Timely indicators for inequality and poverty using the Italian Labour Force Survey

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The views expressed in the article are those of the author only and do not involve the responsibility of the Bank of Italy.

The paper in a nutshell

- **Aim:** Providing up-to-date indicators of income inequality and poverty
- **Motivation:** Standard indicators with about two years of delay
- **How:** Use of the Italian Labour Force Survey to focus on labour income
- **Results:** ILFS-based indicators are consistent with past trends of standard indicators
- **Take-home message:** ILFS-based indicators do not substitute standard ones, they provide additional information

Motivation

- Inequality is a LR phenomenon
- But need for timely information to monitor the effectiveness of redistributive policies and the distributional impact of macro conditions
- Statistics on the income distribution provided with a significant delay ($\approx$ 2 years), not only in Italy!

Nowcasting of inequality and poverty: previous works

- Priority for the EC. Since 2016 flash estimates of:
  1. At-risk-of-poverty rate (AROP)
  2. Income quintile share ratio
- Indicators provided by using EUROMOD, microsimulation model based on EU-SILC data (Navicke et al. (2014); Gasior and Rastrigina (2017))
- Other attempts with the use of microsimulation models developed by national institutes of statistics:
  - Fontaine and Fourcot (2015) in France
  - Stoyanova and Tonkin (2016) in the UK

Nowcasting using microsimulation models

1. Past income data uprated by using key information on macroeconomic variables (i.e. average wage growth)
2. Incorporating changes in the tax-benefit system in the microsimulation model
3. Calibration weighting or modelling labour market transitions to account for changes in the labour market participation and the demographic structure of the population

$\rightarrow$ **Indicators with an average delay of about 1 year**

Our approach

- No microsimulation model, different data *not used before for inequality*: Italian Labour Force Survey released with only 5-6 months of delay
- Information on net monthly wages and working hours to retrieve a measure of family labour income
- Pros:
  1. Promptly available data $\rightarrow$ direct effects, also behavioural response
  2. Delay of micro-simulation based indicators is halved
  3. Indicators at regional and quarterly level
  4. Not only Italy - LFS with wage info
- Cons:
  1. Focus only on *labour income* (no transfers and capital income)
  2. Imputation of self-employed income

Our contribution

ILFS-based indicators complement indicators based on standard household income surveys:

1. Provide up-to-date information (up to the 2nd quarter 2019)
2. Indicate how much inequality and poverty are arising because of labour market dynamics

The analysis of inequality and poverty in Italy

- Three data sources:
  1. SHIW (Bank of Italy) $\rightarrow$ longest record of household income data, since 1977. Latest release: 2016 in March 2018 — **1-year delay, biannual survey**
  2. EU-SILC (Istat) $\rightarrow$ harmonised survey for cross-country comparisons, since 2006. Income data refer to the previous year relatively to the survey. Release for 2016 in December 2018 — **2-year delay** ▸ trend
  3. HBS (Istat) $\rightarrow$ data on expenditures, no cross-country comparisons. Latest available year: 2018 in June 2019 — **6-month delay**

- Latest developments:
  - Inequality did not increase much during the GR but all population poorer (Brandolini, 2014)
  - Incidence of absolute poverty among ind.s more than doubled; large increase also when head of the hh employed

The ILFS data

- ILFS: quarterly rolling panel dataset since 2004 (Istat)
- Info on labour market status, family structure and socio-demographics. 250,000 hh.s, 600,000 ind.s per year
- Key variable: monthly wage, recorded from 2009 onwards
  1. self-reported net regular salary earned one month before
  2. no 13th or 14th month's salary or no extra-payments
  3. salary reported in bin of 10 euros, censored from below (at 250) and above (at 3000)

     The shares of employees with monthly wages below 250 and above 3000 are 1.2 and 1.8 per cent by year (SHIW data)
- Weekly hours usually worked in the last 4 weeks
- Imputation of self-employed incomes

$\rightarrow$ **Measure of family labour income**

Can we use the ILFS to predict inequality?

1. Labour income vs. Disposable income

2. Differences in the accounting period: month in the ILFS, year in the SHIW. Underestimation of inequality?

   Boheim and Jenkins (2006):

   - ILFS: regular pay and not simply the latest pay
   - Changes in employment or in demographic composition of the household small or random over the month/year.

3. Imputation of self-employed income: minor limitation, involves around 23 per cent of total employment

   - Even in standard household income surveys self-employed incomes hardly measurable in a reliable way (Brandolini, 2000)
   - Evidence on the goodness of imputation on SHIW

Imputation of self-employed income: 4 steps

1. Imputation follows the NA methodology, by estimating a *Mincer* equation of employees' hourly wage on a set of standard regressors

$$\log(w_{it}) = X'_{it}\beta_t + \epsilon_{it} \qquad for\ t = 2009/2018 \tag{1}$$

X_{it}: demographic controls (sex, age, level of education, civil status and citizenship); working status (working time schedule, duration of the contract, sector), family controls (number of children, province of residence)

Predicted values for self-employed:

$$\widehat{\log(w_{it})} = X'_{it}\widehat{\beta}_t \qquad for\ t = 2009/2018 \tag{2}$$

Distribution of the imputed variable less dispersed than the observed one. Regression model explains only a fraction of it (about 29.2-32.0%)

Imputation of self-employed income

2. Add to predicted values an error term with zero mean and s.d. of residuals ($\widehat{RMSE}_t^{ILFS}$)

$$\widehat{\log}(w_{it})^{ADJ} = \widehat{\log(w_{it})} + \eta_{it},\ \eta_{it} \sim N\left(0, \widehat{RMSE}_t^{ILFS}\right) \text{ for } t = 2009/2018 \tag{3}$$

Imputation of self-employed income

Even controlling for observable characteristics, self-employed income might statistically differ from that of employees

3. Estimate the same model for all workers with SHIW data

$\rightarrow$ In 2008-2016 hourly wage premium for employees, of about 9 per cent (on average) and increasing over time

4. Correction of predicted "wages" in ILFS to consider employee premium (g_t). In a given year:

$$\widehat{w}_{it}^{g} = \frac{\exp\left(\widehat{\log\left(w_{it}\right)}^{ADJ}\right)}{1+g_t} \qquad for\ t = 2009/2018 \qquad (4)$$

