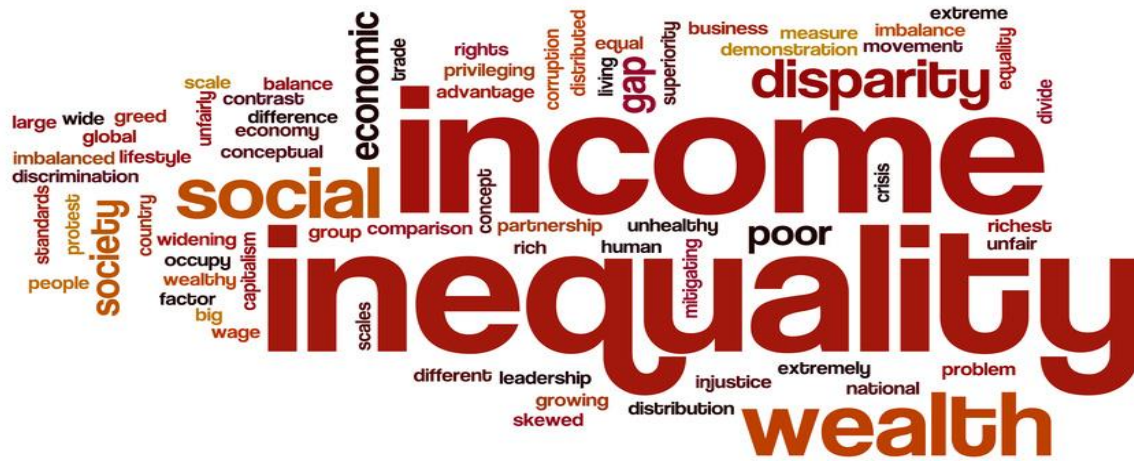


# Inequality Matters

Quarterly updates on inequality research, LIS micro data releases, and other developments at LIS



## MESSAGE FROM THE EDITOR

Dear readers,

We are excited to announce that two more countries are available in the *LWS Database*. The annual Danish series **DK15** to **DK22** is based directly on the wealth registers. Also, the annual South Korean Survey of Household Finances and Living Conditions (SFLC) **KR17** to **KR22** is partly linked to register data. New data points for Austria, Spain, Slovakia, and the U.S. also extended the *LWS Database*.

The *LIS Database* has grown significantly as well. 43 new datasets for 12 countries have been added. For more information, please see the *Data News* section.

On February 29, the Permanent Mission of Luxembourg to the United Nations and the Luxembourg Income Study (LIS) Cross-National Data Center organized a side event to the 55th session of the United Nations Statistical Commission: The Luxembourg Income Study: 40 Years of Data, Research, and Beyond - Ensuring free access to the LIS Data for United Nations Agencies.

This issue's *Inequality Matters* section provides four articles: Louis Chauvel (University of Luxembourg) proposes *Isoginis*, a Gini-comparable family of inequality indices. This article elaborates on and empirically tests the new *Isoginis*, which relate to different levels of the distribution to measure "concentration of inequality". Anna Karmann (University of Bielefeld) takes a closer look at the expansion of childcare for children under the age of three years. She examines whether increased childcare coverage leads to higher labour market participation of mothers. The cross-national study by Jörg Neugschwender (LIS) contributes to the discourse on poverty alleviation through social protection programmes – the goal is to enhance our understanding of poverty dynamics and develop evidence-based policies for a more equitable and sustainable future. Last but not least, the note by Philipp Poyntner (Paris Lodron University Salzburg) emphasizes the channels through which monetary policy influences housing markets and inequality and their interplay.

Enjoy reading!

Jörg Neugschwender

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## Isogini as a Set of Indicators to Compare Trends and Shapes of Income Inequality: The Fading Swedish Middle-Class Society in a World of Diverse Dynamics

Louis Chauvel , (University of Luxembourg)

Recent data from Sweden and other LIS countries highlight emerging dynamics in inequality, presenting an opportunity to reassess approaches to measuring inequality. Debates surrounding the conventional Gini index (referred to as "gini" hereafter) have spurred inquiries into alternative methodologies for measuring income inequality<sup>1</sup>. The same Gini coefficient can encapsulate markedly different distribution patterns (Osberg, 2017). As the Gini index offers an overall measurement of inequality across the entire distribution, the notion of "concentration of inequality" (Blesch et al., 2022) at the upper versus lower ends of the distribution, underlines the need for tailored measurements at various percentile levels.

Literature suggests supplementing gini with diverse metrics, such as various decile ratios or other indicators like the percentage of persons at risk of poverty (ex. the proportion of individuals below 50% of the median income, referred to as "arop" hereafter). Sophisticated approaches like the Ortega parameters have been proposed (Blesch et al., 2022). However, a challenge persists in comparing these disparate measures, given their distinct conceptual frameworks, magnitudes, and scales. While the Gini index serves as a standard benchmark with well-established metrics (0 signifies perfect equality and 1 perfect inequality, with empirical variations of gini below 0.25 characterizing equalitarian countries to above 0.5 with high inequality like in Latin American nations), other metrics like decile ratios or arop lack direct linkage to gini, making comparisons difficult. Even the utilization of multi-y-axis graphs fails to elucidate such comparisons.

The purpose of this paper is precisely to elaborate and empirically test a new family of inequality indicators, gini-comparable, and pertaining to different levels of the distribution to measure "concentration of

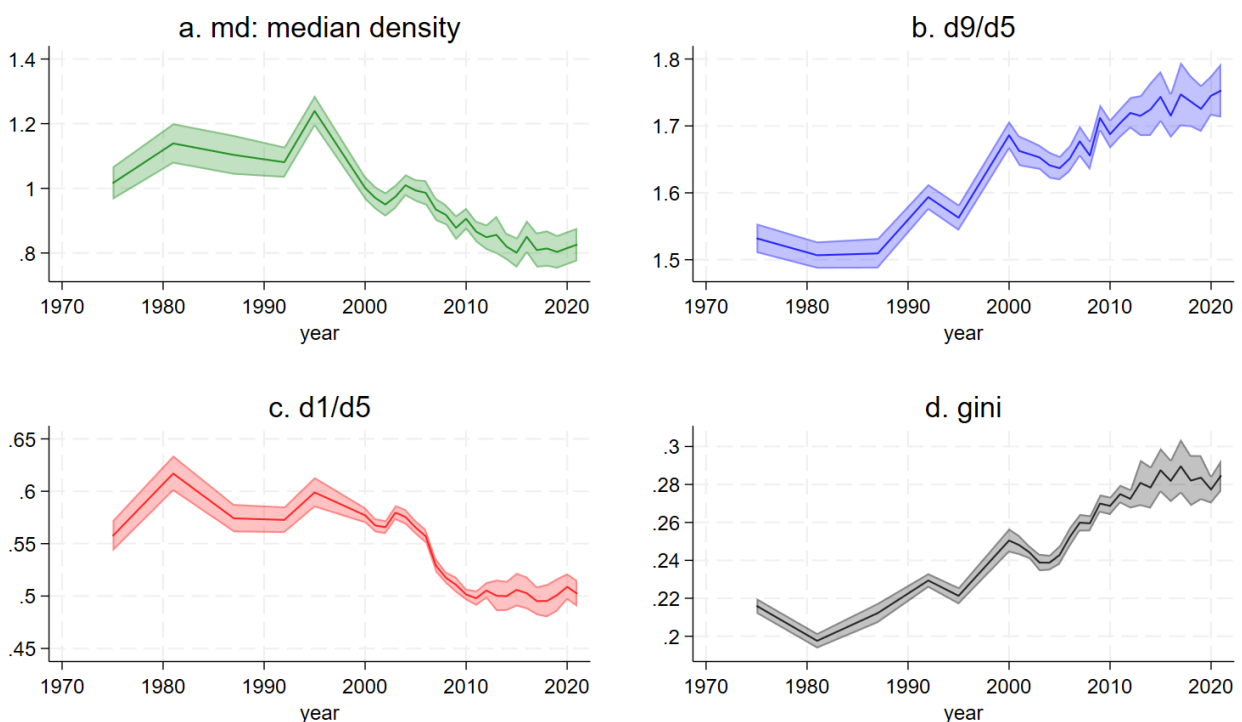
inequality" at different levels. Isoginis are calculated, here at percentile thresholds 0.1 (lower decile), 0.9 (upper decile) and 0.5 (median), to represent inequality at, say, near-poor, near-median, and near-rich income levels. Isoginis are empirically comparable to the traditional gini. The STATA module `ssc install isogini`, available in `lissy` as well, implements this new set of measurements.

### A typical case: Sweden and the decay of a middle-class society

Commencing with a remarkable case, new data from Sweden<sup>2</sup> will illustrate different complementary measures of inequality. The systematic use of 95% confidence intervals facilitates determination of significance:

- In Sweden, the median density indicator (md: the ratio of the proportion of incomes ranging from 0.9 to 1.1 times the median, by 0.2, the width of the income bracket, see Figure in Methodology), plummeted by one third in the last two decades (see Fig.1.a). This indicates a significant erosion of homogeneity within the Swedish middle class. Contrasting with its past as a global model of equality (with md up to 1.2), Sweden's current state (with md=0.82 in 2021), Sweden now lags near countries like France, Germany, and the Netherlands. The 95% confidence intervals confirmed the statistical significance of this transformation.
- Complementing this, the ratio d9/d5 (see Fig.1.b) shows that the income disparity between the top decile and the median has expanded from 1.5 times to 1.75 times, representing a relative growth of 17%.

Figure 1. Median Density (green) compared with gini (black), d9 (blue) and d1 (red), Sweden 1975-2021 (95% ci)



- Symmetrically, the d1/d5 lower decile to median ratio (see Fig.1.c) declined, showing a sudden drop immediately after 2005, falling from 0.58 times to 0.50 the median, constituting a sudden (in 5 years) relative loss of 14%, this acceleration suggesting the complexity in inequality dynamics.
- The traditional gini (see Fig.1.d) shows a quasilinear increase of inequality ranging from 0.2 in 1981, signifying extreme equality, to 0.28, a level commonly observed across much of continental Europe. Overall, gini and d9/d5 present remarkably similar evolutions beyond the differences in scales.

Sweden is no longer a world model of equality and socio-economic homogeneity, particularly in terms of median density (md). Inequality expansion are substantial at the upper end (d9), the lower end (d1), and overall (gini), but with different rhythm. A complete 3D view of the income density confirms the compression at the median<sup>3</sup>. The first phases of this deep transformation were identified a decade ago by Gornick and Jäntti (2013) in their book on the Western middle classes. Yet we now possess confirmation of its magnitude. Ironically, Sweden's decision to cease microdata disclosure post-2005 occurred precisely when these significant societal shifts unfolded. No other country in the LIS database exhibits a comparable seismic upheaval in inequality at the median.

The current methodological issue is the comparison between these indicators at the center, lower or upper end, since the four metrics are intrinsically different. The innovative Isogini indicators provide a solution (see methodology), with Isogini(0.1) representing the Gini coefficient for the lowest decile threshold, Isogini(0.9) for the upper decile threshold, and Isogini(0.5) for the median level, all measured on the same scale as the traditional gini.

Five key insights emerge from the analysis of the four indicators in Sweden (see Fig. 2):

- Isogini(0.1) is in general above the other curves, in particular after 2005, while isogini(0.9) remains below. This means that in Sweden,

inequality is stronger at lower incomes, with isogini(0.5) falling in between, closer to isogini(0.1).

