

RECENT WELFARE DYNAMICS IN IRAN

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Key Messages

- **Impact of Economic Shocks:** Sanctions and the COVID-19 pandemic significantly affected Iran's economy, resulting in income declines and increasing poverty headcounts, particularly in 2018/2019.
- **Poverty Mobility and Income Dynamics:** The paper identifies distinct patterns of poverty mobility between 2018 and 2020. Key factors include job losses, illiteracy, and youth, with agriculture being a particularly volatile sector.
- **Role of Social Safety Nets:** Cash transfer top-ups and pension benefits helped mitigate the impact of economic shocks on household income, highlighting the importance of robust social protection programs.
- **Regional and Demographic Variations:** Poverty mobility varied significantly across different regions and demographics, with rural areas and younger, less-educated households experiencing more volatility.
- **Income Disparities:** While lower-income households saw some income increases due to social programs, higher-income households experienced significant declines, indicating a flattening of income disparities.

Context (2011-2020)

Demographics

- Population: Approximately 87 million (2020)
- Urbanization: 75.5% urbanized (2020)
- Median Age: Increased from 29 (2010) to 34 (2020)
- Household Size: Decreased from 3.8 to 3.4 (last decade)

Economy

- Economic Growth: Average annual per capita GDP contraction of -0.6% (2011-2020)
- Oil Dependency: Heavy reliance on oil revenue; economic instability due to oil price volatility and sanctions
- Inflation: Persistent inflation eroding purchasing power

Poverty

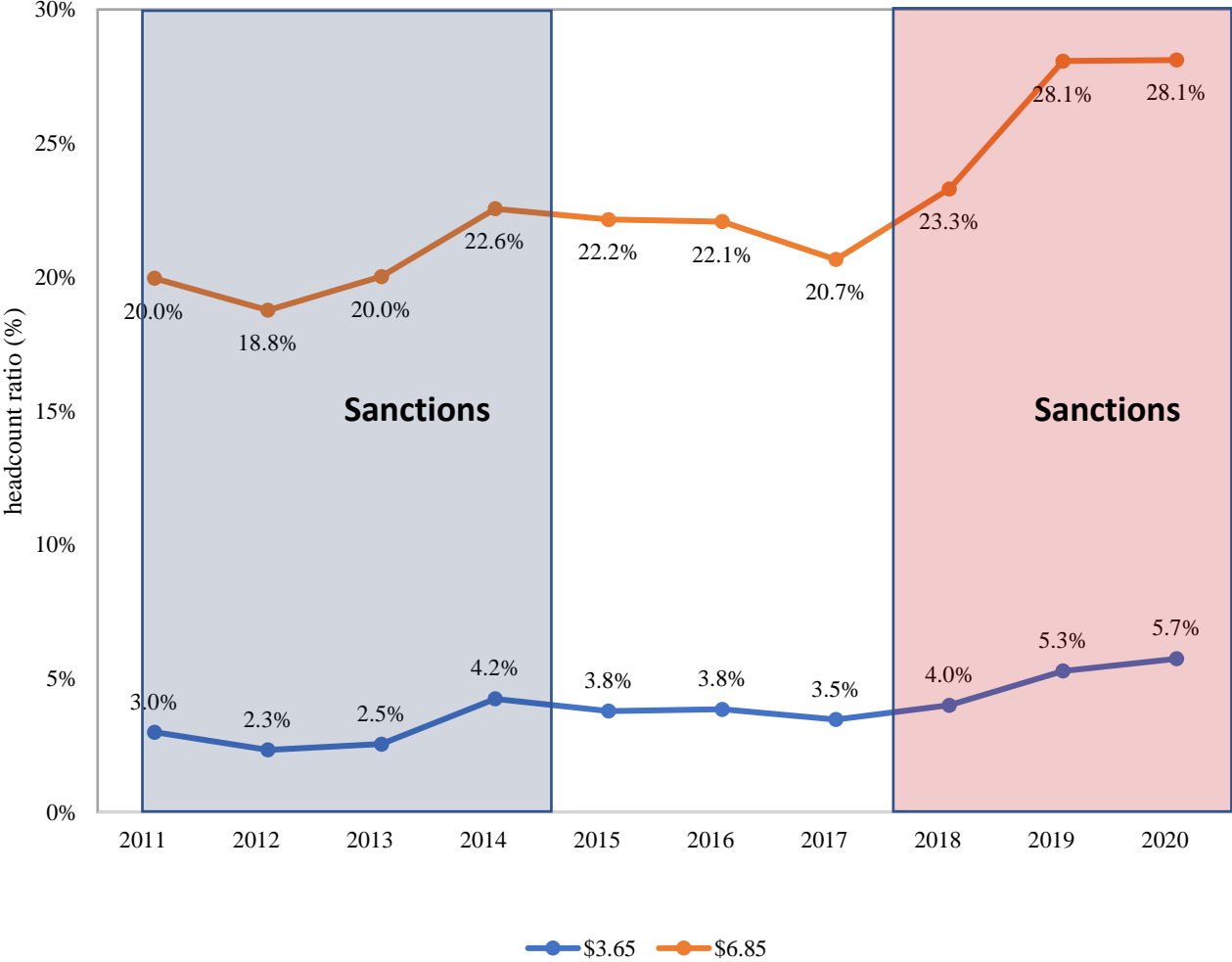
- Poverty Increase: ~10 million Iranians fell into poverty (2011-2020)
- Poverty Rate: Increased from 20% to 28.1%
- Rural vs Urban: Higher poverty increase in rural areas (14 percentage points) compared to urban areas (7 percentage points)

Labor Market

- Employment Shift: From agriculture to services and industry
- Unemployment: High, particularly among youth and women
- Female Participation: Low female labor force participation; significant barriers for women

Study Period (2018-2020)

Poverty incidence, 2011-20



2018-2020: Serious of Economic Shocks,

- a. Reimposition of US Sanctions,
- b. COVID-19 Pandemic further worsened economic difficulties,
- c. Poverty Headcount Rose from 23.3% in 2018 to 28.1% in 2020.

Source: World Bank calculation using Household Income and Expenditure Survey (HIES) data (2011–20).