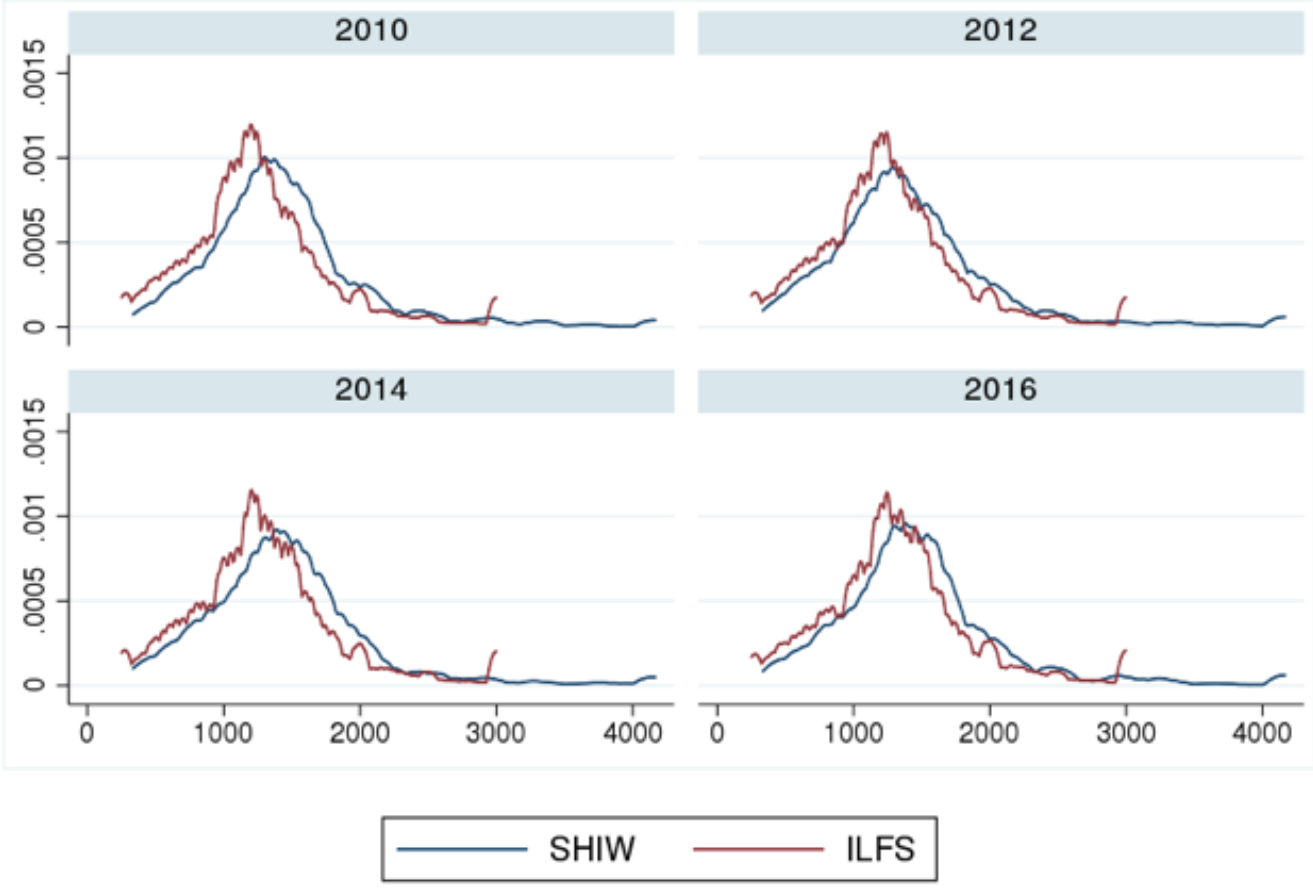
5. Monthly income=hourly wage $\left(\widehat{w}_{it}^{g}\right)$ * hours worked * 4.3

Recovering family labour income

- Families with no retirees and Reference Person (RP) 15-64 y.o.
  - Selection to avoid "false" zero-income and upwards bias in the number of individuals with no income
  - Selected families: 60 per cent of Italian families, around 70 per cent of the population and almost all minors.
- Individual labour income aggregated at family level
- Family income normalized by the OECD-modified equivalence scale (taking into account family size and age composition)

Validation - wages

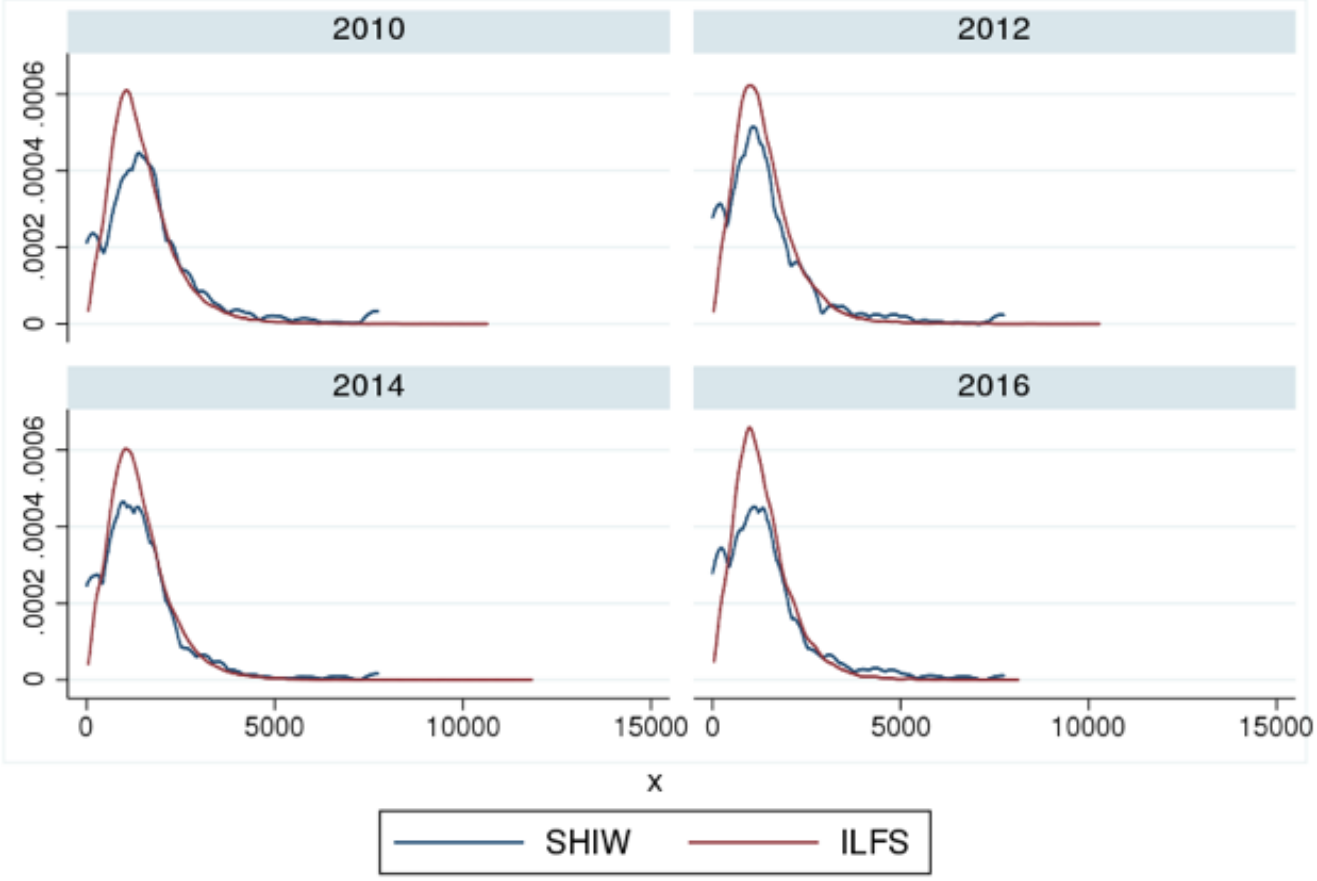
Monthly wage distribution in the ILFS and in the SHIW by year



Source: ILFS and SHIW, sample weights are used. The ILFS wage is the net regular salary earned one month before (no 13th or 14th month's salary), excluding those extra-payments that are not commonly included in the monthly pay. The salary is reported in bin of 10 euros for amounts between 250 and 3000 euros; for lower and higher levels, there are two categories, respectively: 250- euros and 3000+ euros. The SHIW monthly wage is obtained as the ratio between annual earnings and months worked in the reference year (for employees only). Extremes values for the SHIW variable are winsorized at level 1 and 99 per cent levels for each year.