- In 2000, the four indicators exhibited relatively similar values, close to 0.25, meaning the distribution was similar to a Fisk(0.25) (see methodology) whereas by 2021, the magnitude of inequality at the lower end was significantly stronger than at the top.
- Prior to 1995, inequalities were stable and low, followed by a clear acceleration in the 2000s', particularly for isogini(0.1).
- The traditional Gini index for Sweden appears to be an average of the isoginis.

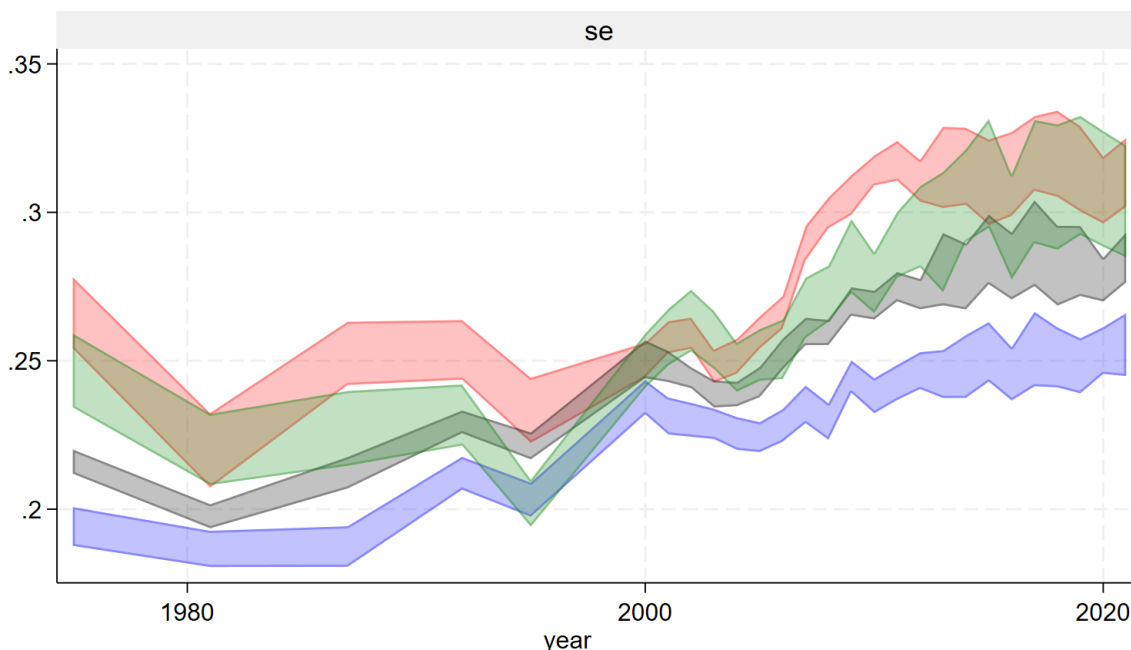
Overall, the four indicators have shown significant increases since the 1990s, albeit at varying rates, underscoring their relative autonomy from each other.

**Methodology: isogini(p), an equivalent of gini at percentile p**

The isogini(p) quantifies inequality at a specified percentile levels p ( $0 < p < 1$ , here,  $p=0.1, 0.5, \text{ and } 0.9$ ) within a distribution M through a metric that ensures comparability with the Gini coefficient. Here are considered quantiles, percentiles, deciles, etc. thresholds, like d1 for the first decile threshold, the income level that separates the lowest decile group D1, the group of the 10% poorest population to the rest. Symmetrically, d9 decile threshold is the lowest income of decile group D10, who are the individuals constituting the 10% richest in the population. But, exception, we consider only quantile threshold, not groups.

Consider distribution M, which typically represents the medianized equalized disposable household income (medhi) of a country cc in the year yyyy (e.g., us2023 for the medhi distribution in the United States in 2023) and  $m(p)$  is the income at percentile threshold p. Since M is a medianized distribution,  $m(p=0.5)=1$ . The  $isogini_M(p) = \ln(m(p)) / \text{logit}(p)$ , where  $\text{logit}(p) = \ln(p/(1-p))$ . This new set of indicators relies on the isograph (Chauvel, 2016), a representation of distributions where the x-axis is  $\text{logit}(p)$  and the y-axis is  $isogini_M(p)$ . Isographs are generally close to flat lines plus some fluctuations.

**Figure 2. Isogini(p) for p=0.1 (red), 0.5 (green), 0.9 (blue), and the traditional gini (grey), Sweden 1975-2021**



Consider  $F_\gamma$ , the medianized log-logit (aka. Fisk 1961) distribution of coefficient  $\gamma$ :

$$f_\gamma(p) = \exp(\gamma \logit(p)) = (p/(1-p))^\gamma$$

A notable characteristic of  $F_\gamma$  is that its Gini coefficient is equal to  $\gamma$  (Dagum 1977), and  $\text{Isogini}_F(p)$  is the constant  $\gamma$ . Consider  $\text{isogini}_M(p)$  defined as the gini  $\gamma$  of the Fisk distribution  $F_\gamma$  where  $f_\gamma(p) = m(p)$ . Consequently  $\text{isogini}_M(p) = \ln(m(p)) / \logit(p)$ .  $\text{isogini}_M(p)$  is the gini of the Fisk with income at percentile level  $p$ :  $f(p) = m(p)$ . The Fisk distribution has a sense in the sociological study of stratification, in relation to the PSI, the Positional Status Index (Tam, 2016). An increment of 1 unit in the  $\ln(\text{PSI}) = \logit(p)$  across the social hierarchy corresponds to an increment of  $\gamma$  (the Gini coefficient) in the logged-income  $\ln(y)$ . The higher  $\gamma$ , the wider the income steps on the social ladder.

Here, isoginis are defined at decile thresholds  $d1$ ,  $d5$  (median) and  $d9$ . Since  $\text{isogini}_M(0.5)$  is not defined by the formula since  $\logit(p) = 0$ , an alternative calculation is considered at  $d5$ . Consider  $\delta_M$ , otherwise  $\delta_m$ , the median density of distribution  $M$  defined as the percentage of individuals with income  $m$  within the range  $(m_{0.9}, m_{1.1})$  divided by 0.2, the width of the range. Through simulations based on F distributions, median density and gini are related:  $\delta_F \approx 1/(4\gamma)$  with  $r^2 > .99998$ .

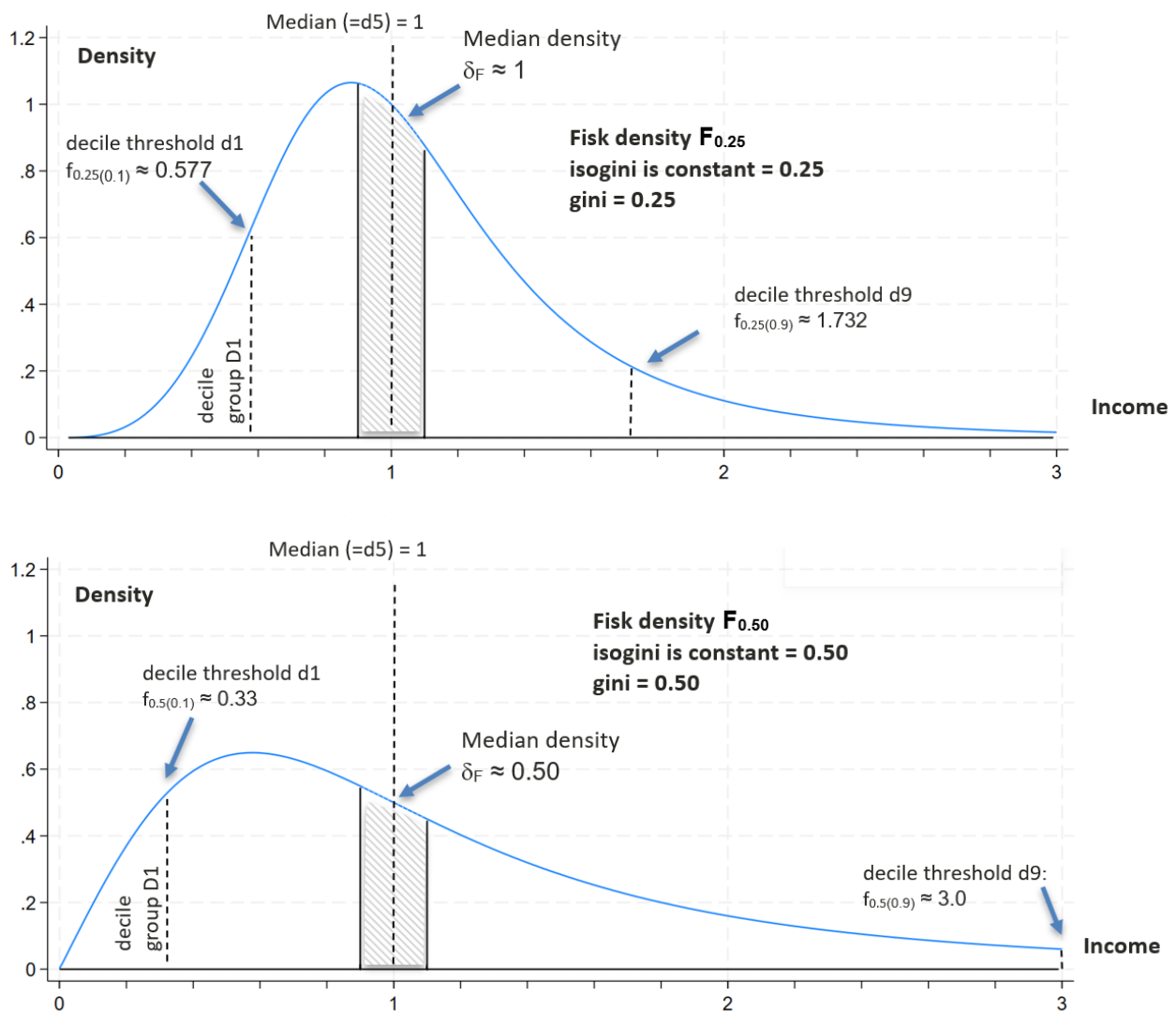
Consequently, by reversing this relation, the isogini at the median is defined as the gini of the Fisk distribution with the same observed median density:  $\text{isogini}_M(0.5) = 1/(4\delta_M)$ .

Since the isoginis are the gini of F distributions, they share the same scale as Gini indices, and can be graphed and compared on the same Y axis. When microdata are available, isoginis are easy to bootstrap for confidence intervals (here with 100 iterations).

This proposal involves the comparison of four main gini compatible indicators:

- $\text{isogini}(0.1)$  assesses inequality at the lower decile threshold, higher values meaning lower  $d1$  relative to the median. This measures "lower" or "near-poor" inequality.
- $\text{isogini}(0.9)$  operates at the 9th decile threshold, a higher value meaning a wider gap between the upper decile threshold  $d9$  and the median. This characterizes "upper" or "near-rich" inequality.
- $\text{isogini}(0.5)$  serves as an indicator of low density at the median: a higher value signifies a less homogeneous median class and can be referred to as "inequality at the median".
- the traditional gini completes the set of indicators.

Figure 3. Density of two medianized Fisk distributions ( $\gamma = 0.25$  &  $\gamma = 0.50$ )



The four indicators measure inequality at different levels, offering a unified metric comparable with gini, and can detect where inequality is concentrated. When the distribution follows a Fisk( $\gamma$ ) model, all four indicators are equal to the Gini coefficient  $\gamma$ . This is the case in a fourth of the 864 cyyyy LIS samples; in the other cases, the shape of inequalities results from different types of concentration of inequality at different quantile levels.