Data

- Source: 2018-2020 rounds of Household Expenditure and Income Survey (HEIS) of Iran.
- Rotating Panel Data:
 - A third of households rotated out each year.
 - Constructed two two-year panels (2018-19 and 2019-20)
 - Corrected for false matches and selection bias

Panel-years	2018-2019		2019-2020	
	Number of HHs	% remaining	Number of HHs	% remaining
Total HHs in cross section in the first year	38,960	100.00%	38,328	100.00%
HHs designated as panel	18,114	46.49%	18,647	48.65%
Number of HHs re-interviewed in the second year of panel	14,537	37.31%	15,506	40.46%
Attrition rate	19.75%		16.84%	
Number of HHs remaining in the sample after dropping possible false matches based on age and gender of the head	13,164	33.79%	14,355	37.45%

Methodology

OLS Regression

$$\ln(\Delta Y_i) = \beta_0 + \beta_1 X_i + \epsilon \quad (1)$$

Where $\ln \Delta Y_i$ is the change in the log of household i total income, X_i is a dummy variable capturing household (i) characteristics at the baseline year: income levels (bottom 40 and top 40), household size (larger or equal to 5), head employment mobility from first year of the panel to second year of panel (gained and lost job), head employment sector (Agriculture, Manufacturing, Construction and Wholesale), head education level (No Education, Primary and Upper Secondary), head marital status (Married, Widowed), Head age (20-29, 30-39, 40-49), head gender and household ownership.

In addition, it tests the role of social safety nets in buffering or amplifying income under economic pressure, using the following equation:

$$\ln(\Delta Y_i) = \beta_0 + \beta_1 X_i + \beta_2 Z_j + \beta_3 X_i Z_j + \epsilon \quad (2)$$

Where X_i is a dummy variable representing household heads who gained job, lost jobs, in the bottom 40 or top 40, and Z_j represents household participation in social transfer programs (e.g., scholarships, retirement benefits, subsidies), and β_3 captures the interaction effects between household characteristics and these programs.

Methodology

Quantile Regression

$$Q_{\ln\Delta Y_i}(\tau|D_{ij}) = \alpha(\tau) + \sum_j \delta_j(\tau)D_{ij} \quad (3)$$

Where $\ln\Delta Y_i$ is the change in the log of household i total income, D_{ij} is an indicator that takes a value of 1 for family i if it has the household characteristic j at the baseline and a value of 0 otherwise. These characteristics capture the income levels, education level, age, marital status, work mobility, employment sector of the head of the household and household size similar to Equation (1). The regression looks into more comprehensive information of conditional quantile functions, where each quantile function estimates the behavior of a certain point in the conditional distribution, and thus identifies the conditional distribution completely (Khalili et al., 2021).

Main Findings

Poverty Mobility

Poverty rose sharply in 2018-19, with more households becoming poor. While the poverty rate stabilized in 2019-20, there was significant movement in and out of poverty.

Poverty transitions (percent of population) 2018-2019

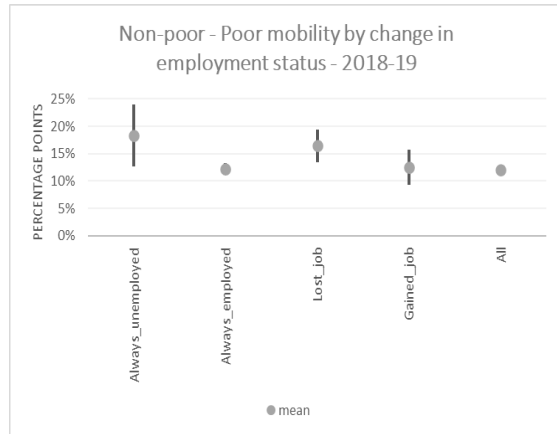
		2019		
		non-poor	poor	Total
2018	non-poor	68.15	11.07	79.21
	poor	5.89	14.9	20.79
	Total	74.04	25.96	100

Poverty transitions (percent of population) 2019-2020

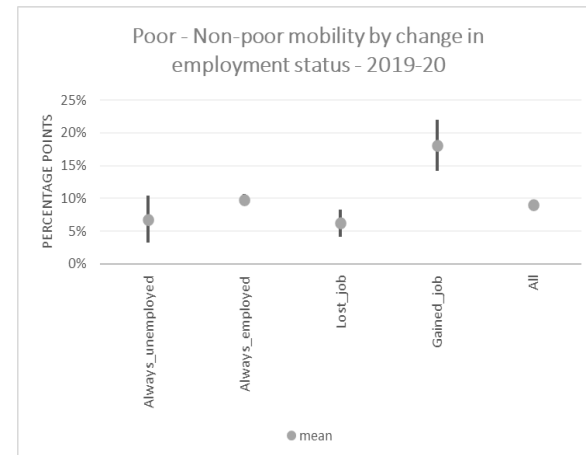
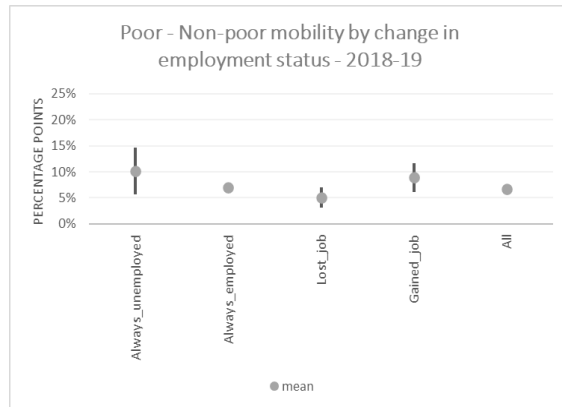
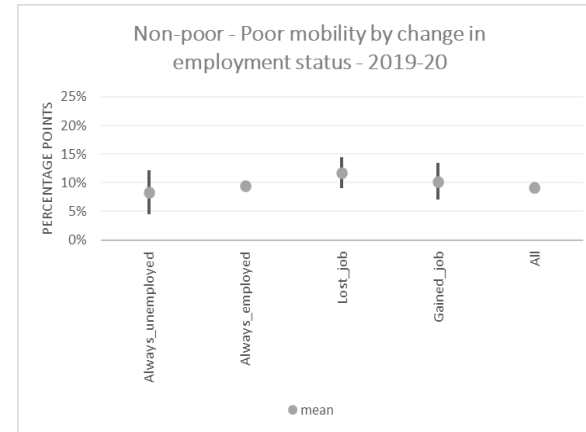
		2020		
		non-poor	poor	Total
2019	non-poor	67.22	8.59	75.81
	poor	7.91	16	24.19
	Total	75.13	24.87	100

Households where the head lost their job were more prone to falling into poverty.