Validation - self-employed income

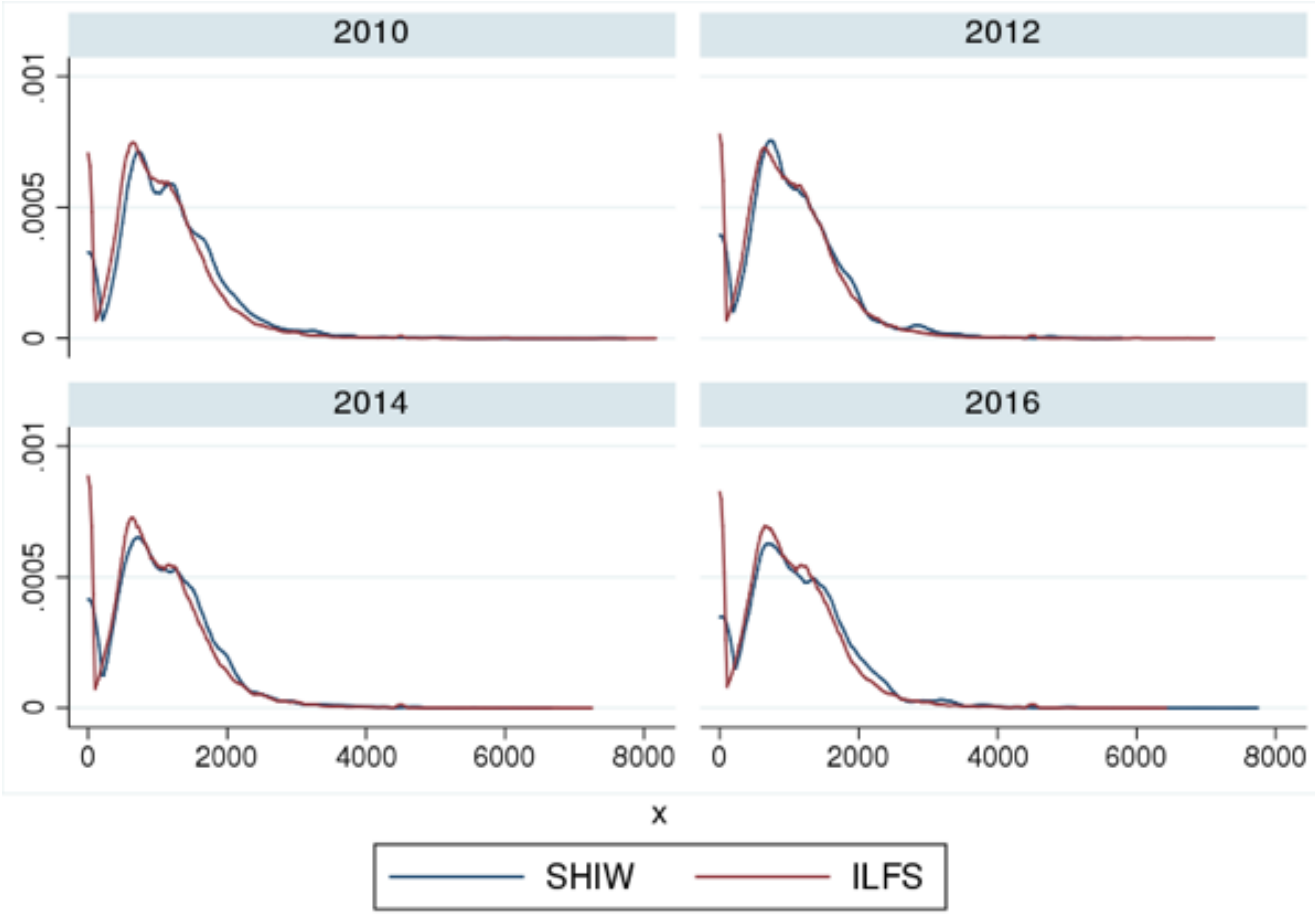
Monthly self-employed income in the ILFS (obtained by imputation) and in the SHIW



Source: ILFS and SHIW, sample weights are used. The ILFS self-employed income has been imputed as described in Section 3, by estimating a Mincerian equation of hourly wage on observable individual and family characteristics. The SHIW self-employed income is obtained as the ratio between annual income and months worked in the reference year (for self-employed only). Extremes values are winsorized at level 1 and 99 per cent levels for each year.

Validation - equivalised labour income

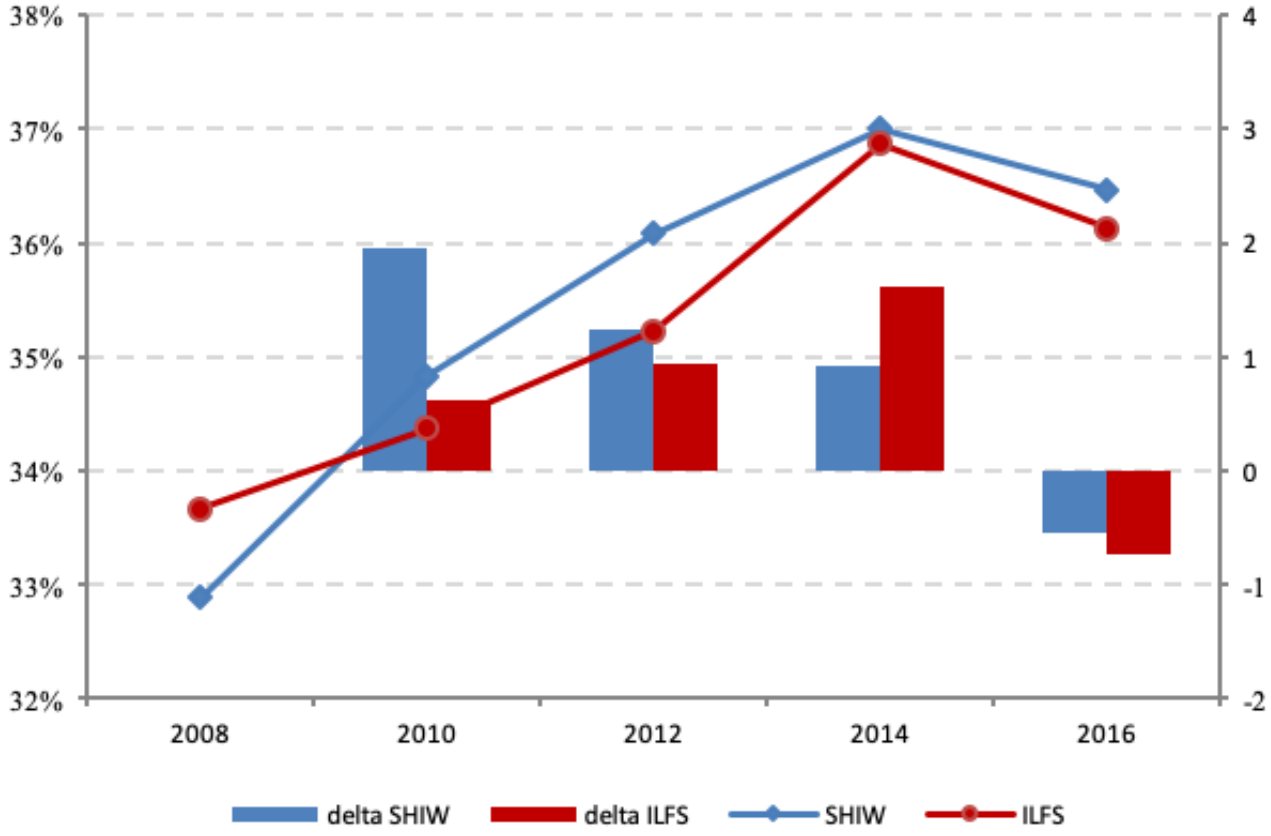
Monthly equivalised labour income in the ILFS and in the SHIW



Source: ILFS and SHIW, sample weights are used. The ILFS monthly equivalised labour income is obtained by aggregating labour incomes at household level, divided by the OECD-modified equivalence scale to take into account economies of scale within the household. The SHIW monthly equivalised labour income is analogously defined. Extremes values are winsorized at level 1 and 99 per cent levels for each year.