The correlation matrix (Fig. 4) established on 864 LIS samples (LIS version 14/03/2024) shows significant correlations between isoginis, the traditional gini, and indicators like arop, people “at risk of poverty” below 50% of the median, and its symmetric, say aror, for “at risk of richness”, above 200% the median. The strongest correlation with isogini(0.1) is arop, and the strongest with isogini(0.9) is aror. The isogini for the median is intermediate, correctly but imperfectly correlated with the others. This confirms that isogini(0.1) is a gini for the poor, and isogini(0.9) for the rich. Surprisingly, the traditional Gini coefficient is best correlated with inequality at the top: empirically, the Gini index, often misrepresented as an overarching measure of inequality, is primarily an average level of inequality with stronger ponderation at the top. The traditional gini has merits, being in average correctly correlated with others; anyway, gini is relatively limited to measure the concentration of inequality at the bottom of the distribution, where isogini(0.1) provide more consistent measurement with, for instance, arop. The  $R^2$  correlation between

poverty (arop) and gini is only 83.6%, confirming earlier findings of Allegranza *et al.* (2004: 269).

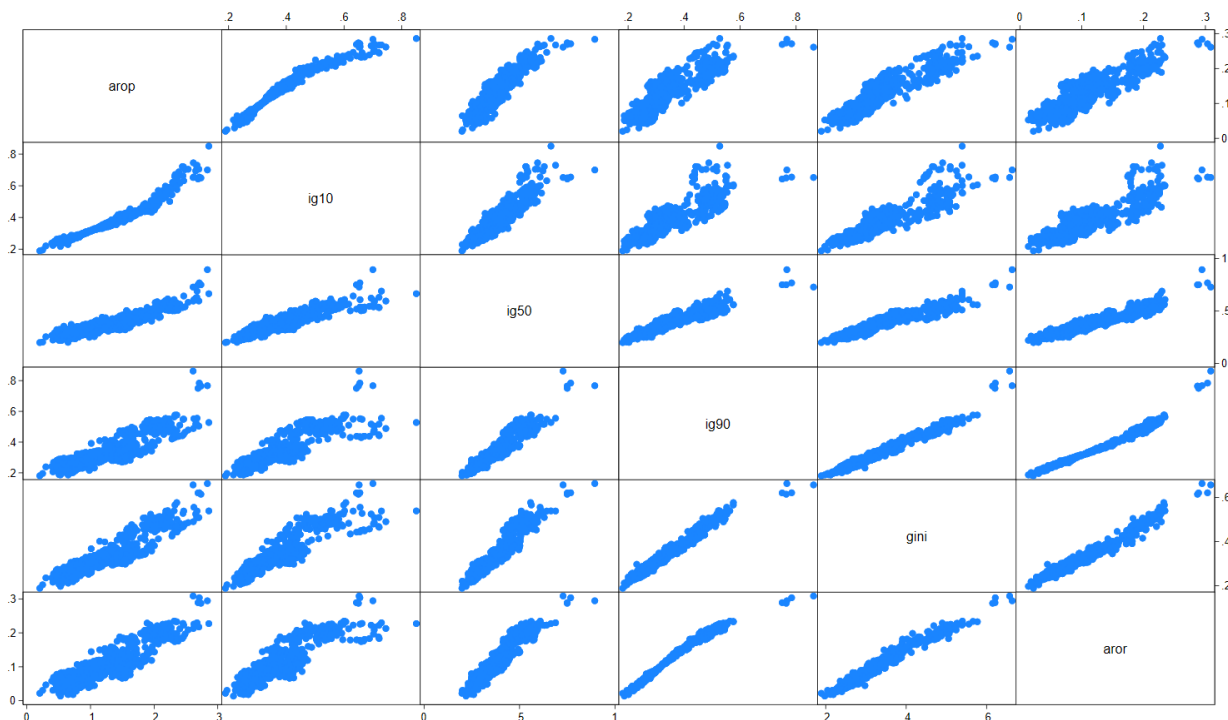
**International comparison: Sweden is now a “normal” European Union country, no longer the Nordic model**

Examining data from 25 countries within the Luxembourg Income Study (LIS) database, spanning at least 25 years after 1975, the four indicators isogini and gini are systematically analyzed. A spectrum of distinct patterns is apparent, focusing initially on structures and subsequently on trends (Fig. 5).

The four indicators exhibit large overlaps in countries like Austria, Switzerland, Luxembourg, Mexico, the Netherlands, etc. The proximity of the four indicators means their distributions are close to Fisk distribution of parameter gini.

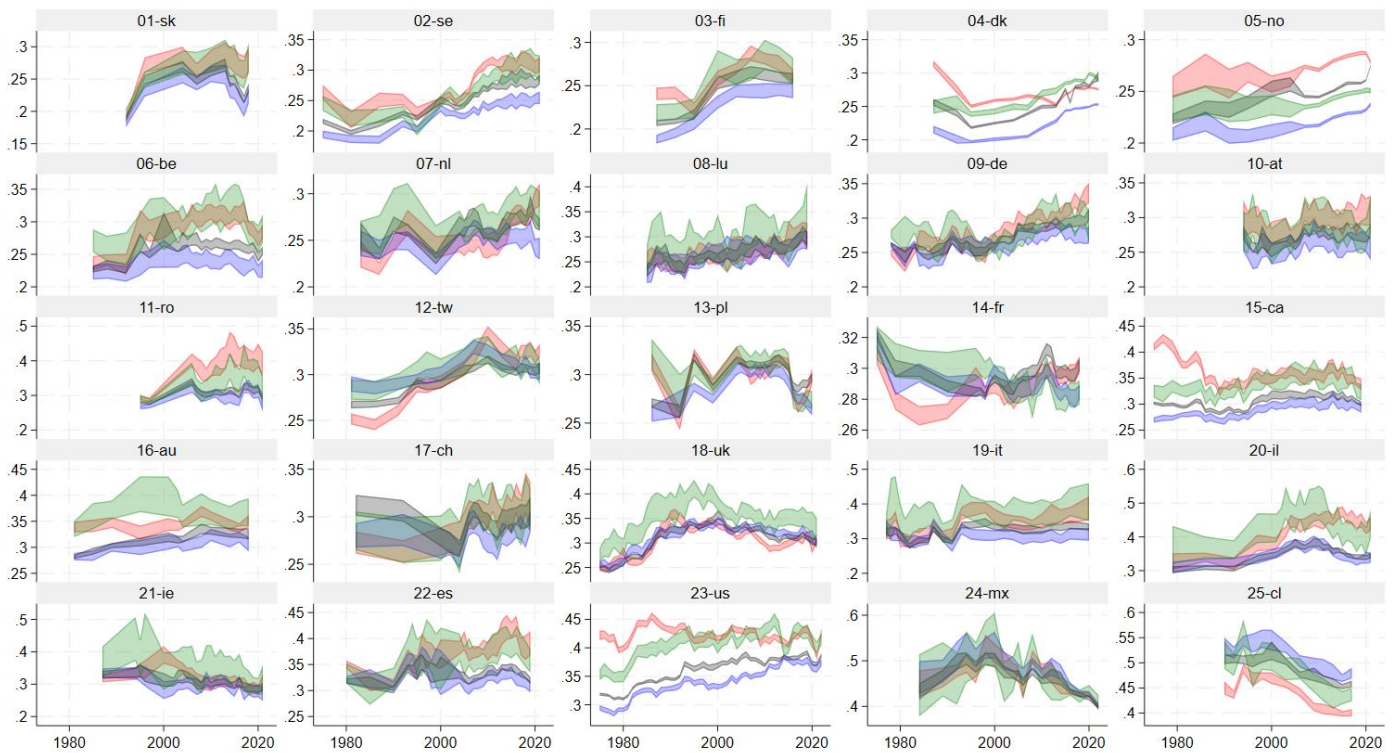
Across many other countries, inequality is more often stronger at the bottom end than at the top, typically when the red line isogini(0.1) is above the others. This is particularly pronounced in Canada, Denmark, Norway, Sweden, the United States, and in more recent years in Spain, Israel, Poland, Romania, and Taiwan. This means a prevailing trend where inequality is particularly concentrated at the bottom. Ironically, even though pro-poor redistribution policies logically incur lower costs to the state budget compared to middle-class policies, nowadays the poor are falling farther behind in those countries. The trends of recent decades reveal a deepening gradient of income within the lower percentiles, with intensified inequality at the bottom.

**Figure 4. Correlation matrix graph of the isoginis, gini, arop and aror**

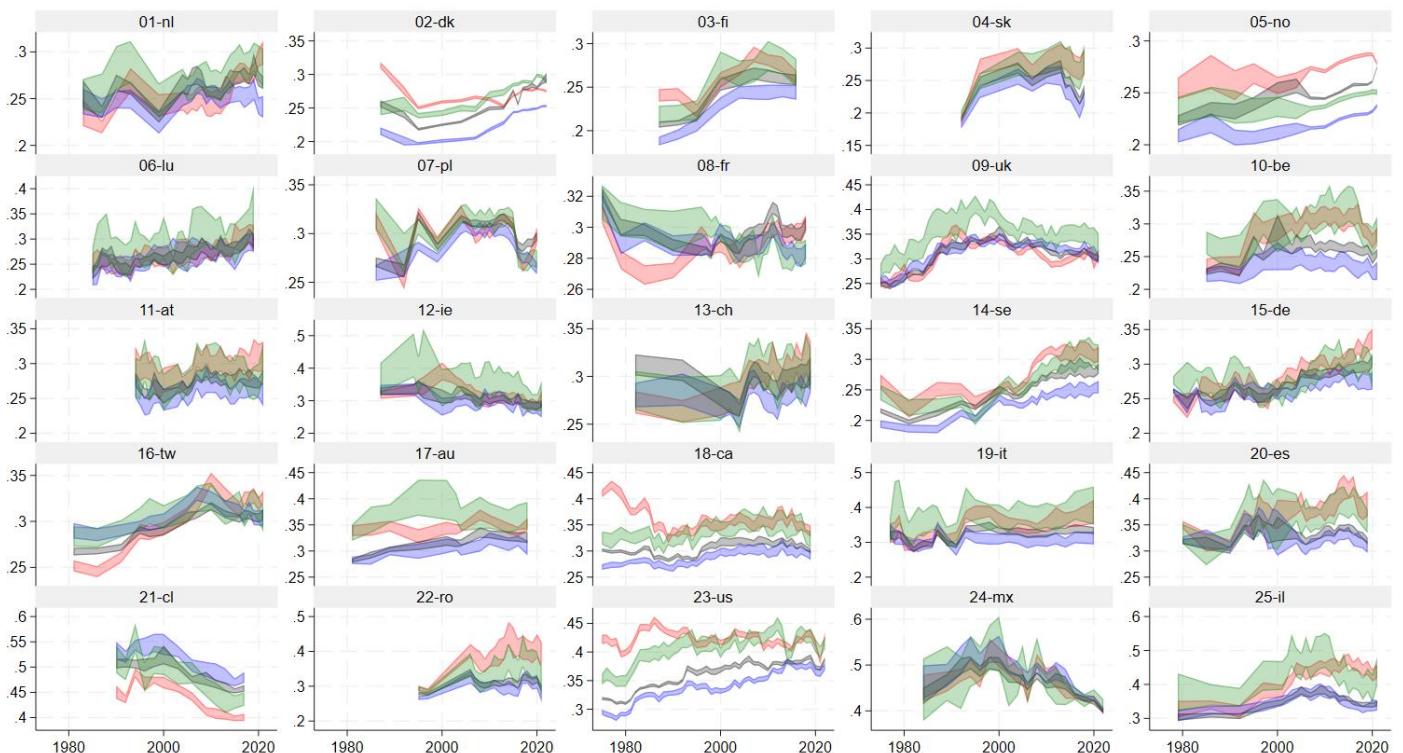


	arop	ig10	ig50	ig90	gini	aror
arop	1					
ig10	0.9755	1				
ig50	0.9266	0.9162	1			
ig90	0.8652	0.851	0.9373	1		
gini	0.8859	0.8685	0.946	0.9883	1	
aror	0.9147	0.902	0.9497	0.9819	0.9824	1