2018-19



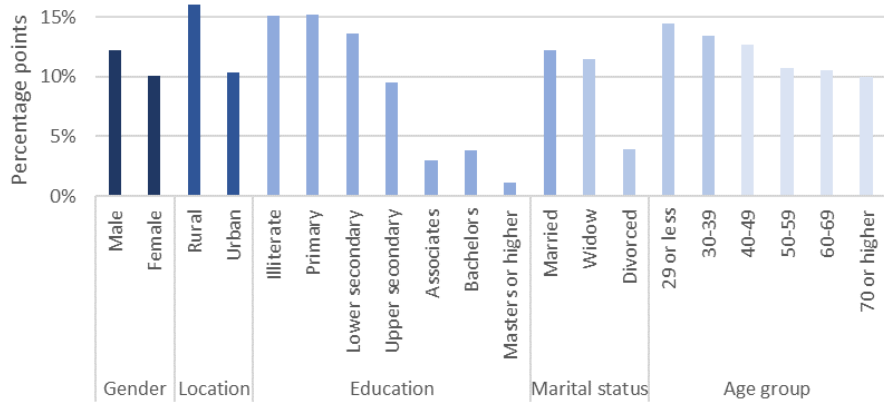
2019-20



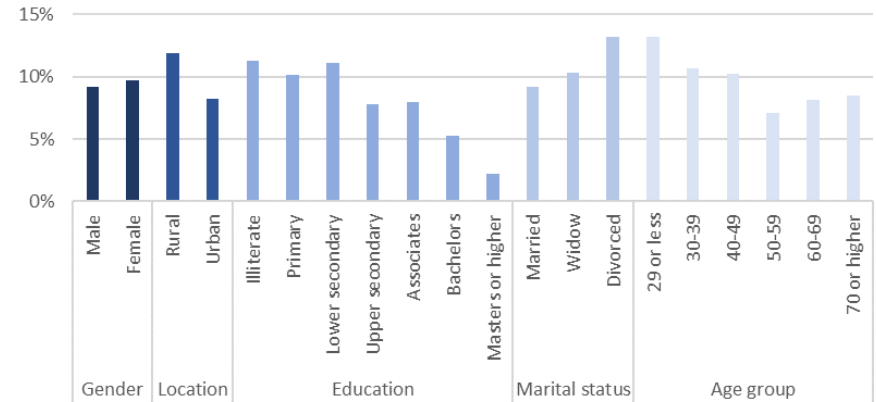
Similarly, households headed by illiterate, young individuals, or lived in rural areas were vulnerable.

Poor to Non-poor mobility by household Characteristics

2018-19

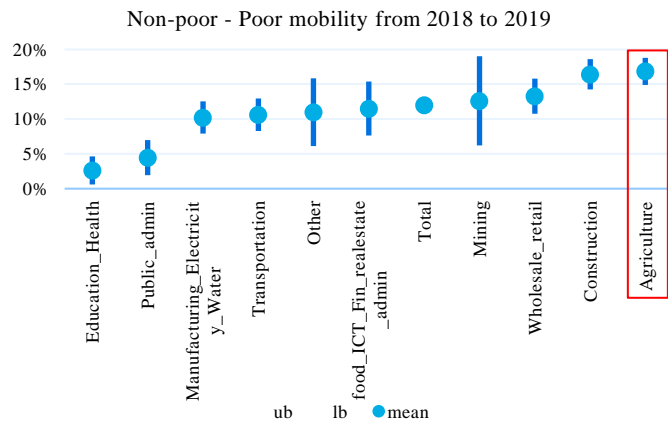


2019-20

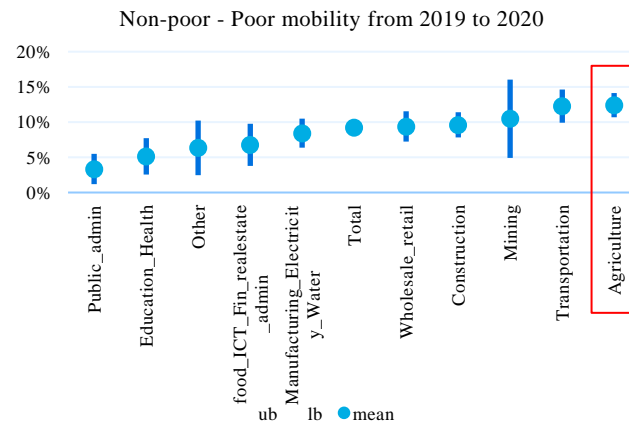


Households with heads employed in agriculture are most vulnerable to poverty transitions, experiencing the highest rates of both falling into and escaping poverty.