Validation - inequality

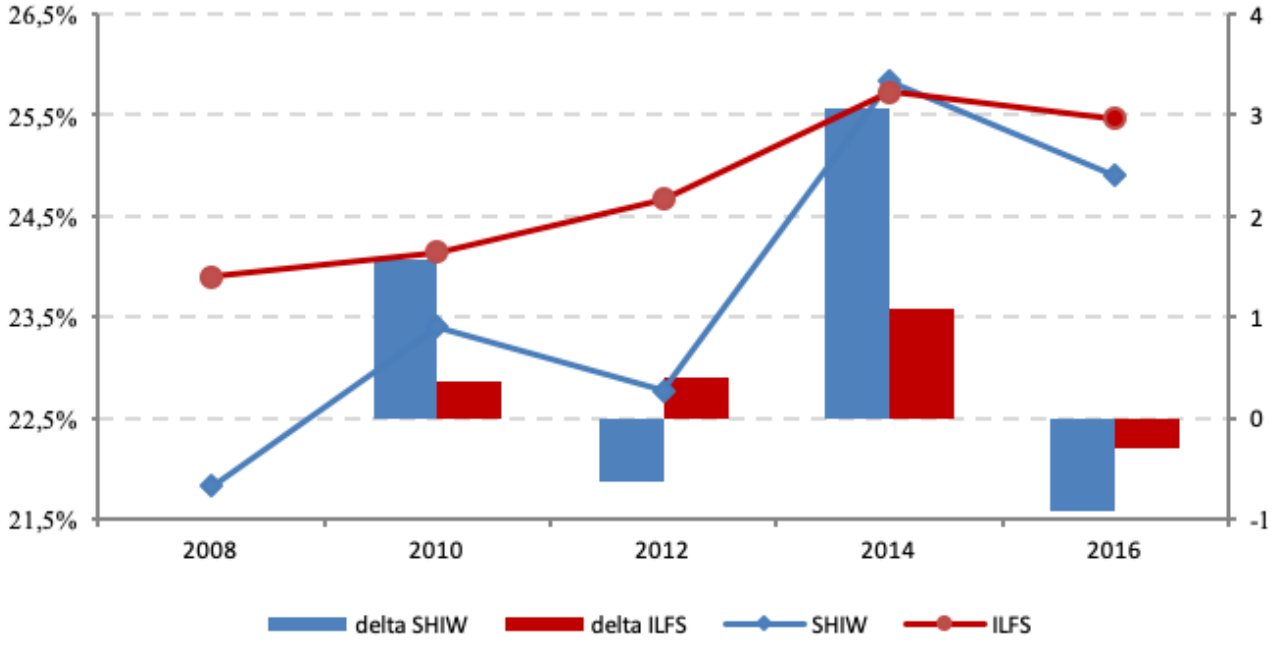
Comparison of Gini index computed on monthly labour income in SHIW and in LFS



Source: ILFS and SHIW, sample weights are used. Gini index computed on equivalised labour incomes. We consider only those years in which both ILFS and SHIW are available. "delta SHIW"(right axis) is the difference between the Gini index computed in a given year (i.e. 2010) and that in the two-year before (i.e. 2008); "delta ILFS" is analogously defined. "delta ILFS" in 2010 is the difference between the Gini index in 2010 and that in 2009 since the value for 2008 is not available. Gini index computed in the ILFS in 2008 refers to 2009 incomes. We consider households with no retirees and in which the reference person is 15-64 years.

Validation - relative poverty

Comparison of the labour income poverty rate (LIPR) in the ILFS and in the SHIW

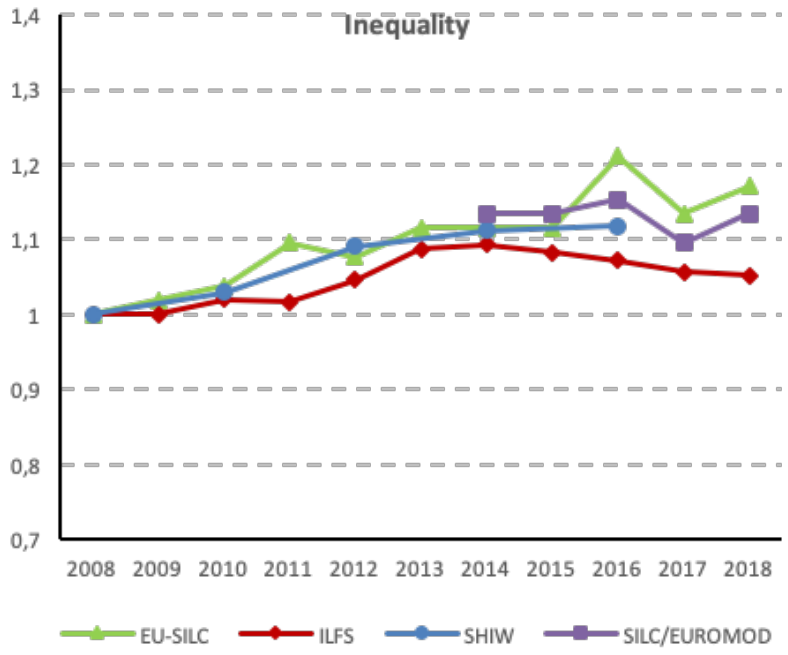


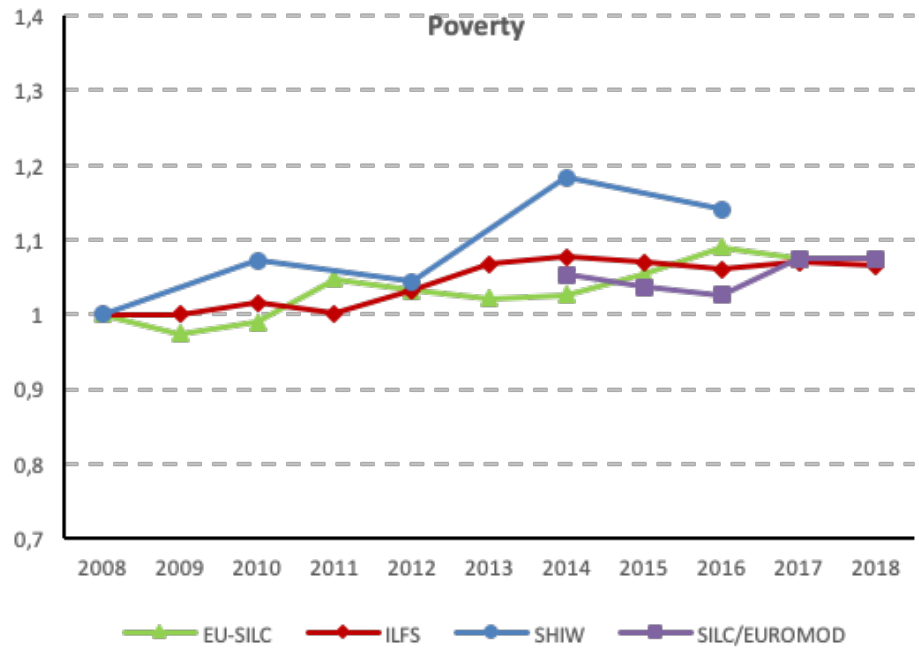
Source: ILFS and SHIW, sample weights are used. Labour Income Poverty Rate (LIPR): share of individuals with equivalised monthly labour income lower than the 60 per cent of the national median value. We consider only those years in which both ILFA and SHIW are available. "delta SHIW" (right axis) is the difference between the LIPR computed in a given year (i.e. 2010) and that in the two-year before (i.e. 2008); "delta ILFS" is analogously defined. "delta ILFS" in 2010 is the difference between the corresponding LIPR in 2010 and that in 2009 since the value for 2008 is not available. LIPR computed in the ILFS in 2008 refers to 2009 incomes. We consider households with no retirees and in which the reference person is 15-64 years.