**Figure 5. Isogini(p) for p=0.1 (red), 0.5 (green), 0.9 (blue), and the traditional gini (grey), 25 countries 1975-2022**  
**Countries ranked on average gini before 2000**



**Countries ranked on average isogini(0.1) after 2010**



Conversely, inequality among the near-rich tends to be relatively lower in comparative terms, notably observed in countries such as the United States, Australia, Canada, Denmark, Finland, Israel, Norway, Romania, and Sweden. In these nations, constraints on the incomes of the affluent are comparatively stringent, either through progressive taxation measures or (in a subtle way) exemptions on high-income declarations, which are often prevalent in countries where long-term capital gains enjoy generous tax optimization. Moderated income

inequality for the near-rich might hide massive wealth expansion at the top (Chauvel 2022). In some cases, such as Chile, the blue line representing inequality at the top surpasses other indicators. Uruguay exhibits the same pattern, along with several other countries not represented in Fig. 5. In Chile, inequality at the bottom is relatively moderated in contrast to the pronounced disparities observed at the upper echelons of the income distribution.

This complexity is confirmed and show significant inconsistencies between top and bottom inequality when rankings of inequality are compared (Fig.5). Countries' rankings based on their average gini before 2000 fit with the blueprint of welfare regime literature: Nordic countries (and some Eastern Socialist ones) are more equal than Bismarck welfare regimes, then come Southern European versus English-speaking Liberal countries, and at the end Latin American countries. The same countries ranked on average isogini(0.1) meaning inequality at the bottom, averaged after 2010 onwards, produce rather different rankings. The first equal country becomes Denmark, and the last Israel, but between the ranks are considerably altered, with the U.K. in a more equal position, compared to Sweden that is less than average for its lower tail inequality. Now, Sweden's profile of inequality after 2005 aligns more closely with continental countries like France or Germany, and notably show higher inequality than in Denmark and Norway.

In the majority of countries, the Gini coefficient (represented in grey) and isogini(0.9) exhibit overlap. If not, gini is between the three other lines. It had been noticed that the red line is often above the others, but there are exceptions, like in Chile where the blue line is above the others. In certain instances, notably observed in countries such as the United Kingdom, Austria, Belgium, and Israel around the year 2005, the green curve representing inequality at the median is elevated above the others. This means polarization (see below). This means the distributional shapes are diverse, denoting different configurations of concentration of inequality.

**Shapes of distributions: understanding slope of concentration of inequality and polarization**

These diverse configurations suggest two additional indicators of shapes of inequality, based on the isoginis.

The first one,  $\Pi$ , is an indicator of polarization, understood as a specific concentration of inequality at the center compared to the rest, otherwise a strong isogini(0.5), denoting weaker median density.

$$\Pi = \text{isogini}(.5) - \frac{1}{2}(\text{isogini}(.1) + \text{isogini}(.9))$$

should be considered as a convenient polarization indicator, more accurate than the Wolfson's (1994) since it detects if the median isogini is specifically strong compared to the extremes. In the case of the United Kingdom, this stretch at the median is associated with the Thatcherian era and its subsequent policies (1980-1997), initially leading to a major polarization at the median before spreading to the lower and upper segments, followed by a relative moderation in inequality after 1997. A similar significant hump in the 1990s in the isogini(.5) is visible in Australia and Ireland and in the early 2000s in Israel.

The second one,  $\Sigma$ , is the slope of inequality from the poor to the rich, expresses (if positive) the relative concentration of inequality at the top compared to the bottom. Negative values denote high inequality at the bottom.

$$\Sigma = (\text{isogini}(.9) - \text{isogini}(.1)) / (2 \logit(.9))$$

In Fig.6, the horizontal axis denotes sigma the slope of inequalities, meaning the rich are far richer than the poor are relatively poor: Chile, India, South Africa, and Uruguay, are typical of extreme richness of the rich. Conversely, negative values of sigma mean the relatively deeper poverty of the poor: Peru, South Korea, and Serbia, are typical of this trend. The vertical axis represents polarization, where countries like Israel, Palestinian Authority, Australia, and Ireland, are typical of high polarization. Lower values mean relatively higher density at the center, compared to the isoginis at the extremes. The two dimensions are independent, meaning the two indicators provide complementary information in the distribution.

**Figure 6. Average values (2000 to most recent year) of the slope of inequality, sigma, horizontal, and polarization, pi, vertical, for the main 25 countries (blue), plus the 28 other LIS countries (red)**



When the distribution is a Fisk, the values of  $\pi$  and  $\sigma$  are zero. Positive polarizations are more common than negative ones; negative slopes are more usual than positive, but Fig.6. confirms the large diversity of  $\sigma$  and  $\pi$  indicators, and that the point (0,0) belongs to the domain of variation of the coefficients.

The three isogini,  $\sigma$  and  $\pi$  indicators collectively complete the traditional gini, and often provide significant information on distributions, more than nuances of complexity: it is the case of recent specific changes observed in Norway: the significant increase in gini and isogini(.9) in 2021 coincides with a significant decline in isogini(.1), highlighting growing concentration of inequality at the top. This confirms the relative independence of the indicators: isogini have sometimes significantly opposite directions. The innovative isogini technology offers a robust framework for assessing shapes and changes in inequality.

For example, in the United States, it initially detects a substantial and significant decrease in inequality at the lower end, as measured by isogini(0.1), from 2019 to 2021. However, it subsequently reveals that this progress has been almost entirely overturned by 2022. Similarly, recent trends in Germany and the Netherlands suggest troubling signs of marginalization within the lower strata of income distribution.

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<sup>1</sup> *The most visible pieces include the Nobel price Angus Deaton and Anne Case who criticized the Gini index as a biasing tool <https://www.prospectmagazine.co.uk/ideas/economics/39791/rebottling-the-gini-why-this-headline-measure-of-inequality-misses-everything-that-matters> whilst Francisco Ferreira provided a nuanced support to the old tool <https://blogs.worldbank.org/developmenttalk/defense-gini-coefficient>*

<sup>2</sup> *For over a decade, starting from 2005 (the last sample for Sweden) and continuing until the LIS data release of spring 2023, Sweden remained a blind spot due to regulations that prohibited the sharing of microdata. However, now, decades of significant transformation in Sweden are unveiled.*


<sup>3</sup> *The webpage [https://louischauvel.org/surface\\_SNew.html](https://louischauvel.org/surface_SNew.html) provides an interactive (mouse movable) 3D density Python graph of Sweden 1970-2020. The three axes are respectively: x, period from 1 to 50; y income from 0 to 50, 20 denoting the median (y is trimmed at 2.5 times the median); and z, the standardized density of the distribution.*

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## Uneven Effects of Childcare Expansion?

Anna Karmann , (Bielefeld University)

### Introduction

In recent decades, welfare states have experienced a renewed interest in family policies, particularly since the beginning of the 21st century, marked by a paradigm shift towards family-work reconciliation policies. A key policy has been the expansion of childcare for children under the age of three years (Ferragina, 2019). Publicly organised childcare allows families to transfer childcare responsibilities from the private to the public sphere. The use of public childcare can reduce work interruptions in mothers' careers, facilitate their (re-)entry into the labour market and aim to reduce inequality between genders. However, the outcomes of work-family reconciliation policies have been uneven, giving rise to what scholars have termed "welfare state paradoxes" (Mandel and Semyonov, 2005; Mandel and Semyonov, 2006; Korpi et al., 2013) and "gendered trade-offs" (Pettit and Hook, 2009). Both hypotheses discuss how reconciliation policies can have unintended, paradox, or adverse consequences for women and mothers. While childcare services may facilitate women's (re-)entry into the labour market, the jobs available may entail precarious working conditions and labour market segregation, and the associated risks may not be evenly distributed among women. Lower class women often face the double pressure of poor working conditions and the need to augment household income. In contrast, higher-class women often perceive their (re-)entry into the labour market as tied to career opportunities rather than economic necessity. This raises the question of whether the expansion of childcare is leading to greater inequality *within* gender according to social class.

The analysis examines whether increased childcare coverage leads to higher labour market participation of mothers. Therefore, I analyse two labour market outcomes to answer the questions: 1) Do mothers from different social classes react differently to childcare expansion regarding labour market inclusion? and 2) Does childcare expansion affect their working hours differently?

The effects of childcare expansion on mothers' labour market participation remain unclear, with scholars suggesting different mechanisms and finding different results for women in different social classes.<sup>1</sup> Some studies show minimal effects of childcare expansion on labour market outcomes, attributing this to the so-called Matthew effect, where highly educated women have the financial means to outsource childcare regardless of the availability of public childcare services. When public childcare expands, they switch from expensive private arrangements to affordable public childcare, so that the participation rates of highly educated mothers are high regardless of childcare policies (Pavolini and Van Lancker, 2018). Other findings show that low-educated mothers are the most responsive to an increase in public childcare, as they have higher financial pressure to (re-)enter the labour market to increase their household income, and public childcare reduces private responsibilities (Scherer and Pavolini, 2023). However, in addition to different methodological decisions, different results also emerge from using different time periods in the analysis, treating family policies separately or as policy packages, including contextual factors such as earning inequality in a country (Hook and Paek, 2020), or grouping countries based on typologies (Korpi et al., 2013).

For my analysis, I used data from 13 countries and 118 country years from the Luxembourg Income Study (LIS). I utilised a pooled dataset with data from 2005 and 2018<sup>2</sup> and combined it with data from Eurostat on childcare coverage rates for children under three years, in order to contribute to the debate on paradoxes and trade-offs. Thereby, I operationalised class by education level and focused on married women between 25 and 45 years old with children between 1 and 6 years. I ended up with 120,734 cases for the first and 70,101 cases for the second research question.

### Changes in childcare coverage and labour market participation of mothers

Figure 1 shows the development of childcare coverage rates for children under three years of age (left) and maternal employment rates (right) between 2005 and 2018 in the 13 analysed countries. On average, childcare coverage increased by 14.5 percentage points over this period. Although there are significant differences in childcare coverage rates between countries, the common pattern shows an increase for almost all countries. The right panel suggests a high disparity in labour force participation by education level. In 2006, around 45 per cent of mothers with low educational attainment were employed. By 2018, there was a minor increase of 2.2 percentage points. Highly educated women exhibit high levels of labour force participation. In 2006, almost 80 per cent were employed, and by 2018, there was a minor increase of 2.2 percentage points. Medium-educated mothers fall in between. At the beginning of the observation period in 2006, 64.8 per cent of them were employed. This group increased the most by 5.9 percentage points to 70.7 per cent.

