2006). Exchange-rate pass-through in the G-7 countries. FRB International Finance Discussion Paper,Number 851.

[DOI: 10.61186/jme.18.4.441]

Ghorbani Dastgerdi, H., Binti Yusof, Z., and Muhammad Shahbaz. 2018. Nexus between economic Sanctions and and inflation: a case study in Iran. Applied Economics, Volume 50, Issue 49, pp. 5316-5334.

Shajari, H., Jalali, A., and Tayebi, K. (2005). Analyzing the exchange rate pass through in Iran (In Persian), Knowledge and Development, 16, 51-73.

Kara, H. and Ogunc, F. (2005). Exchange rate pass-through in Turkey: It is slow, but is it really low? Working Papers 0510, Research and Monetary Policy Department, Central Bank of the Republic of Turkey.

Khoshbakht, A. and Akhbari, M. 2008. Exchange rate pass-through to consumer price indexes and import in Iran (in Persian), Economic Research 27(7), 51-82.

Madanizadeh, S. A. and Sajad Ebrahimi. (2016). The changes in the exchange rate and its determinants in Iran(In Persian), Applied Economic Studies in Iran,18(5), 140-170

Fajgelbaum, Pablo. D. and Khandelwal, Amit. K. (2016). Measuring the unequal gains from trade. The Quarterly Journal of Economics, 131, 1113-1180.

Rahmani, T., Fallahi, S., and C. Dreger. 2013. Inflation and cost push in Iran's Economy. Iranian Economic Review, 17(3), pp. 1-24.

Rateghi, M. (2005). Analyzing the effects of the exchange rate fluctuations on the consumer price index in Iran (in Persian), MA Thesis, Department of Economics, University of Tehran.

Sharifi-Renani, H., Raki, M., and Naghmeh Honarvar. 2014. Monetary policy and exchange rate overshooting in Iran. International Economic Studies, 44(1), pp. 67-74.

Statistical Center of Iran, Households Budget Data, 1995-2017.

Statistical Center of Iran, Rural Consumer Price Index Data, 1995-2019.

Statistical Center of Iran, Urban Consumer Price Index Data, 2001-2019.

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