Robustness checks

- Monthly wage in ILFS is censored from below (at 250 euros) and from above (at 3000 euros) $\rightarrow$ underestimation of inequality and poverty
- Tests:
  1. Different extreme values of censored values in ILFS. Uniform distribution for values lower than 250, Pareto distribution for values higher than 3000 ▸ check1
  2. Monthly income in SHIW is censored analogously to wages in ILFS ▸ check2

Scenario simulation





Source: ILFS and SHIW, sample weights are used. Eurostat provides indicators based on EU-SILC and SILC/EUROMOD. As for ILFS and SHIW indicators, we consider households with no retirees and in which the reference person is 15-64 years. Information on wages in the ILFS are available only from 2009; we consider in 2008 the value observed in 2009. The SHIW survey is run every two years and it is available with one year of delay with respect to the survey period. EU-SILC and SILC/EUROMOD refer to income data of one year before the survey year.

Uses of the database: drivers of labour income inequality

- Role of labour market dynamics in determining labour income inequality. Decomposition of Gini on labour income:

$$G = \underbrace{(1-e)}_{\text{non-empl. rate}} + \underbrace{e^* G_e}_{\text{ineq. of lab. income among empl.}} = 1-(1-G_e)e$$

- Same decomposition of Gini on equivalised lab. income. Changes over time:

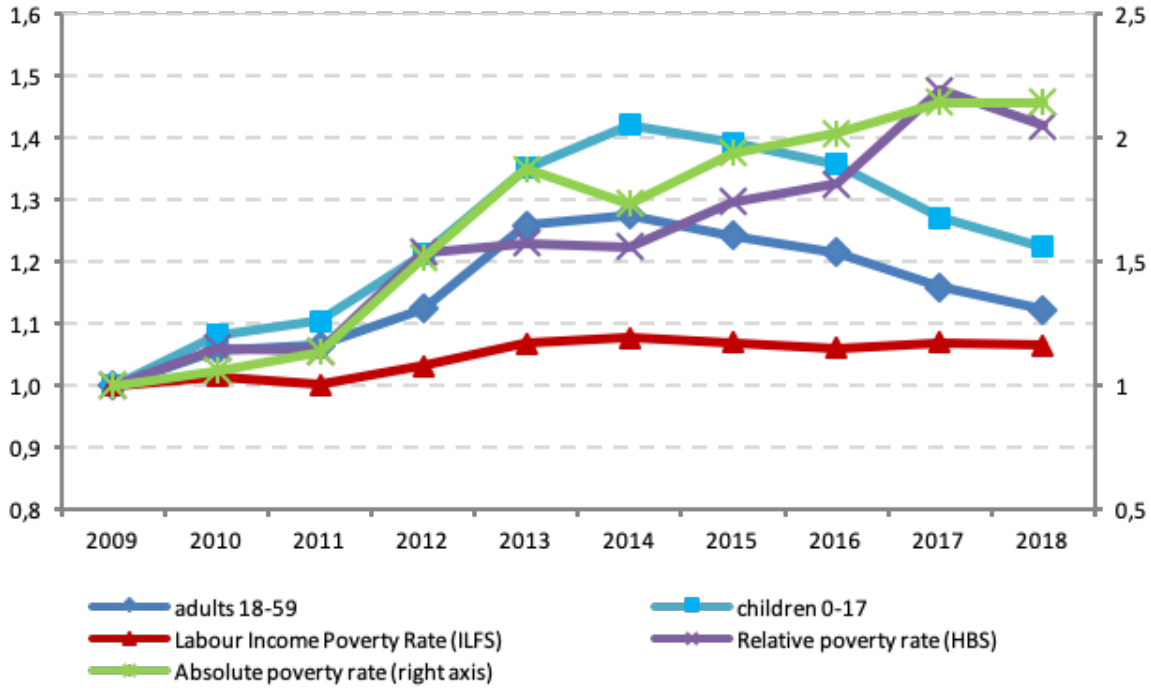
$$\triangle G \approx \underbrace{e\triangle G_e}_{\text{lab. income eff}} + \underbrace{(G_e-1)\triangle_e}_{\text{family empl. eff}}$$

- Decomposition

Uses of the database: Jobless households

- Eurostat: two indicators based on the notion of jobless household (% of individuals (18-59 y.o.) and children (0-17 y.o.) living in jobless households)
- Definition: a hh is jobless if *no working age adult* is employed.
- *Working age adult*
  1. 18-59 y.o.
  2. no full-time student with less than 25 y.o. living with parents
- Since labour income is the primary source of income for the working age population $\rightarrow$ proxy for poverty

Comparisons of different poverty measures



Source: ILFS and HBS, sample weights are used. Adults 18-59 and children 0-17 are the share of people living in jobless households, distinguishing by age. Labour Income Poverty Rate (ILFS) is the share of individuals with equivalised monthly labour income lower than the 60 per cent of the national median value computed in the ILFS. Incidence of relative poverty (HBS) is the share of individuals whose consumption expenditure is lower than the relative poverty line, measured in the HBS. Incidence of absolute poverty rate (HBS) is the share of individuals whose consumption expenditure is lower than the absolute poverty line, measured in the HBS.

Uses of the database

1. Timely indicators, also at quarterly level
2. Regional indicators
3. Distribution of jobless households over the family income distribution

Conclusion

- Timely indicators for inequality and poverty necessary for policy makers to evaluate how current macroeconomic conditions affect households' standards of living and the distributional impact
- Indicators on standard household income surveys delayed of about 2 years
- Methodology based on promptly data of ILFS - 6 months delay
- ILFS-based indicators track well standard indicators $\rightarrow$ good fit
- Focus on labour income does not impair the possibility to infer overall income inequality developments