Looking at macro-level trends, an increase in childcare coverage for very young children correlates with higher labour force participation among mothers. This trend suggests that it is predominantly middle-class mothers who have simultaneously entered the labour market in response to the expansion of childcare.

### Heterogeneous effects on employment?

To examine these macro-level developments more closely, the following section presents the predictions of the interaction of macro-level childcare coverage rates and micro-level educational attainment of the mothers for two different labour market outcomes calculated in regression models.<sup>3</sup> The results suggest that there are level differences in the labour market participation of mothers depending on their educational level (see Figure 2). As childcare coverage increases, the difference between low and medium-educated mothers also increases and becomes significantly different. The slight increase for highly educated mothers can be explained by a ceiling effect, as there is already a high level of employment (0.71) at low coverage rates, which strengthens the hypothesis of the Matthew effect. For low-educated mothers, the effect on participation seems to be minimal. Additionally, a U-shaped relationship is evident, with both low and high childcare coverage rates corresponding to higher employment probabilities. Medium-educated mothers show a high responsiveness to changes in childcare coverage rates. There is a clear positive effect of higher childcare coverage rates on mothers' employment, with the probability increasing from 0.55 to 0.72 on average.

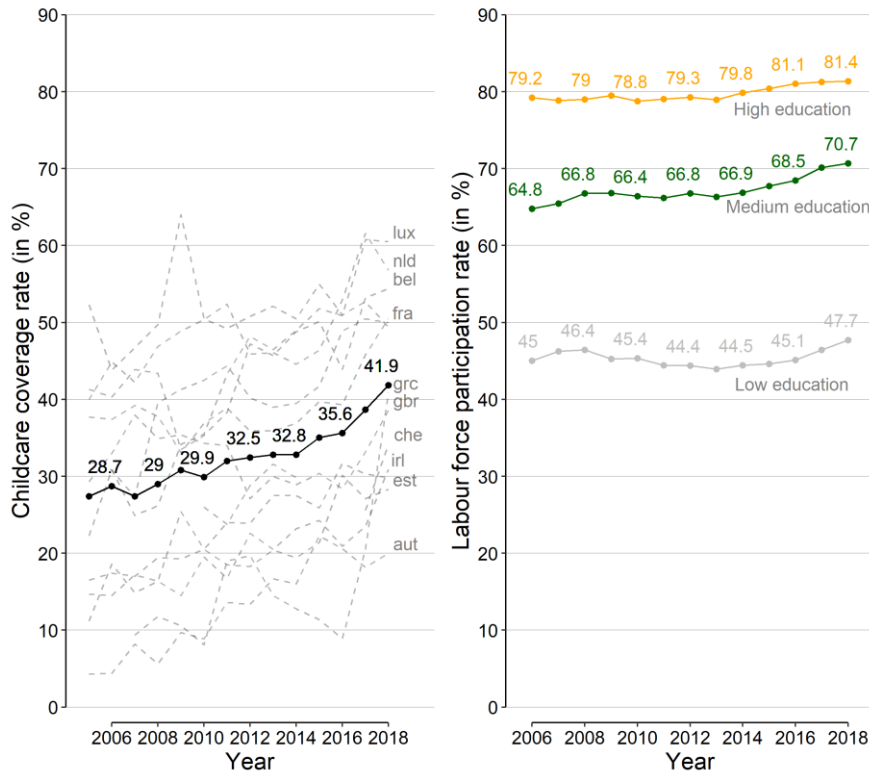


Figure 1: Left panel: Childcare coverage rate for children under the age of 3 years. Eurostat data between 2005 and 2018 for 13 countries (dashed lines). Yearly mean of childcare coverage for children under the age of 3 years. Indicator: tepsr\_sp210 (Eurostat, 2023). Right panel: Labour force participation of mothers by education level and with at least one child under 14 years, yearly mean for the 13 used countries. OECD family database. LMF1.2 (OECD, 2023). Own calculations.

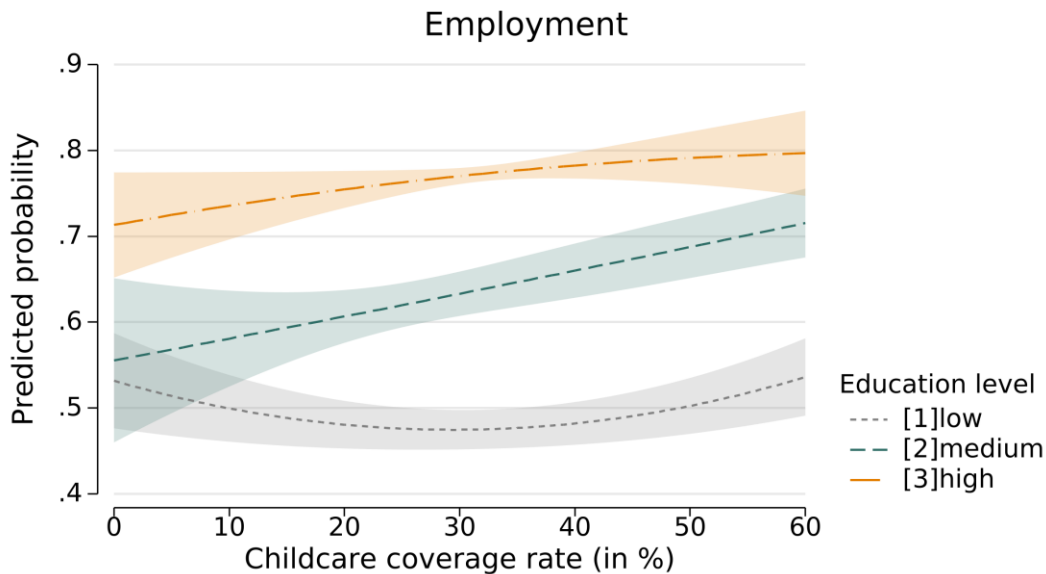


Figure 2. Predicted probability of employment by three education levels. Luxembourg Income Study (LIS). Own calculations.

When comparing the level of working hours (see Figure 3), differences between the levels of education are also apparent. Highly educated women work the most, and without childcare, their weekly working hours are, on average, around 32 hours, increasing to just over 35 hours. Mothers with a medium level of education increase their working time by approximately 3 hours (from 28 to 31 hours) as the childcare coverage rate increases from 0 up to 60 per cent.

While mothers with lower education work on average slightly more than 26 hours per week without childcare coverage, they have a more pronounced increase in working hours starting from a coverage rate of 30 per cent. When childcare coverage reaches 60 per cent, the average working hours are almost the same level as for mothers with a medium level of education, at 30 per cent.

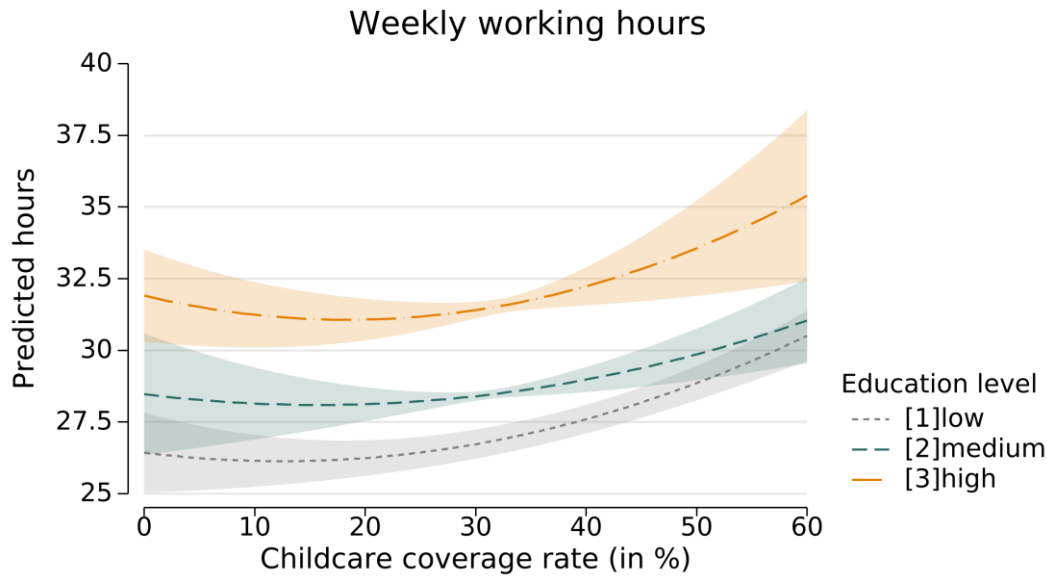


Figure 3. Predicted weekly working hours by three education levels. Luxembourg Income Study (LIS). Own calculations.

### Discussion

I find differences in labour market outcomes for mothers in different classes, regardless of the childcare coverage. Contrary to previous research, I find a positive effect of higher childcare coverage rates on labour market inclusion for *middle*-class mothers. On the one hand, this can be explained by a possible Matthew effect: Mothers from higher social class (re-)enter the labour market anyway and are less dependent on childcare facilities because they can afford to organise childcare privately. Even if they profit from public childcare facilities, this is not reflected in higher employment rates. On the other hand, lower-class mothers do not respond to the expansion of childcare facilities, which may contradict the hypothesis of the need for a second family income. For middle-class mothers in particular, childcare expansion seems to be a possibility for them to (re-)enter the labour market, and the policy arrangement may have a greater impact on their decision. However, for those who do enter the labour market, high childcare coverage may have a stronger effect on working hours for lower class mothers. For those mothers who work, a high childcare coverage enables them to work more hours per week.

In the context of the paradox and trade-off hypothesis, it is necessary for further research to investigate other dependent variables that measure labour market segregation and income distribution (which I examine in a forthcoming paper) in order to also cover the working conditions. The responsiveness of middle-class mothers may also be related to the sectors and jobs where flexible working arrangements are more common, making it possible to combine care and work. On top of that, the cost of childcare facilities may influence the threshold at which earnings compensate for childcare costs, which may be an essential consideration, especially for mothers from lower social classes.

<sup>1</sup> Class is often operationalized by education level.

<sup>2</sup> Due to missing data for specific variables, I used an unbalanced dataset of the following countries: Austria, Belgium, Estonia, France, Germany, Greece, Ireland, Luxembourg, Netherlands, Spain, Sweden, Switzerland, and the UK.

- <sup>3</sup> A forthcoming paper provides concrete model specifications. Pooled weighted regression models with controls for individual characteristics, macro characteristics, year, country, and country\*education level fixed effects are used. Furthermore, robust and clustered country-specific standard errors are used.
- <sup>4</sup> In the United States six observations had net wealth at least equal to the minimum level needed to qualify for the Forbes list, thus they were removed from public data set.
- <sup>5</sup> In Table 6, pp. 15 the ratio between survey and National Accounts for dwellings is equal to 151.
- <sup>6</sup> Please contact the authors before quoting.

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## Analyzing the Impact of Social Protection Programs in a Cross-national Perspective

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*This article is based on the authors presentation “How to compare social protection programs around the world and measure their role in eradicating extreme poverty and vulnerability to poverty” held at the UNECE Group of Experts on Measuring Poverty and Inequality meeting in Geneva, 28-29 November 2023.*

### 1. Introduction

Eradicating extreme poverty constitutes a fundamental objective within the Sustainable Development Goals (SDGs) framework. The pivotal roles played by the State and non-governmental organizations (NGOs) in this pursuit are undisputed. Central to this endeavor are social protection programs, encompassing not only cash assistance but also the provision of essential goods and services through in-kind transfers. These programs offer a lifeline to impoverished families, augmenting their resilience and empowering them to enhance their overall well-being. While certain countries primarily channel their efforts toward supporting the elderly population, others adopt a more inclusive approach by identifying various vulnerable groups around which social programs and eligibility criteria are tailored. In this study, it is argued that examining long-term progress involves carefully analyzing both absolute and relative poverty. The cross-country dimension allows for gaining additional valuable information.