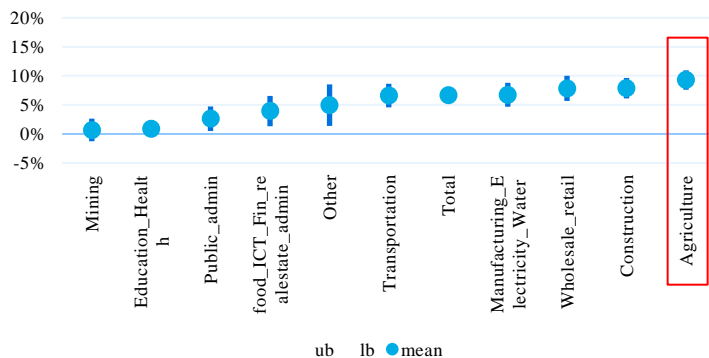
2018-19



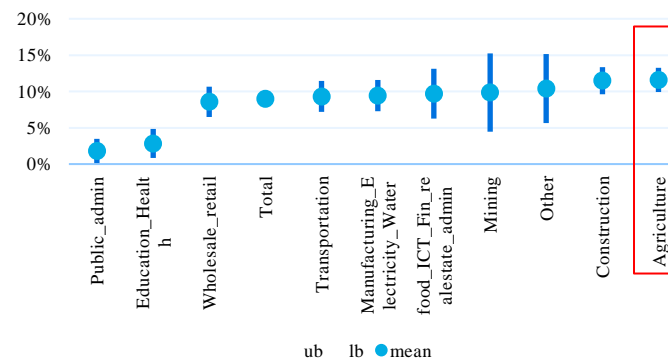
2019-20



Poor - Non-poor mobility from 2018 to 2019

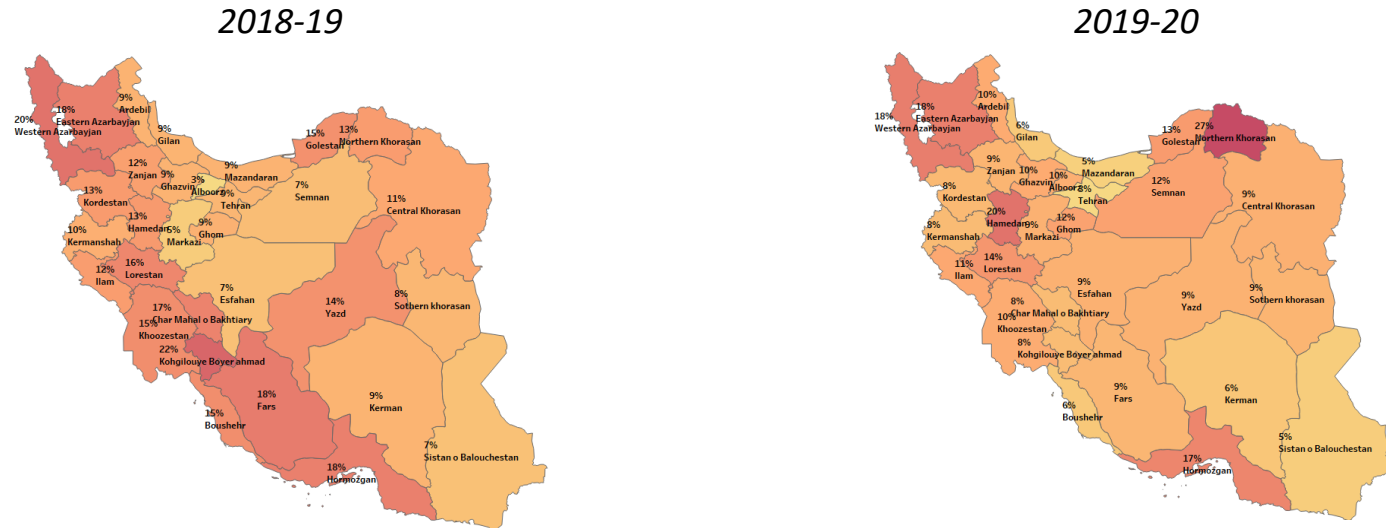


Poor - Non-poor mobility from 2019 to 2020

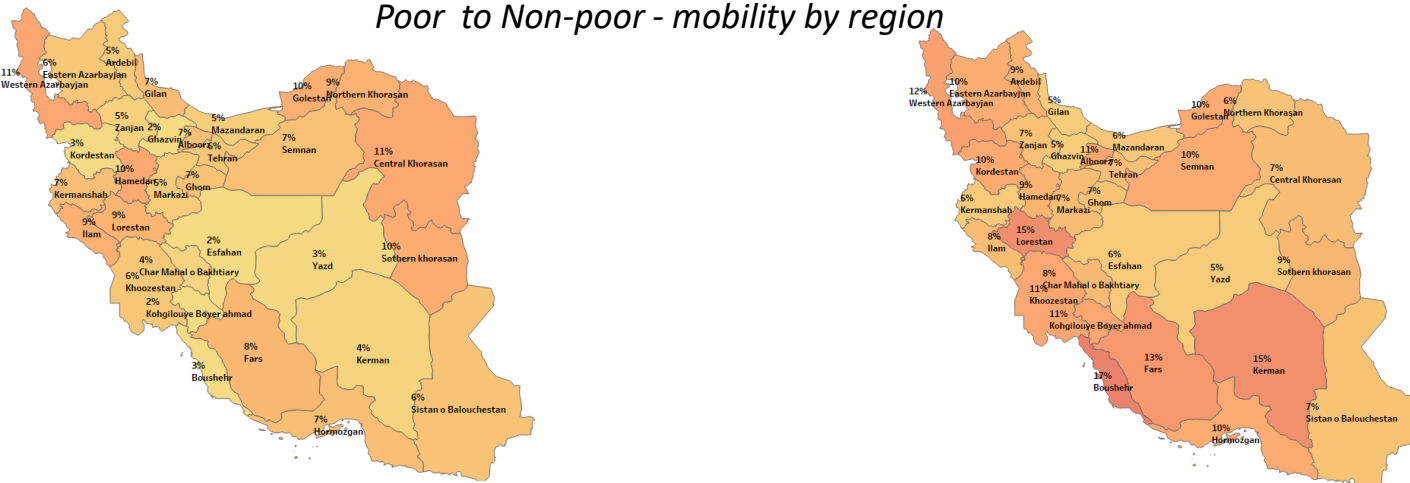


Regionally, poverty mobility was most pronounced in provinces such as Western Azerbaijan, Northern Khorasan, and Hamadan.

Non-poor to Poor mobility by region

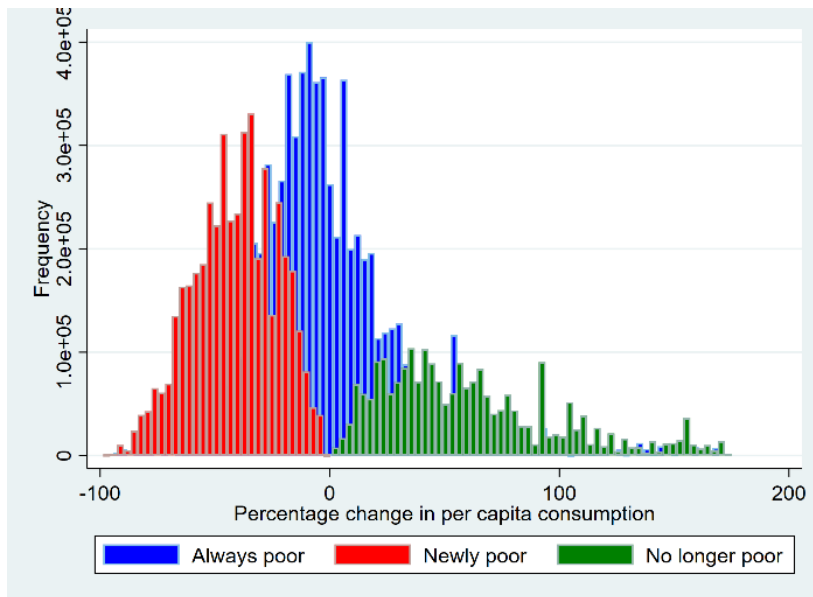


Poor to Non-poor - mobility by region

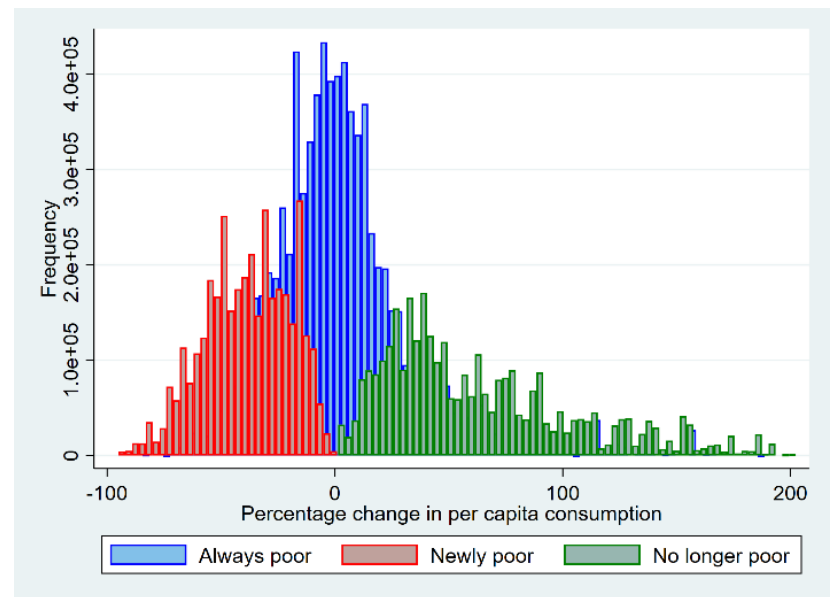


Newly poor households experienced a significant drop in their per capita expenditures (pce), while households that remained poor in both years saw the smallest change; in contrast, households that moved out of poverty experienced a substantial increase.