Thank you

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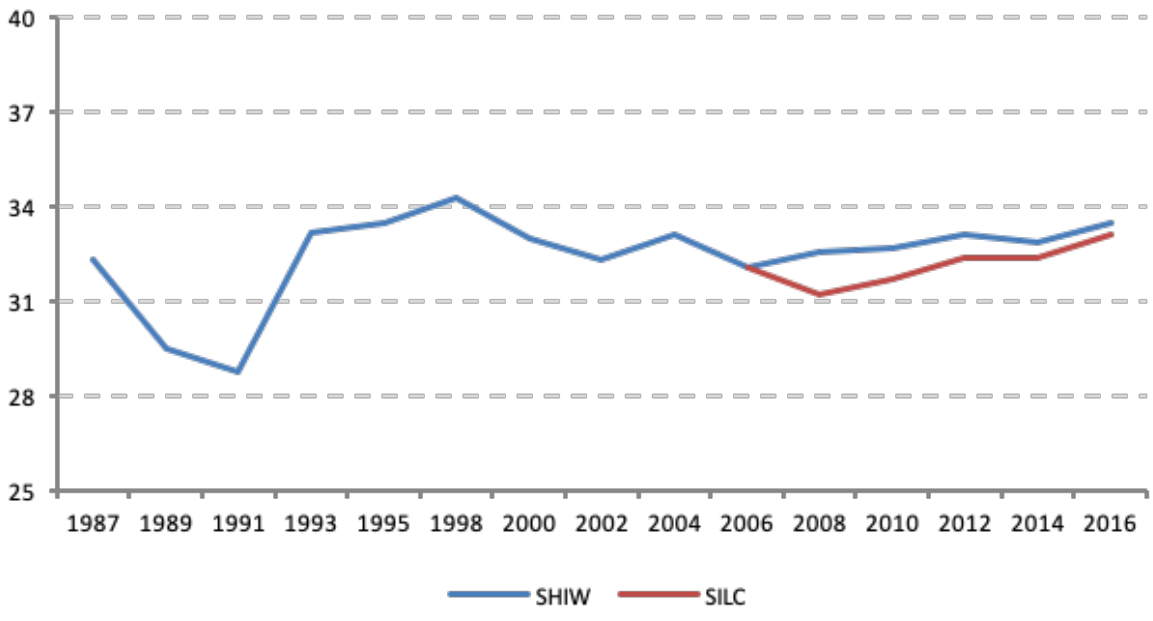
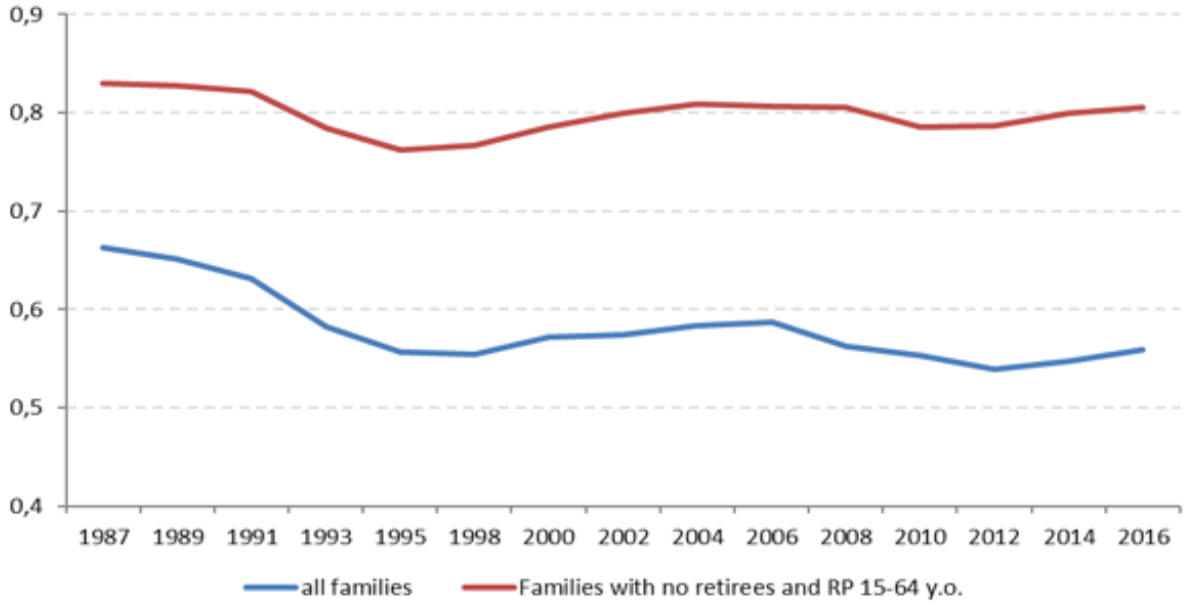
Gini index on disposable equivalent income over time



Source: SHIW, Historical database, and SILC.

back

Equivalised labour income as share of equivalised disposable income



Source: SHIW, sample weights are used. Equivalised disposable income is equal to family disposable income divided by the OECD-modified equivalence scale; equivalised labour income is analogously defined with respect to family labour income. We consider both all families, without any restriction, and those families in which there are not retirees and whose Reference Person is between 15 and 64 years old.

Gini index on equivalised disposable income and on equivalised labour income

Reference year (normalized to 1)=2008

Source: SHIW, sample weights are used. Equivalised disposable income is equal to family disposable income divided by the OECD-modified equivalence scale; equivalised labour income is analogously defined with respect to family labour income. Indices are normalized with respect to the 2008 value. In the left panel we consider all families, without any sample restrictions. In the right panel we focus on those families in which there are not retirees and whose Reference Person is between 15 and 64 years old.

Decomposition of the Gini index on equivalised income by income source, 2016

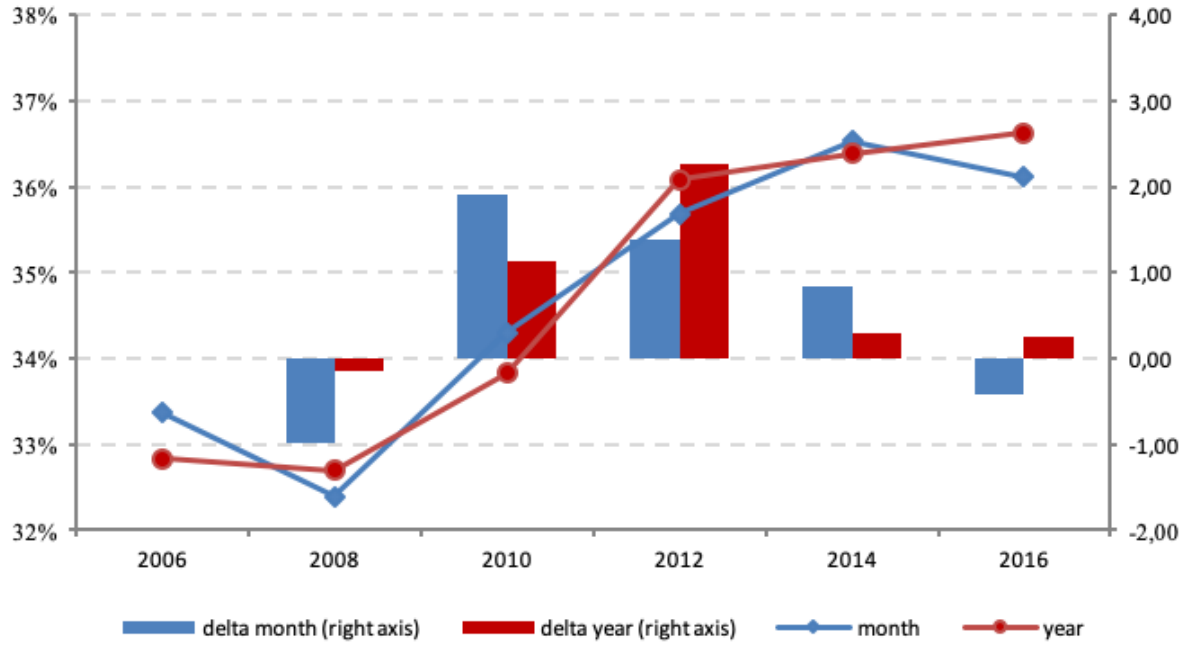
Labour income inequality contributes to disposable income inequality by 57 per cent

	Share	Gini Coefficient	Gini Correlation	Contribution	Contribution (%)
Variable	S_k	G_k	R_k	$S_k*G_k*R_k$	$S_k*G_k*R_k/G$
labour	0.557	0.520	0.648	0.188	0.569
transfers	0.251	0.719	0.406	0.073	0.219
capital	0.192	0.514	0.742	0.073	0.219
TOTAL	1	0.334	1	0.334	1

Source: SHIW, sample weights are used. Share S_k is is the component k's share of total income; G_k is the Gini index for a component k; R_k is the Gini correlation between income component and the total income. Product $S_k * G_k * R_k$ is the absolute contribution of k component to income inequality. For positive values of R_k, the necessary condition for inequality to increase as a result of a growing concentration within component k is G_k is greater than G.

back

Gini index on equivalised monthly and yearly labour income in the SHIW, most recent years



Source: SHIW, sample weights are used. Equivalised labour income is equal to family labour income divided by the OECD-modified equivalence scale. "month" refers to monthly equivalised labour income, obtained as the ratio between yearly labour income and the number of months worked, then aggregated at family level; "year" refers to yearly equivalised labour income; "delta month" is the difference between the Gini index on monthly equivalised labour income computed in a given year (i.e. 2010) and that in the two-year before (i.e. 2008); "delta year" is analogously defined. We consider households with no retirees and in which the reference person is 15-64 years.