This cross-national study contributes to the discourse on poverty alleviation – the goal is to enhance our understanding of poverty dynamics and develop evidence-based policies for a more equitable and sustainable future. Therefore, this study provides a structured approach to assess the impact of social programs. It is meant to build a framework to comprehensively evaluate the overall impact before and after allocating specific social programs across the entire society and among subgroups. Thus, the first section on methodological approaches builds the fundament for the following sections. As the overall study exceeds the format of *Inequality Matters*, it is divided into two separate articles. This first article will concentrate on relative at-risk-of-poverty thresholds, whereas the second part will elaborate specifically on absolute poverty methodology. Using the relative poverty methodology, this article showcases how far family benefits have effectively contributed to poverty prevention in society. A subsection exemplifies how the methodology can be adapted to a subgroup, namely single-parent families. The Luxembourg Income Study (LIS) Database, containing harmonized microdata files categorized by policy areas, serves as the data source. Spanning a period from the 1960s to the early 2020s, the LIS datasets provide a long-term perspective. Furthermore, using LIS data allows for simultaneously studying advanced and emerging economies. Last, a critical assessment of the methodology is provided. This article will conclude with a short interim summary, whereas the conclusive summary will be postponed to the second article.

### 2. Methodological key choices

As this study delves into poverty measurement, it is essential to clarify the various choices that shape our understanding of the term. This section outlines key decisions made in *this* exploration while focusing on describing alternative approaches.

**Income definition and social benefits:** This study focuses on the impact of social protection; thus, it is centering on income. Income here means more than just money—it includes goods and services from own consumption, non-cash employer benefits, and in-kind assistance from

social programs. All the analyses use this comprehensive definition, depending on available data. It must be noted that pensions are excluded from the scope of social programs in this study for simplicity. Pensions are in many advanced countries the only source of income among the elderly, who by majority live in their own dwelling. Hence, measuring the impact of social transfers on the total society would by far be determined by the effect of pensions on the elderly. Equally, a split into contributory vs. non-contributory programs would bias this comparison towards high poverty prevention rates in countries where pensions are paid based on residency; however, many countries would achieve comparatively low poverty rates already through contributory pensions which combine elements of contributory and tax-financed systems. Many countries also pay minimum pension amounts through their contribution-based scheme. Therefore, it is more generally recommended to analyze the effect of pensions in a separate study focused on poverty prevention among the elderly.

**Poverty measurement:** Deciding how to measure poverty is crucial. This study compares the two most common ways in cross-national research: absolute and relative poverty thresholds. Absolute thresholds are used in studies trying to eradicate extreme poverty, often seen in emerging economies and the international framework by the World Bank (Jolliffe *et al.*, 2022). In contrast, the relative methodology, prevalent in advanced economies, defines at-risk-of-poverty in relation to societal equalised median income, typically referring to *at-risk-of-poverty* at the 60% threshold (e.g., Guio *et al.*, 2021). This study will showcase both methodologies as the Luxembourg Income Study (LIS) Database comprises countries with varying development levels. Instead of the *at-risk-of-poverty* at the 60% threshold, the threshold will be set at 50%.

**Accounting for household size:** The common choices for accounting for household structure include *per capita* adjustment, *square root scale*, or the *OECD modified scale*, which considers different weights for individuals below and above 15 years. Recognizing that resources are shared among household members, also this study adjusts for economies of scale. In this study, the square root scale is applied in the sections on relative at-risk-of-poverty, aligning with the standard methodology at LIS. The findings in the sections on absolute poverty measurement are illustrated using the per capita adjustment, as it is the standard approach in the World Bank methodology.

**Grouping social benefits:** Social benefits are grouped into policy areas in the LIS Database, a limitation acknowledged in this study. While individual programs may be more politically relevant in a national context, the collective impact of social programs is crucial. Still, this study showcases that the joint payment of cumulative benefits is integral to protecting the vulnerable effectively.

**Population group selection:** Another important aspect is choosing which group of people to focus on. Social benefits are designed for specific population sub-groups. Thus, the study looks at whether these benefits reach the intended group or if they remain poor even after receiving social transfers. The initial stage assesses the overall impact before and after the distribution of benefits through the various policy areas throughout society. The subsequent stage focuses on a high-risk group—single-parent households—to reveal the effects of social programs on this vulnerable group. Alternative population sub-groups could be easily motivated.

3. Relative at-risk-of-poverty rates – the cross-national focus

Let us first look at relative at-risk-of-poverty measures. Figure 1 illustrates three relative at-risk-of-poverty rates: (1) living with less than 50% of median equivalised income vs. (2) rate without family transfers vs. (3) rate without all public transfers (excluding pensions). The *grey bar* (measure 1) refers to the at-risk-of-poverty rate after all social transfers; the threshold is defined as living with income below 50 % of the median equivalised disposable household income (*dhi*). Four example countries are chosen to showcase the international comparison. Visually, it is clear that Belgium, Sweden, and the United Kingdom yield at-risk-of-poverty rates of around 10 %. In contrast, the bars in the United States are between 50 % and twice as high, depending on the year one analyses.

Interestingly, taking out social programs from this calculation (at a fixed threshold of at-risk-of-poverty calculated on *dhi*) yields different patterns. First, let us be clear, this is simply a technical exercise. Removing social benefits from one day to another would cause the household's behavioral responses to prevent falling into poverty. Thus, the rate *without family transfers* (measure 2) and the rate *without all public transfers, excluding pensions* (measure 3), should not be considered as observed at-risk-of-poverty rates. The two rates simply describe in a static framework how much at-risk-of-poverty is reduced at a specific point in time (reference period) through the payment of social transfers: 1) the distance from the *blue square* to the *grey bar* mirrors the percentage reduction through all social transfers excluding pensions, and 2) the distance from the *red square* to the *grey bar* mirrors solely the impact of paying family benefits. Thus, the closer the red square is to the blue one, this illustrates that the additional payment of family benefits achieves the bulk of at-risk-of-poverty prevention.

The U.S. reader might be immensely alerted – family benefits in the U.S.? It needs to be noted that in the LIS Database, tax credits such as the Child Tax Credit (CTC), the Additional Child Tax Credit (ACTC), the Earned Income Tax Credit (EITC), and State tax credits are considered family benefits. Thus, two points can be concluded for the United States. First, receiving this package of tax credits and family assistance transfers

is a significant component in reducing at-risk-of-poverty, e.g., in 2019, where a) the before social transfers rate stood at ca. 21.5 %, b) the payment of all social transfers, except family benefits decreased at-risk-of-poverty to ca. 20 % and c) the further payment of family benefits decreased at-risk-of-poverty from 20 to 17.5 %. The second point becomes evident from the cross-national comparison. 17.5 % is still comparatively high for an advanced economy, and in the other three countries, the social security system shows a much more substantial poverty prevention impact of social programs, in the U.K. in particular. Although, in these three countries, other social programs are much more relevant for at-risk-of-poverty reduction – the additional payment of family benefits is only one component among others. It is worth noting that all three countries show that in the time of the COVID crisis in 2020 and 2021, other social programs have created an increased at-risk-of-poverty reduction. Hence, the additional family transfers become less critical for the reduction but remain relevant.

There are various caveats to acknowledge. I will focus on two main points: 1) the methodology of relative at-risk-of-poverty and 2) the limitations of an aggregated perspective.

First, related to the methodology, since the measure is relative to the societal mean, it is also always connected to the economic cycle. Thus, e.g., the higher the wages and disposable income increase, the higher the threshold for at-risk-of-poverty. Income increases at the lower end of the income distribution that are lower than the average increase may lead to a higher proportion of persons below the threshold. At the same time, this increase cannot be interpreted as a percentage increase of individuals in hardship; the measure simply refers to well-being compared to the median. Even the lower increases at the bottom during an economic boom refer to progress in well-being. The increase in at-risk-of-poverty is counterintuitive to this. However, it should be noted that in cross-national comparisons, relative at-risk-of-poverty rates have one striking advantage: they are internationally comparable. In contrast, alternative national absolute poverty lines might better capture progress, but they may lack international comparability.

Fig. 1. Relative at-risk-of-poverty rates before and after social transfers

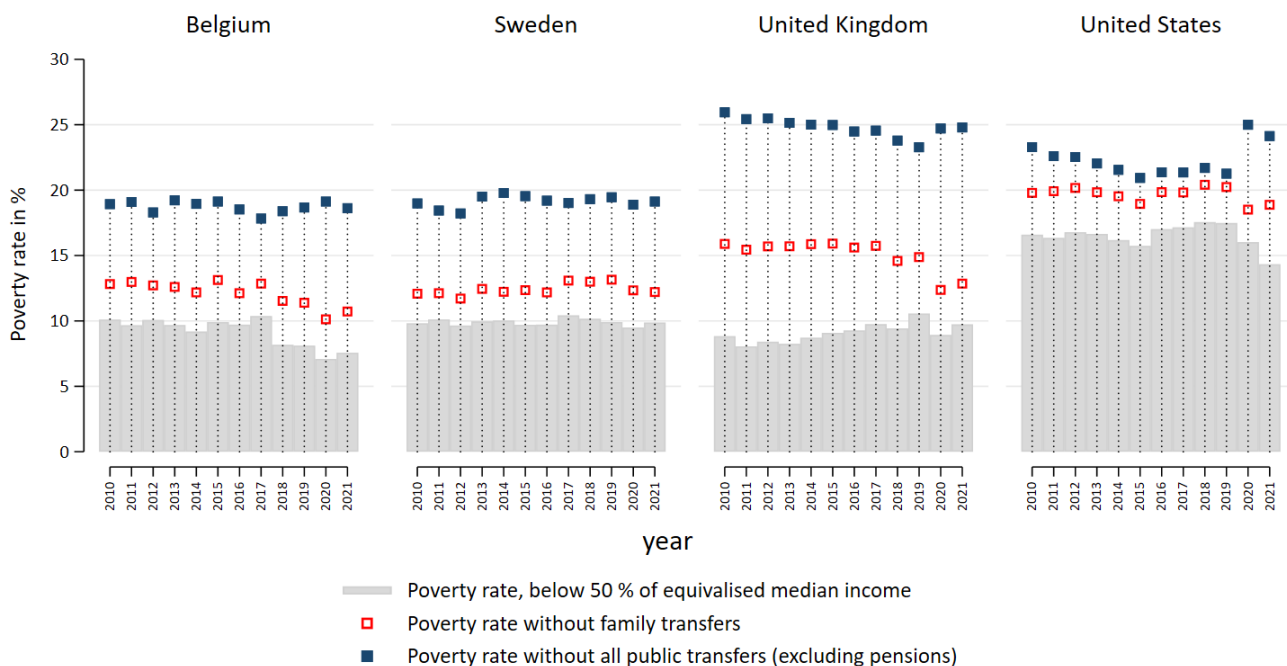
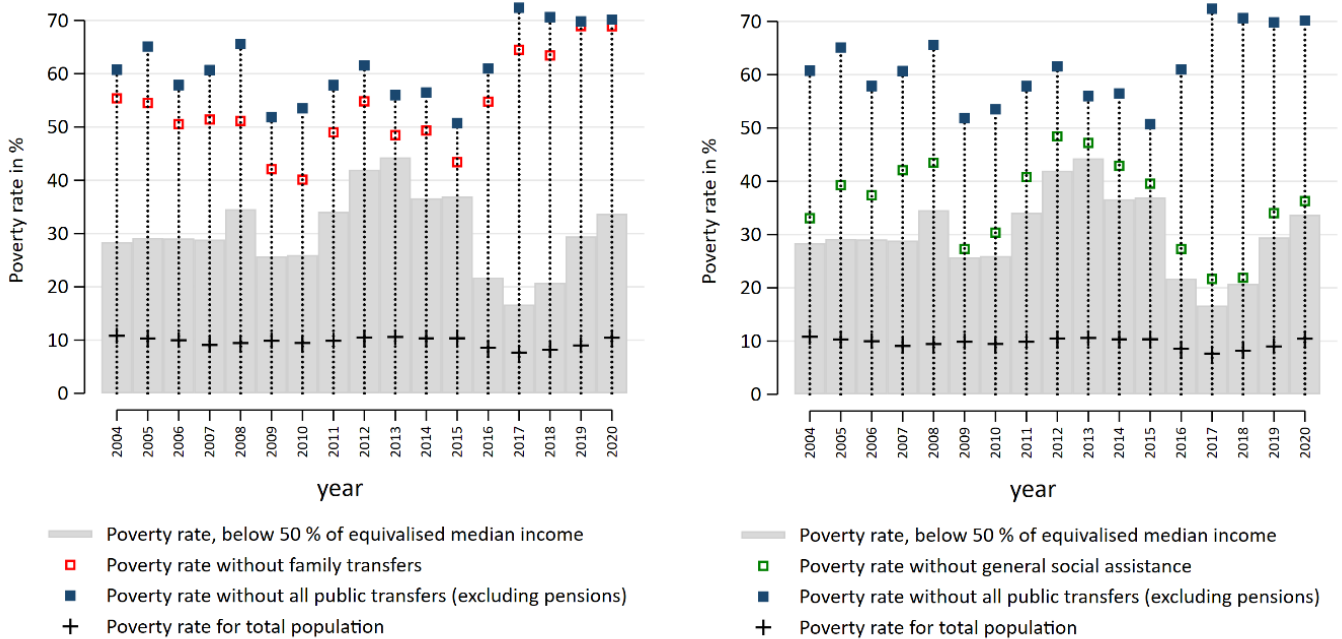