2018-19



2019-20

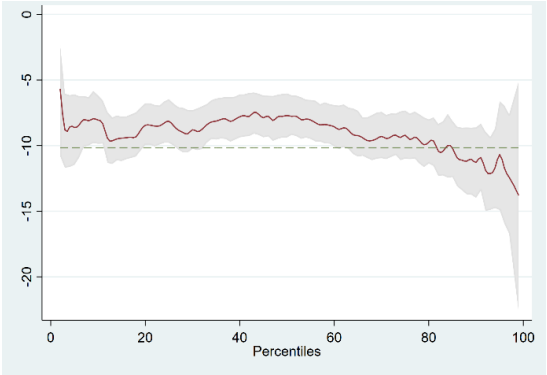
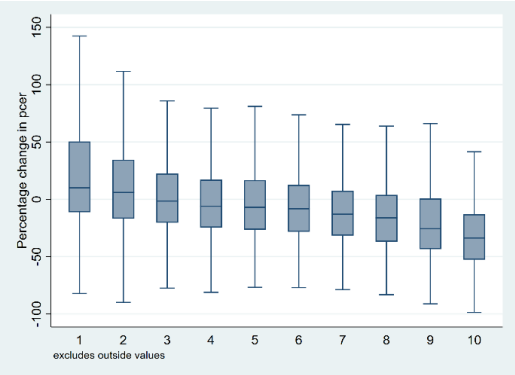


During both years, the richest decile experienced larger drops in expenditures, while the bottom deciles saw an increase in expenditures.

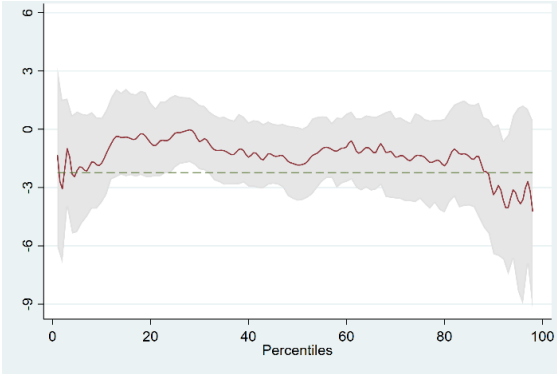
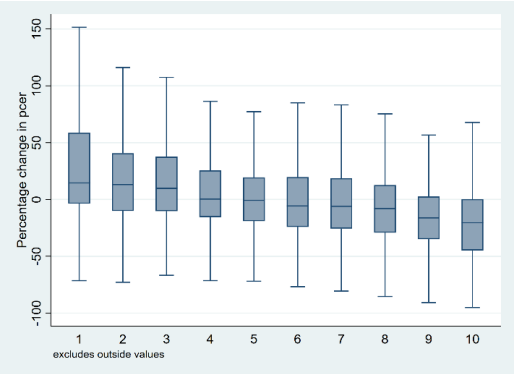
Percentage change in per capita expenditures by pce deciles

Growth Incidence Curves

2018-19



2019-20

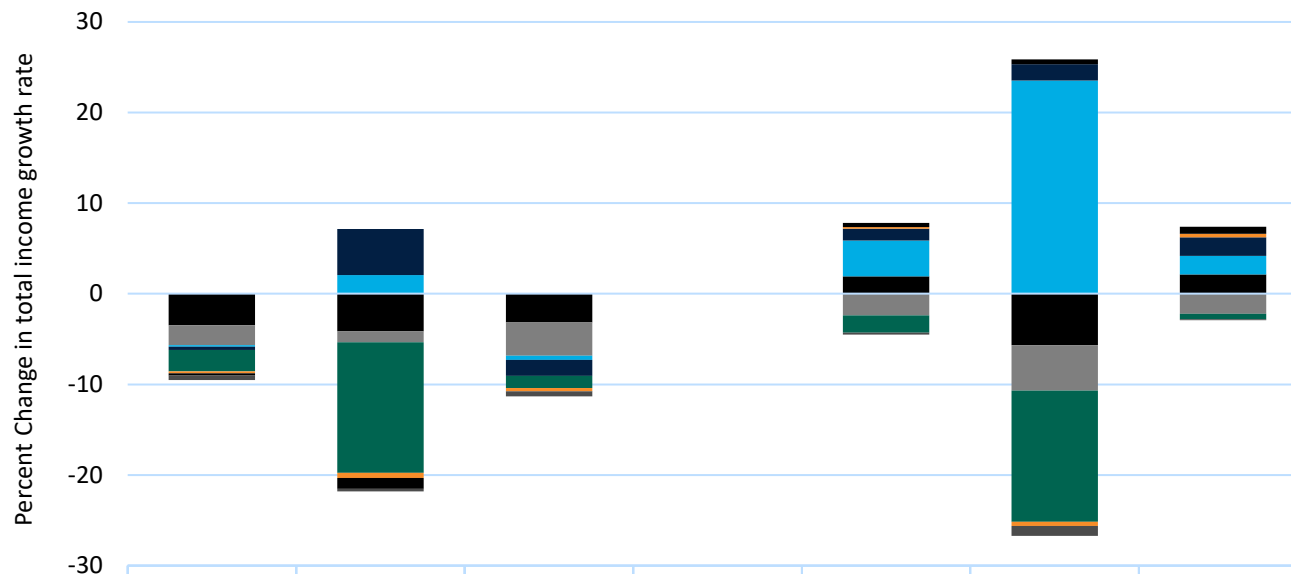


Main Findings

Income Dynamics

In 2018-19, the decline in income was mainly attributed to reduced wages, subsidies, and earnings from self-employment, while 2019-20 saw a partial recovery in income levels.