back

dependent variable: logarithm of hourly wage	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
female	-0.084***	-0.089***	-0.089***	-0.080***	-0.076***	-0.071***	-0.071***	-0.065***	-0.076***	-0.072***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)
female*married	-0.037***	-0.039***	-0.036***	-0.034***	-0.045***	-0.035***	-0.034***	-0.033***	-0.031***	-0.031***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
female*n children	0.000	0.005**	0.005**	0.004**	0.007***	0.004*	0.008***	0.007***	0.008***	0.010***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
25-34	0.126***	0.125***	0.127***	0.129***	0.125***	0.136***	0.134***	0.128***	0.123***	0.125***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
35-44	0.228***	0.219***	0.220***	0.231***	0.227***	0.244***	0.241***	0.237***	0.230***	0.229***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
45-54	0.281***	0.275***	0.275***	0.284***	0.275***	0.296***	0.287***	0.286***	0.283***	0.272***
	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
55-64	0.336***	0.329***	0.324***	0.331***	0.329***	0.350***	0.339***	0.334***	0.321***	0.312***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
64+	0.333***	0.341***	0.311***	0.336***	0.322***	0.334***	0.291***	0.292***	0.324***	0.323***
	(0.014)	(0.015)	(0.014)	(0.014)	(0.013)	(0.013)	(0.012)	(0.011)	(0.010)	(0.009)
1 child	-0.001	-0.006**	-0.012***	-0.003	-0.001	-0.004	-0.004	-0.006**	-0.008***	-0.010***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
2 children	0.013***	0.006*	0.002	0.009***	0.014***	0.011***	0.010***	0.010***	0.004	0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
3 children	0.021***	0.010**	0.012**	0.018***	0.014***	0.023***	0.003	0.014***	0.014***	-0.006
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
4 or more children	0.025***	0.012	-0.001	0.006	0.018*	0.013	-0.005	0.007	0.010	-0.006
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
married	0.101***	0.106***	0.101***	0.092***	0.100***	0.091***	0.089***	0.084***	0.087***	0.084***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
foreign	-0.151***	-0.159***	-0.152***	-0.145***	-0.145***	-0.150***	-0.162***	-0.150***	-0.150***	-0.145***
	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
lower secondary education	0.081***	0.075***	0.050***	0.055***	0.065***	0.070***	0.061***	0.067***	0.063***	0.067***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
upper secondary education	0.205***	0.198***	0.175***	0.175***	0.181***	0.180***	0.171***	0.180***	0.173***	0.174***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
tertiary education	0.436***	0.423***	0.393***	0.374***	0.388***	0.381***	0.366***	0.378***	0.355***	0.354***
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
full-time job	-0.042***	-0.047***	-0.049***	-0.051***	-0.066***	-0.058***	-0.068***	-0.064***	-0.052***	-0.055***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Constant	1.403***	1.410***	1.445***	1.451***	1.488***	1.495***	1.533***	1.563***	1.582***	1.570***
	(0.010)	(0.010)	(0.010)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Province dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Sectoral dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	
Observations	154344	154778	152635	139991	138656	136560	136566	137933	140348	131848
R-squared	0.307	0.310	0.320	0.296	0.292	0.302	0.301	0.315	0.304	0.303

Notes: ILFS, sample weights are used. Standard errors in parentheses. Coefficients are statistically significant with probability:

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dependent variable: logarithm of hourly wage	2008	2010	2012	2014	2016
female	-0.094***	-0.079***	-0.035*	-0.064***	-0.076***
	(0.018)	(0.019)	(0.019)	(0.018)	(0.021)
age	0.009***	0.008***	0.009***	0.007***	0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
1 child	-0.012	0.024*	0.003	-0.035**	-0.009
	(0.013)	(0.014)	(0.014)	(0.014)	(0.016)
2 children	0.011	0.019	0.031*	0.004	0.019
	(0.015)	(0.016)	(0.017)	(0.016)	(0.019)
3 children	0.036	0.066***	0.059**	0.022	-0.021
	(0.022)	(0.025)	(0.025)	(0.024)	(0.028)
4 or more children	0.073	0.017	0.020	-0.070	0.019
	(0.046)	(0.048)	(0.048)	(0.049)	(0.072)
married	0.139***	0.130***	0.160***	0.170***	0.103***
	(0.014)	(0.015)	(0.016)	(0.015)	(0.018)
female*married	-0.108***	-0.105***	-0.187***	-0.159***	-0.102***
	(0.020)	(0.021)	(0.022)	(0.020)	(0.024)
female*n children	-0.027***	-0.025**	-0.019*	-0.006	-0.005
	(0.010)	(0.010)	(0.011)	(0.010)	(0.012)
foreigner	-0.076***	-0.140***	-0.175***	-0.164***	-0.159***
	(0.017)	(0.017)	(0.016)	(0.015)	(0.019)
lower secondary	-0.106	0.048	0.148*	0.138	0.022
	(0.083)	(0.095)	(0.087)	(0.093)	(0.127)
upper secondary	0.009	0.148	0.291***	0.235***	0.154
	(0.081)	(0.093)	(0.083)	(0.090)	(0.123)
college	0.182**	0.316***	0.471***	0.391***	0.352***
	(0.081)	(0.093)	(0.084)	(0.090)	(0.123)
tertiary	0.348***	0.586***	0.598***	0.538***	0.476***
	(0.093)	(0.100)	(0.092)	(0.098)	(0.131)
public	0.199**	0.284***	-0.107	0.325***	0.271**
	(0.095)	(0.094)	(0.081)	(0.093)	(0.134)
employee	-0.038***	0.019	0.088***	0.106***	0.185***
	(0.014)	(0.015)	(0.015)	(0.014)	(0.017)
Constant	2.275***	1.970***	1.805***	1.845***	1.737***
	(0.095)	(0.108)	(0.097)	(0.104)	(0.138)
Province dummies	YES	YES	YES	YES	YES
Sectoral dummies	YES	YES	YES	YES	YES
Observations	6710	6445	6222	5792	4995
R-squared	0.380	0.325	0.389	0.380	0.345

Notes: SHIW, sample weights are used. Standard errors in parentheses. Coefficients are statistically significant with probability: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

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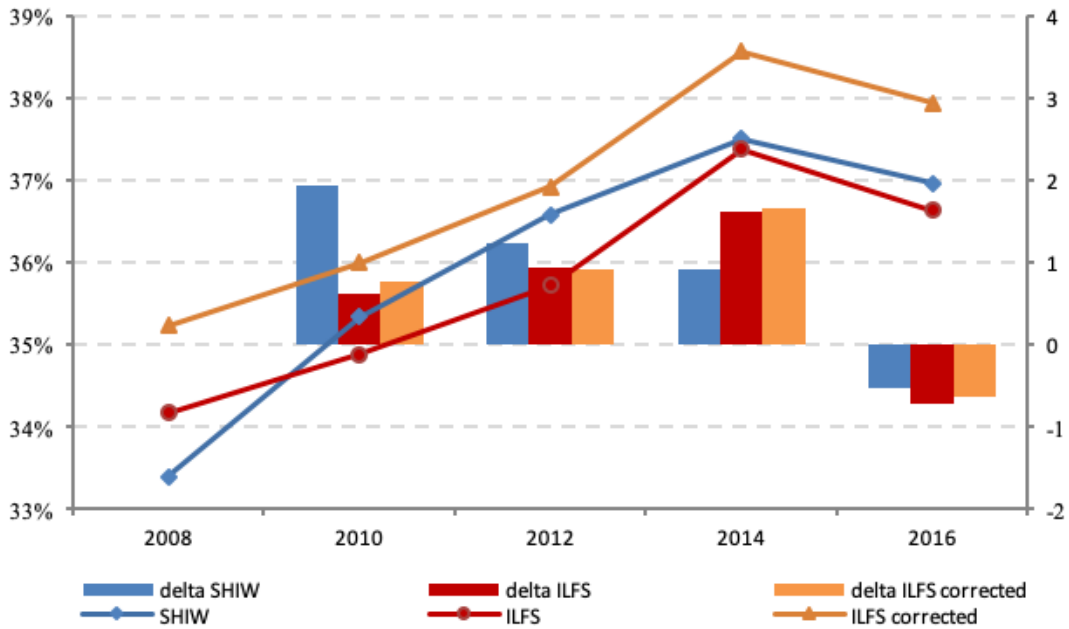
Censoring - 1