Fig. 2. Single-parent households: an illustration of Poland



Second, the aggregated perspective has its limitations. A more general point relates to a clear understanding of who is lifted out of at-risk-of-poverty and who remains even poor after receiving one or more transfers. Thus, the curious analyst might want to study concurrent payments and social profiles simultaneously. How do certain benefits protect certain risk groups? What are the social characteristics of the ones who are not protected? Are they not eligible for any social benefits? Also, some benefit packages might work well, as they have been designed to be paid cumulatively, whereas others might be limited as they do not allow concurrent reciprocity. These policy needs shift the requirements for an informative visualization tool from a broad country comparison toward a dashboard of a two-country comparison, containing the joint study of various elements at the same time, e.g., reciprocity patterns of benefits for sub-population groups and possibly by other socio-demographic criteria such as age, labor force status, and immigration background. There is a wide variety of selection parameters to incorporate for a powerful and informative comparison tool if one wants to zoom in to understand what social program packages work best and why.

**4. Relative at-risk-of-poverty rates – single parents in Poland**

Figure 2 illustrates the additional value of analyzing social transfers in a subpopulation setting. This is shown by restricting the sample to single-parent households. Single parents are defined here as one parent living only with their own or adopted non-adult children (below 18 years of age) without other adults in the household; these persons may or may not have partners in other households (typically not distinguishable in the source data). The case of Poland was chosen due to a rather substantial change in family policy implemented in 2016; the new program *Family 500+* introduced transformed assistance-based benefits into universal child benefits (Paradowski et al., 2020).

First, how to read the data. The grey bar in this figure now refers to the at-risk-of-poverty rate among single-parent households, where each member is considered at-risk-of-poverty when their equivalised income is below the societal median. A black cross has been added which refers to the at-risk-of-poverty rate among the entire society. The partial effect

of family transfers is shown on the left-hand side and the one of general assistance on the right-hand side.

Figure 2 supports that the defined risk group of Polish single parents has a substantially higher at-risk-of-poverty rate. Not surprisingly, family benefits are a significant element in the reduction of at-risk-of-poverty among single parents. However, in addition, social assistance benefits play a role to some extent. Figure 2 mirrors the effect of the new universal program *Family 500+* in reducing the risk of poverty among single parents for the following years. At the same time, single parents more and more depend on the existence of the program, as removing family benefits from disposable income would lead to at-risk-of-poverty rates beyond 70 % since 2017. This indicates that single parents achieve now less poverty prevention through market income before social transfers than before the reform. Again, it would be very relevant to understand better the social background of the single parents who receive those family benefits. Have they reduced their inclusion in the labor market? What are the socio-demographic characteristics of the ones who remained poor after receiving the benefits? Could there still be an argument to complement family assistance with further means-tested social assistance?

**5. Interim conclusion**

To conclude this first part on relative measures, I want to stress the variety of valuable analyses that can be carried out with the currently available quantity of microdata across countries. Relative at-risk-of-poverty rates do not measure poverty directly, however, the numbers can raise concerns about action, as they indicate that specific risk profiles fall short when compared to the median standard in a country. When we compare relative at-risk-of-poverty over time, we get a better idea of how things have changed for vulnerable groups and how policies have made a difference. The time and cross-country dimensions also give valuable information about policy intervention and the behavioral consequences of persons adapting to these changes in the short- and mid-term. A powerful visualization tool with several clear options to explore the data seems a valuable addition in this regard.

With this interim conclusion, motivation is made that not only one indicator should be examined to analyze well-being. Notably, the effectiveness of social transfers in eradicating absolute poverty should be studied in parallel. Thus, a second article (to be released in June 2024 in *Inequality Matters*) will discuss the potential contributions and drawbacks of analyzing poverty with a methodology of absolute poverty lines.

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Monetary Policy, Housing and Inequality

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Introduction

Research on the effects of monetary policy is increasingly focusing on areas outside the classic suspects of interest, output and inflation. Especially since the more frequent use of unconventional monetary policy instruments such as large-scale asset purchases, there have been discussions about adverse effects of this unprecedented market interventions on specific markets such as housing markets as well as on inequality. Does monetary policy affect households on certain parts of the wealth distribution more than others? This note emphasizes the channels through which monetary policy influences housing markets and inequality, their interplay, and how these topics are not only "innocent bystanders" (Coibion et al., 2017) of monetary policy but also shape how monetary policy is transmitted to the economy.

Monetary Policy and Housing

The connection between monetary policy and prices in housing markets has been under increasing interest of both academics (Taylor, 2007; Jordà et al., 2015) and policy-makers (Bernanke et al., 2010), especially since the prominent role the housing market played in the Great Financial Crisis of 2008. In a nutshell, the main nexus can be summarized as follows: Interest rate movements influence agents' decision-making and, therefore, have an effect on real estate prices. Specifically, a reduction in interest rates (caused, for example, by lower policy rates set by the central bank) decreases the cost of borrowing and increases the demand for housing. Since housing supply is inelastic in the short run, only prices can react, so the altered demand for housing leads to a rise in house prices. Hence, expansionary monetary policy in the form of lower interest rates is expected to lead to house price growth.

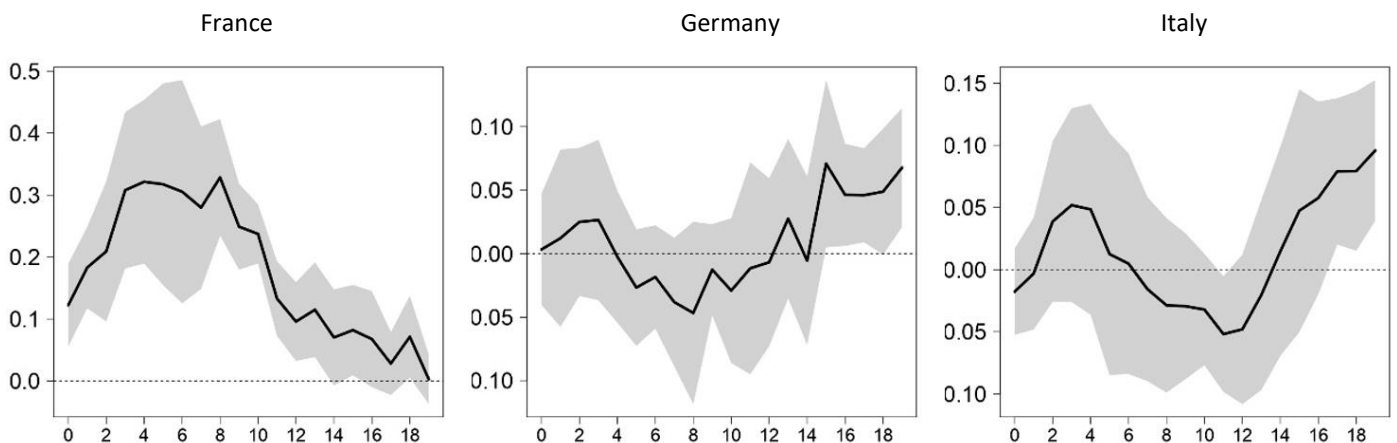
This theoretical reasoning has been supported by empirical research, such as Jordà et al., 2015 for advanced economies. These findings are not limited to interest rate policies (*conventional* monetary policy), but also *unconventional* monetary policy such as asset purchase programmes: Figure 1 shows recent estimates from local projections using high-frequency identified quantitative easing shocks from De Luigi et al. (2023). This method uses high-frequency financial data around

press conferences of monetary policy decisions by the European Central Bank to identify pure monetary policy surprises in the data as opposed to monetary policy actions that might have been expected and are already priced in. These identified monetary policy shock series are then used to gauge the effect on house prices in a local projection framework.

The results in Figure 1 show how an expansionary quantitative easing shock leads to increases in house prices. The results highlight a central feature in understanding how monetary policy impacts housing markets: There is considerable heterogeneity in the transmission of monetary policy to housing prices. While in France, expansionary monetary policy leads to an immediate, positive and sizeable shock on housing prices, the effects in Germany and Italy are more back-loaded and muted. Similar results are found by Rahal (2016), who finds increasing house prices to expansionary easing and considerable heterogeneity in country-specific impulse responses. Going beyond the country-level, there is also evidence of monetary policy heterogeneity at the regional level, see Flora and Klarl (2024) for Germany.

Given the importance of the housing market for households, in upcoming work, Poyntner and Waihl (2024) use a survey experiment to assess how households view the relationship between monetary policy and housing prices.<sup>1</sup> Regarding the understanding of monetary policy actions, we see that conventional monetary policy (interest rate setting) is generally well understood in the European countries we survey. However, the understanding of unconventional monetary policy is very limited. Moving to house price reactions to interest rate movements, we find that survey participants overwhelmingly associate decreasing interest rates with rising house prices, as predicted by theory. When confronted with information about this connection, respondents are willing to update their answers when the information comes from academic economists but are more reluctant to do so when the information comes from a central banker. These findings have important ramifications for the communication of monetary policy, financial literacy and the transmission of monetary policy.