Decomposition of Income Sources across panel years 2018-19 and 2019-2020



	Mean	Bottom 20	Top 80		Mean	Bottom 20	Top 80
	2018/19				2019/20		
■ Remittances	-0.51	-0.295	-0.524		-0.204	-1.093	-0.11
■ Assets	-0.226	-1.195	-0.025		0.456	0.529	0.753
■ Self produced	-0.237	-0.564	-0.344		0.152	-0.43	0.385
■ Subsidy (Cash Transfer)	-2.338	-14.416	-1.364		-1.934	-14.474	-0.615
■ Retirement (Pension)	-0.369	5.084	-1.755		1.34	1.788	2.052
■ Top-up	-0.178	2.052	-0.461		3.929	23.544	2.058
■ Self Employed	-2.166	-1.208	-3.649		-2.374	-5.031	-2.204
■ Wage	-3.499	-4.144	-3.183		1.927	-5.672	2.132

The top-up released in later 2019, supplemented with a COVID-19 relief package, stabilized household and businesses during the pandemic.

Percentage of Household Receiving Scholarships/welfare, Retirement Benefits, or Subsidies

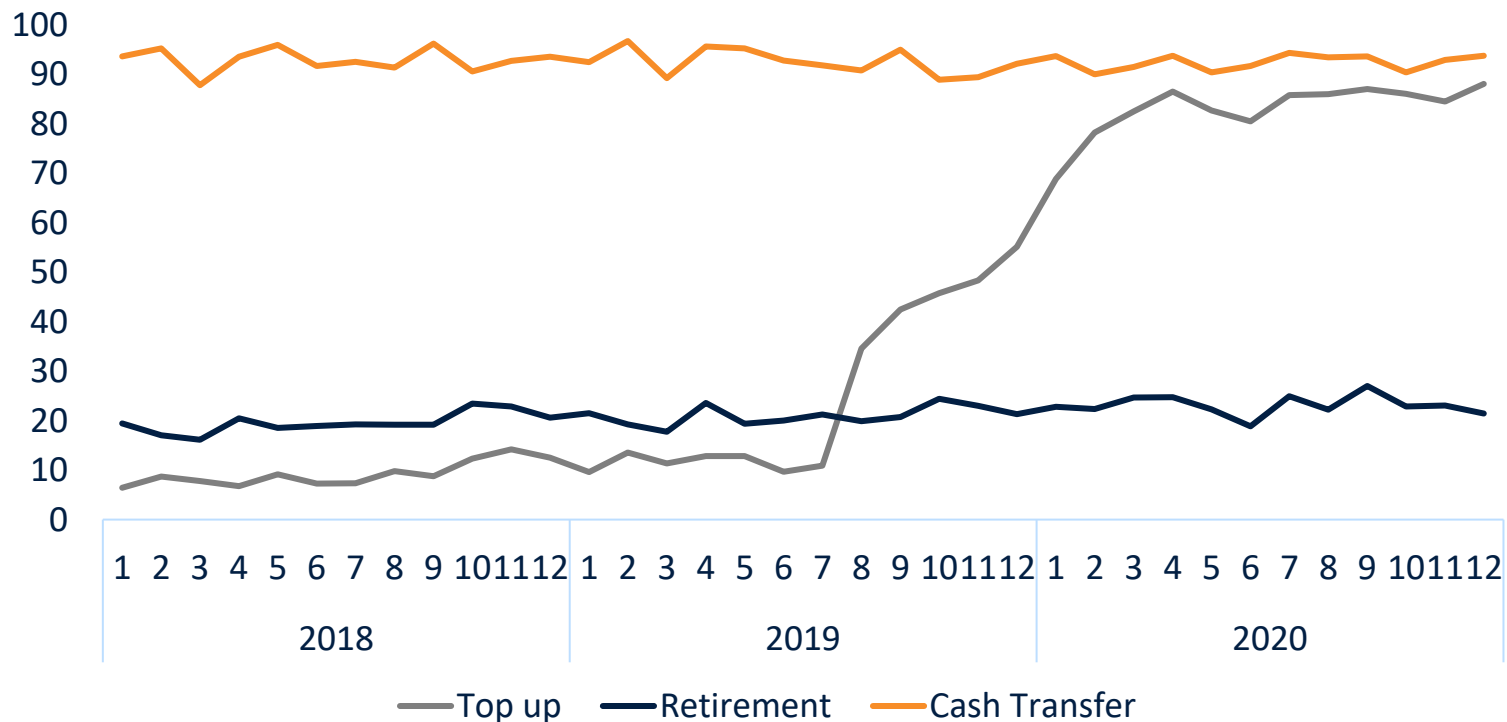


Table 6: Log Changes in Household Income: OLS Analysis, 2018-2019 and 2019-2020

	2018-19	2019-20
Mean change in income	-0.0881	0.024
<i>Bottom 40 (income)</i>	0.222***	0.238***
<i>Top 40 (income)</i>	-0.173***	-0.143***
<i>HH size>=5</i>	-0.016	0.032
<i>Gained Job</i>	1.012***	0.579**
<i>Lost job</i>	-0.715***	-0.630***
<i>HH Head Sector of Employment</i>		
Agriculture; forestry and fishing	-0.060*	-0.026
Manufacturing	-0.006	0.001
Construction	-0.104***	-0.054*
Wholesale and retail trade	0.021	-0.022
<i>HH Head Education Attainment</i>		
No Education	-0.128***	-0.069*
Primary	-0.030	-0.055**
Upper Secondary	-0.010	0.006
<i>HH Head Age</i>		
20-29	-0.106***	-0.170***
30-39	-0.116***	-0.079***
40-49	-0.071**	-0.027
<i>Female Head</i>	0.099	-0.003
<i>Owns home</i>	0.001	-0.028
<i>HH Head Martial Status</i>		
Married	0.047	0.041
Widowed	0.090	0.047
Constant	0.064	0.111
Observations	8039	8611

*Significant at the 10% percent level. **Significant at the 5% percent level. ***Significant at the 1% percent level.