Comparison of Gini index computed on monthly equivalised labour income in the ILFS, in the ILFS with correction for censoring and in the SHIW



Source: ILFS and SHIW, sample weights are used. Gini index computed on equivalised labour incomes. Monthly wage in the ILFS is corrected for censoring: we assume that employees' monthly wages censored at 250 euros are distributed according to a uniform distribution [0;250] and assign them the mean value, i.e. 125 rather than 250. For values censored at 3000 euros, we assume that monthly wages are distributed according to a Pareto distribution. "delta SHIW" (right axis) is the difference between the Gini index computed in a given year (i.e. 2010) and that in the two-year before (i.e. 2008); "delta ILFS" and "delta ILFS corrected" are analogously defined. "delta ILFS" and "delta ILFS corrected" in 2010 are the difference between the respective Gini index in 2010 and that in 2009 since the value for 2008 is not available. Gini index computed in the ILFS in 2008 refers to 2009 incomes. We consider households with no retirees and in which the reference person is 15-64 years.

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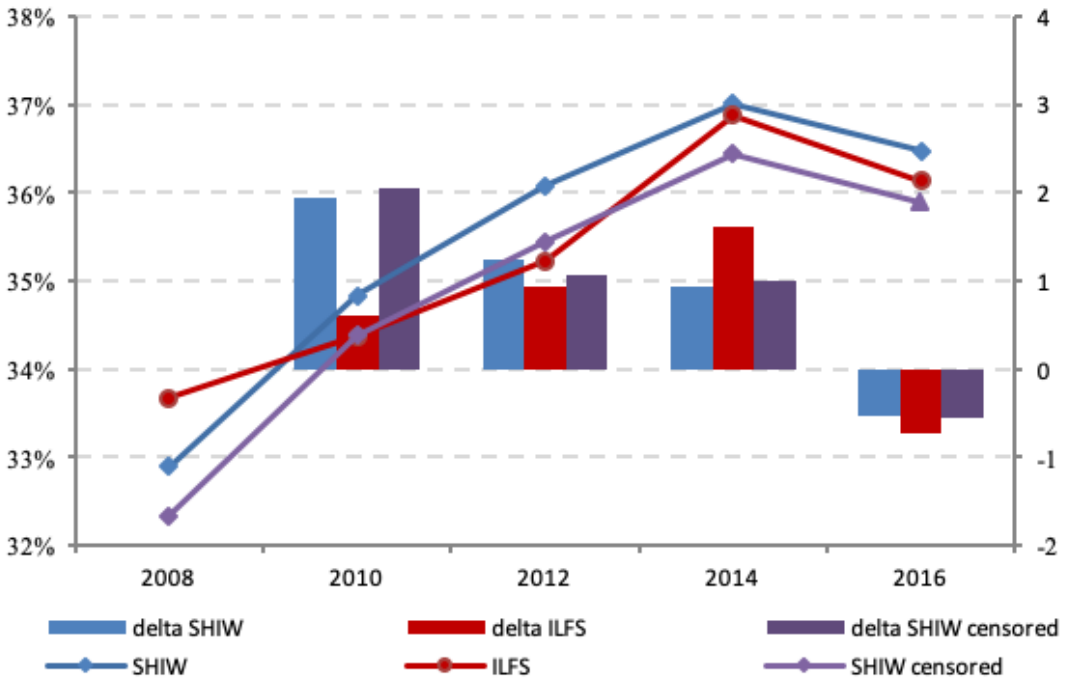
Censoring - 2

Comparison of Gini index computed on monthly equivalised labour income in the ILFS, in the SHIW and in the SHIW with censored monthly wage



Source: ILFS and SHIW, sample weights are used. Gini index computed on equivalised monthly labour incomes. Monthly wage in the SHIW is censored censored from below (at 250) and from above (at 3000), analogously as in the ILFS. "delta SHIW" (right axis) is the difference between the Gini index computed in a given year (i.e. 2010) and that in the two-year before (i.e. 2008); "delta ILFS" and "delta SHIW censored" are analogously defined. "delta ILFS" in 2010 is the difference between the respective Gini index in 2010 and that in 2009 since the value for 2008 is not available. Gini index computed in the ILFS in 2008 refers to 2009 incomes. We consider households with no retirees and in which the reference person is 15-64 years.

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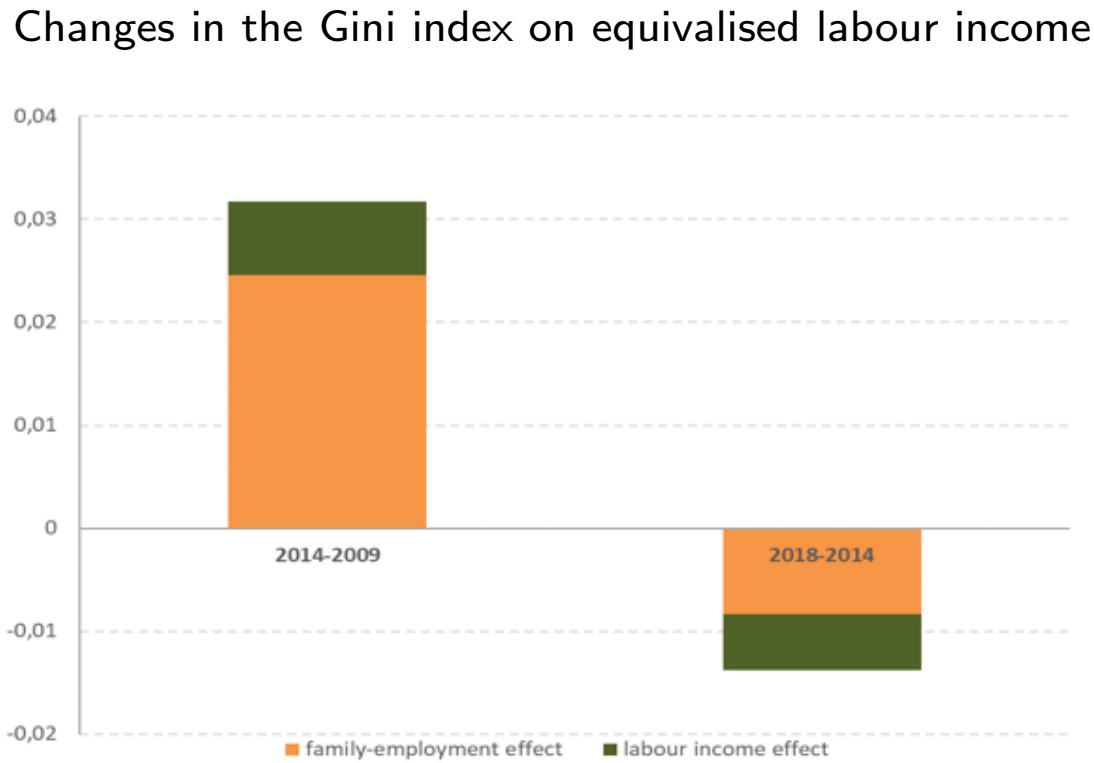
Decomposition of Gini on labour income - wage vs. employment effect



Source: ILFS, sample weights are used. We consider households with no retirees and in which the reference person is 15-64 years. The "labour income effect" is the change in the Gini index driven by the change in the distribution of equivalised labour income across people having it. The "family-employment effect" expresses how much inequality is associated to changes in the share of individuals living in families with at least one employed member. The decomposition of the change over time in the Gini index on equivalised labour income (including zero values) is based on the formula: $\triangle G \approx e \triangle G_e + (G_e - 1) \triangle e$ (Atkinson and Brandolini (2006)).

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