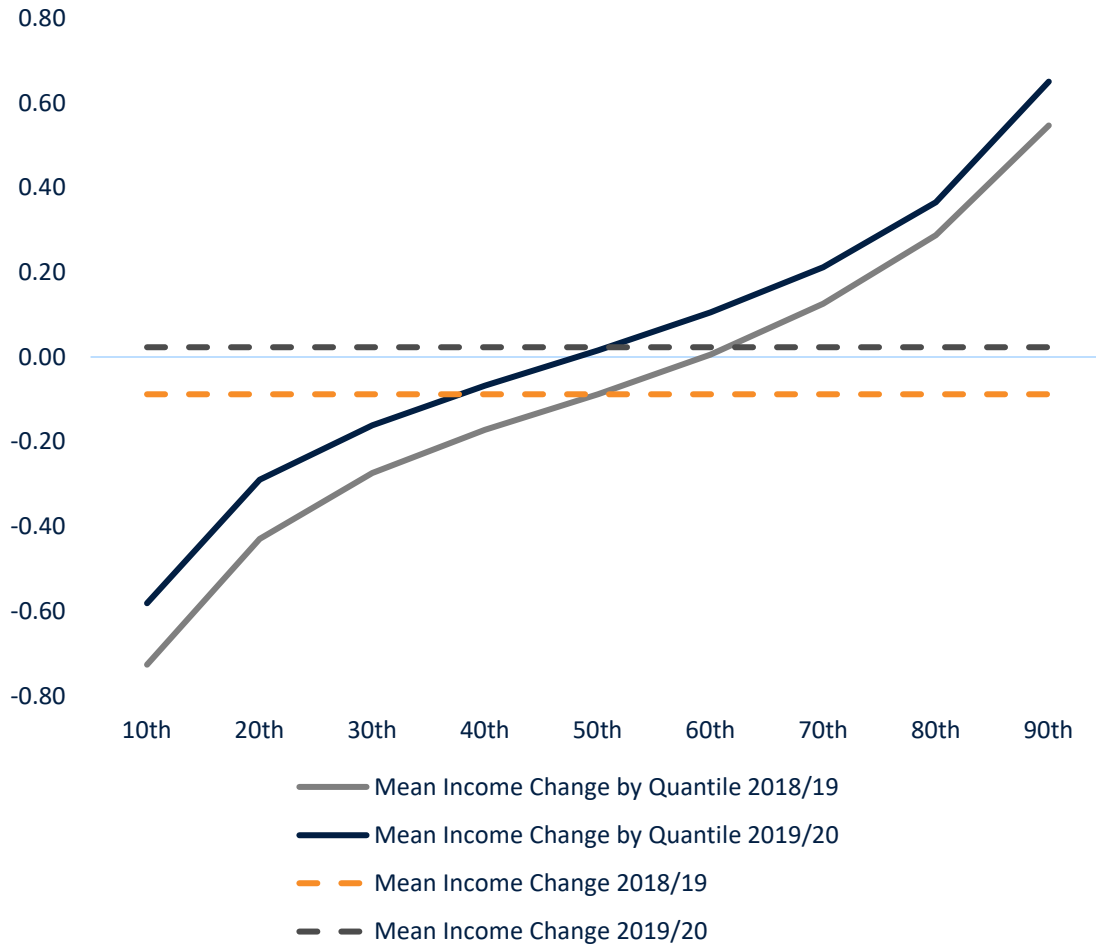
Note: The dependent variable is the change in log of total income of the household between two panels: (2018-2019) and (2019-2020) regressed on characteristics of Iranian households and their heads characteristics.

Reference categories: Change in employment = Always unemployed, always employed, always retired, and retired; Sector = Services, Extractives, Public sector, Health and Education, and other sectors. Education = Lower Secondary, and Tertiary; Martial status = Divorced, Never Married; Head gender=Male-headed, Age groups= 18-20, and 50-99.

Source: Authors Calculations based on HEIS data 2018-2020

The OLS regression analysis examined the average impact of employment shifts and other household characteristics,

Mean Change in Income by Quantile: 2018-2019 and 2019-2020



While quantile regression is employed to examine how different points in the income distribution are affected.

Table 7: Log Changes in Household Income: Quantile Analysis, 2018-2019 and 2019-2020

	2018-19			2019-20		
	20th	50th	80th	20th	50th	80 th
Mean change in income	-0.429	-0.0878	0.288	-0.290	0.016	0.365
<i>Bottom 40 (income)</i>	0.140***	0.122***	0.263***	0.119***	0.173***	0.310***
<i>Top 40 (income)</i>	-0.198***	-0.164***	-0.173***	-0.133***	-0.125***	-0.131***
<i>HH size >=5</i>	-0.006	-0.014	-0.005	0.015	0.017	0.041
<i>Gained Job</i>	0.154	1.653	1.301***	0.116	0.302	1.088
<i>Lost job</i>	-1.275***	-0.390***	-0.378***	-0.927***	-0.429***	-0.285***
HH Head Sector of Employment						
<i>Agriculture; forestry and fishing</i>	-0.179***	-0.030	0.025	-0.076***	-0.041*	0.025
<i>Manufacturing</i>	-0.032	0.001	0.008	0.028	0.012	0.018
<i>Construction</i>	-0.133***	-0.072***	-0.066**	-0.052	-0.015	0.014
<i>Wholesale and retail trade</i>	-0.070	0.028	0.061*	-0.019	-0.040**	0.003
HH Head Education Attainment						
<i>No Education</i>	-0.125***	-0.097***	-0.121*	-0.075	-0.047	-0.033
<i>Primary</i>	-0.042*	-0.019	0.015	-0.064**	-0.038**	-0.039
<i>Upper Secondary</i>	0.011	-0.002	0.032	0.002	-0.020	0.015
HH Head Age						
<i>20-29</i>	-0.054	-0.040	-0.102*	-0.100**	-0.106***	-0.164***
<i>30-39</i>	-0.018	-0.050*	-0.153***	0.018	-0.048**	-0.097***
<i>40-49</i>	-0.005	-0.023	-0.076**	0.027	-0.012	-0.064**
<i>Female Head</i>	0.081	-0.028	-0.020	-0.045	0.070**	-0.129**
<i>Owns home</i>	-0.003	-0.015	-0.006	-0.012	-0.023*	0.031
HH Head Marital Status						
<i>Married</i>	0.061	0.082	-0.035	0.159***	0.073	-0.160**
<i>Widowed</i>	0.126	0.036	0.251*	0.205	0.033	-0.201***
<i>Constant</i>	-0.234***	-0.013	0.428***	-0.316***	0.063	0.530***
Observations	8039	8039	8039	8611	8611	8611

*Significant at the 10% percent level. **Significant at the 5% percent level. ***Significant at the 1% percent level.

Note: The dependent variable is the change in log of total income of the household between two panels: (2018-2019) and (2019-2020) regressed on characteristics of Iranian households and their heads characteristics.

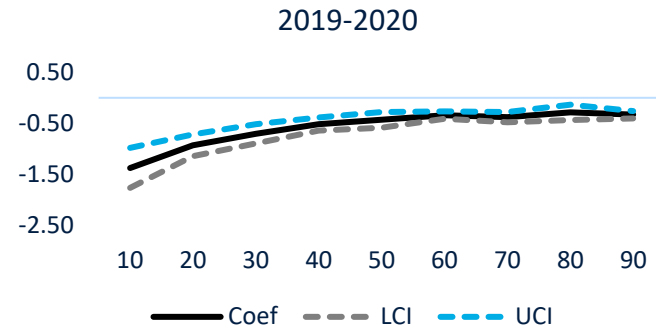
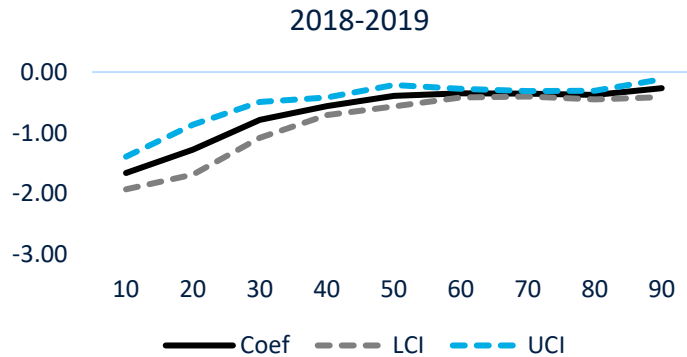
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Head gender = Male-headed, Age groups = 18-20, and 50-99.

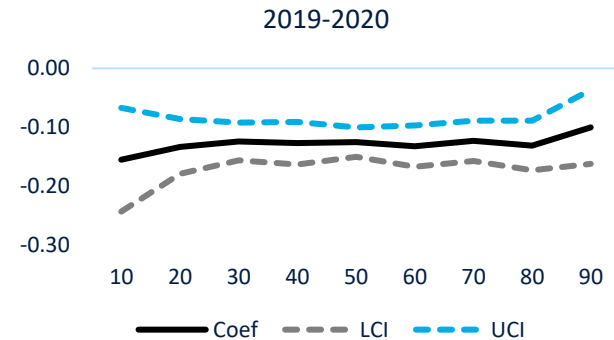
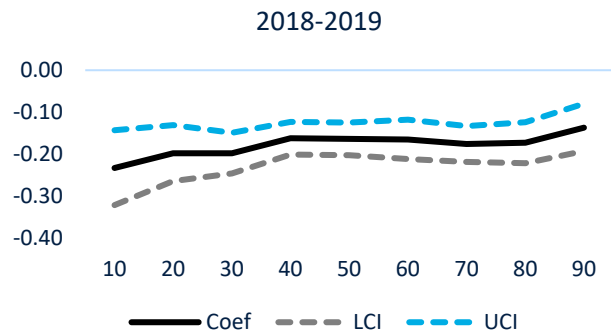
Source: Authors Calculations based on HEIS data 2018-2020

Negative Outliers

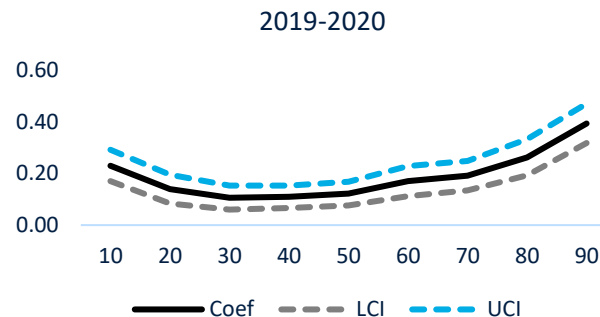
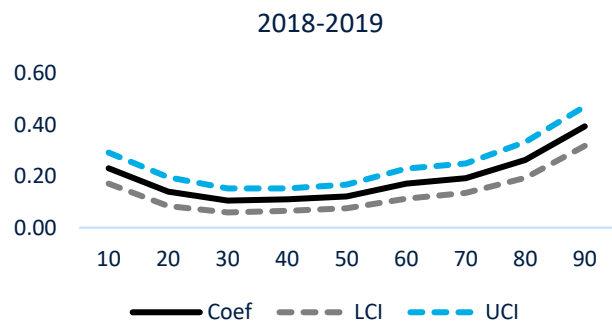
Job Loss resulted in negative income changes across all quantiles, with the lower 20th quantile experiencing the most substantial losses, particularly in the 2018-19 period



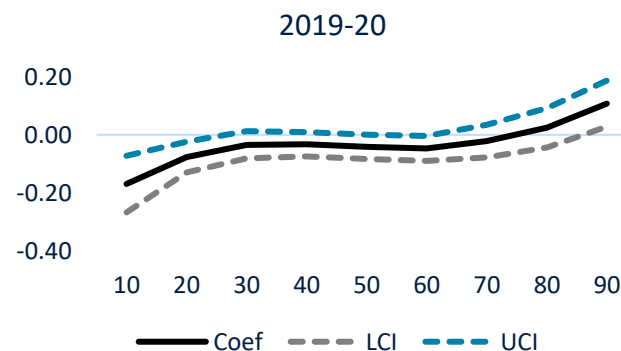
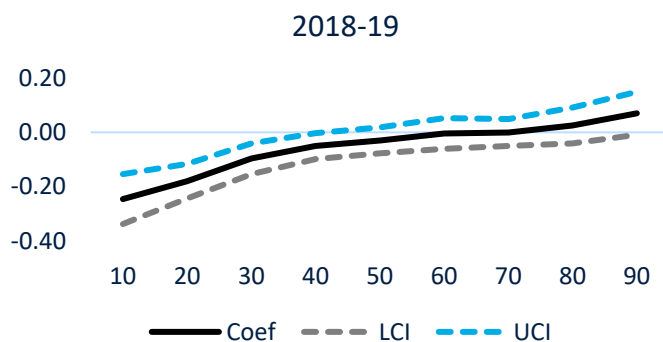
Top 40% Income Households experienced consistent income declines across all quantiles, with the most significant decreases occurring in the highest quantiles during both periods



Positive outlier: Bottom 40% Income Households saw positive income changes, acting as positive outliers in the 20th and 50th quantiles, despite the overall negative average change within these quantiles.



Agriculture: Individuals in lower and middle quantiles consistently faced income decreases, while those in the upper quantile saw slight, non-significant income increases



Conclusion

Conclusion and Policy Implication

- **Strengthening social safety nets**, especially targeted cash transfers and pension benefits, can help cushion vulnerable households during economic shocks.
- **Focus on Employment:** Strategies to improve job security and create employment opportunities, particularly in volatile sectors like agriculture, are crucial for reducing poverty mobility.
- **Regional Targeting:** Tailored interventions are needed to address the specific needs of different regions and demographics, ensuring equitable distribution of resources and support.
- **Resilience Building:** Enhancing economic resilience through diversified income sources and sustainable agricultural practices can mitigate the impact of future economic shocks.