Figure 1. Responses of house price growth to quantitative easing



Notes: The figure shows impulse responses of the quarter-on-quarter house price growth rate (in percentage points) to an expansionary quantitative easing shock. Bounds respond to 90% confidence intervals.

Source: De Luigi et al. (2023)



### Housing and Inequality

For most households, housing wealth is the most important component of their balance sheet. However, there is considerable heterogeneity in household wealth distribution between countries. Using data from the Household Finance and Consumption Survey (HFCS), property wealth of households can be compared between countries. In Austria and Germany, for instance, property wealth is negligible for the average household in the lower half of the wealth distribution, whereas in Italy and Spain, housing wealth is prominent in the lower part of the distribution as well De Luigi et al. (2023).

This reflects differences in housing markets regarding financing, ownership structure, and other factors. These differences govern the availability and relative prices of renting, buying, or public provision of housing. Data from the Luxembourg Wealth Study Database (LWS) show that in Germany, about 50% of households rent, while in Italy, only about 17%.

These differences in housing markets have important ramifications for the translation of monetary policy to household wealth: In countries where housing wealth is more evenly distributed, rising housing prices will potentially decrease wealth inequality, while in countries where property wealth is concentrated at the top of the distribution, house price increases will lead to higher wealth inequality. Given the importance of property assets for household wealth, the effects on the wealth distribution in this area are often quantitatively more important than those of financial asset price reactions to monetary policy. Equity price increases elevate wealth inequality across all euro area countries because they are concentrated at the top.

Taken together, it is both the differential initial distribution of housing wealth in the first place and the heterogeneous effect of monetary policy on house prices that make monetary policy transmission to inequality through asset prices a highly granular matter, posing challenges, especially for the Eurozone, where the same monetary policy stance can have possibly significantly different effects for different regions as well as population strata.

### Implications

These findings are not only interesting for research on inequality but also are influential for the transmission of monetary policy. There is considerable heterogeneity in the transmission of monetary policy in euro-area countries. Corsetti et al. (2020) show that differences in housing markets contribute significantly to this heterogeneity. Specifically, differences in mortgage market characteristics can explain one-third of the differences in the transmission of monetary policy to output and consumption. In recent models incorporating household heterogeneity (Kaplan et al., 2018), households' liquid and illiquid wealth positions play a key role for the propensity to consume and consequently the transmission of monetary policy.

<sup>1</sup> Please contact the authors before quoting.

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## Data News / Data Release Schedule



### LIS is happy to announce the following data updates:

- Austria** (1 new LIS dataset, 1 new LWS dataset & 3 revised) – Addition of **AT21** to the LIS Database and **AT21** to the LWS Database
- Brazil** (10 new & 11 revised) – Additional annualisation from **BR01** to **BR15** in the LIS Database
- Colombia** (2 new) – Addition of **CO21** & **CO22** to the LIS Database
- Denmark** (7 new LIS datasets & 1 revised, 8 new LWS datasets) – Annualisation from **DK15** to **DK22** in the LIS & LWS Database
- Germany** (1 new & 36 revised) – Addition of **DE20** to the LIS Database
- Ireland** (2 new & 18 revised) – Addition of **IE20** and **IE21** to the LIS Database
- Netherlands** (10 new & 8 revised) – Annualisation from **NL04** to **NL21** in the LIS Database
- Peru** (1 new & 16 revised) – Addition of **PE21** to the LIS Database
- Romania** (1 new & 15 revised) – Addition of **RO21** to the LIS Database
- Russia** (2 new & 12 revised) – Addition of **RU20** and **RU21** to the LIS Database
- Slovakia** (1 new & 3 revised) – Addition of **SK21** to the LWS Database
- South Korea** (5 new LIS datasets & 1 revised, 6 new LWS datasets) Annualisation from **KR16** to **KR21** in the LIS Database  
and from **KR17** to **KR22** in the LWS Database
- Spain** (1 new) – Addition of **ES21** to the LWS Database
- United States** (1 new LIS dataset & 1 revised, 1 new LWS dataset) – Addition of **US22** to the LIS Database and **US22** to the LWS

### Data Releases and Revisions– Luxembourg Income Study (LIS)

#### Austria

One new dataset from Austria has been added to the LIS Database. The new dataset **AT21** is based on the Austrian Survey on Income and Living Conditions (EU-SILC) carried out by [Statistics Austria](#).

#### Brazil

Ten new datasets from Brazil have been added to the LIS Database, namely **BR01**, **BR02**, **BR03**, **BR04**, **BR05**, **BR07**, **BR08**, **BR12**, **BR14**, **BR15**, completing the annualization of the series from 2001 to 2022 (with the exception of 2010, year in which the survey was not carried out because of the Census). All of the datasets come from the corresponding waves of data of the National Household Sample Survey (PNAD) from the [Brazilian Geographical and Statistical Institute](#). In addition, the datasets **BR16** to **BR22** have been corrected for a minor update of the simulation outcomes of secondary employment.

#### Colombia

Two new datasets from Colombia have been added to the LIS Database (**CO21** and **CO22**). While both datasets are based on the Great Integrated Household Survey / Gran Encuesta Integrada de Hogares (GEIH) carried out by the [National Administrative Department of Statistics / Departamento Administrativo Nacional de Estadística \(DANE\)](#), starting from **CO22** the GEIH is based on the latest 2018 Census (henceforth referred to as GEIH-M18) implying a new methodology in terms of sampling, weighing and the collection of several labour market and income items.

#### Denmark

LIS has released a first set of annual data for Denmark in the LIS Database. The seven new datasets, namely **DK15**, **DK17**, **DK18**, **DK19**, **DK20**, **DK21** and **DK22**, are the result of a close collaboration with [Statistics Denmark](#), who extracted the data from the Income and

other Administrative Registers of the country and partly directly created already harmonised variables based on the registers. The data point for **DK16**, which was previously on-line, was fully replaced by the data newly extracted from the registers.

#### Germany

One new dataset from Germany, **DE20**, has been added to the LIS Database. The dataset is from the 2023 data release (v38.1eu) of the German Socio-Economic Panel (GSOEP) carried out by the [German Institute for Economic Research \(DIW\)](#).

Alongside this update, the previous datasets from the GSOEP series **DE84-DE19** have been updated to reflect the improvements in the latest version v38.1eu by DIW, mostly concerning the update of the imputation of incomes for non-respondents, based on the newly available data point **DE20**.

#### Ireland

LIS has added two more data points, **IE20** and **IE21** to the LIS Database. The datasets are based on the Survey on Income and Living Conditions / EU-SILC, and received from Ireland's [Central Statistics Office \(CSO\)](#). In addition, a few consistency revisions have been carried out to the datasets **IE02** to **IE19**. Return to the country has been removed from the scope of the variable *ysresid* (years since arrived in country), this means that the variable is not defined for persons who were born in the country in the LIS database. Additionally, the universe of *ysresid* and *immigr* has been restricted to persons 16 years or older, as country of birth is not available for persons below 16 for these data points. For variable *own* (owned/rented housing) the split between owners with mortgage and those without it is now provided for **IE02** to **IE09** as well, based on whether they paid interests on mortgage or not in the income reference year. Variable *hxmort* (mortgage instalment) is not provided anymore for **IE02** to **IE09** because mortgage repayments are not available in the data, only mortgage interests.

### Netherlands

Ten new datasets from the Netherlands, namely **NL05**, **NL06**, **NL08**, **NL09**, **NL11**, **NL12**, **NL14**, **NL19**, **NL20**, and **NL21**, from the Dutch Survey on Income and Living Conditions (SILC) provided by [Statistics Netherlands](#) have been added to the LIS Database, hence completing the annualization of the series from 2004 to 2021. In addition, the whole series based on SILC (from **NL04** onwards) was revised, implying several changes to make it fully consistent over time. This had major implications for **NL04** (which had been initially harmonised in a previous template), followed by **NL07**, **NL10** and to a lesser extent **NL13**. For the latter part of the series (**NL15** onwards) the changes were minimal. The changes concern the filling of some new variables (notably for **NL04**), the uniformization of the universe of several variables, the uniformization of the country-specific coding of *educ\_c*, *ind1\_c* and *occ1\_c*, some marginal corrections/improvements of socio-economic categorical variables, as well as some minor modifications to the income, expenditures and consumption variables (mostly concerning different placements of the amounts).

### Peru

One new dataset from Peru, **PE21**, has been added to the LIS Database. The dataset is from the National Household Survey (ENAHO) carried out by the [National Institute of Statistics and Informatics \(INEI\)](#) of Peru. Minor consistency corrections were applied to **PE04** to **PE19**. Contents of *hi41* (family benefits) have been restricted to 'Transfers from *programa juntos*', before various other transfers from public and private institutions were included as well.

### Romania

One new dataset from Romania, **RO21**, has been added to the LIS Database. The dataset is based on the Quality of Life Survey (ACAV) from which is derived the Romanian Survey on Income and Living Conditions (SILC), and is provided by the [Romanian National Institute of Statistics \(INSSE\)](#). In addition, the education section in **RO20** was revised. The National Institute of Statistics Romania kindly provided LIS an updated version for the highest education level attained. This update better separates upper secondary from post-secondary non-tertiary degrees. The revision affects the following LIS variables *educ\_c*, *educlev*, *edys*, and *educ*, the latter to a minor extent.

### Russia

Two new datasets from Russia have been added to the LIS Database (**RU20** and **RU21**). The datasets are based on the Survey of the Population Income and participation in Social programs (PIS) carried out by the [Federal State Statistics Service \(Rosstat\)](#). In addition, a few consistency corrections were carried out. For the datasets **RU17** to **RU19** around 300 household members were added to the files, leading to subsequent changes in the household composition. Since therefore also the household size changes in these households, this also affects slightly the LIS Key Figures, but to a negligible extent. For the entire Russian data series variable *marital* (marital status) has been reviewed, in order to consider previously married couples in code 200 (not married/not in union).

### South Korea

LIS has released new data for South Korea in the LIS Database, leading to a partial annualization of the country series for the period 2016 to 2021. The five new datasets, namely **KR17**, **KR18**, **KR19**, **KR20**, and **KR21**, are derived from the new Survey of Household Finances and

Living Conditions (SFLC), provided by [Statistics Korea \(KOSTAT\)](#). As advised by KOSTAT, the previously harmonised dataset **KR16** has been replaced by the new survey, which better captures income due to the direct link to register data.

### United States

One new dataset from the United States, **US22**, has been added to the LIS Database. The dataset is based on the Annual Social and Economic Supplement from the Current Population Survey (CPS-ASEC) as provided by the [Bureau of Labor Statistics \(BLS\) / U.S. Census Bureau](#). In addition, a minor revision was carried out to **US21**: as part of the COVID measures, the Child and Dependent Care Credit (CDCC) was made extraordinarily refundable for 2021 and was thus added to variable *pi41* (Family benefits). This has a modest impact on DHI and Key Figures.

## Data Releases and Revisions– Luxembourg Wealth Study (LWS)

### Austria

One new dataset, **AT21**, has been added to the LWS Database. The dataset is based on the Austrian Household Finance and Consumption Survey (HFCS) provided by [Austrian Central Bank of Austria \(Österreichische Nationalbank – OeNB\)](#). In addition, the following consistency revisions were carried out. Errors in the construction of variables *educlev/educ/edys* from the education section were corrected in **AT17**. For all prior datasets, the section on received inheritances and gifts (*pia/m/t/y1-4*) was reviewed.

### Denmark

Eight data points have been added to the LWS Database, **DK15**, **DK16**, **DK17**, **DK18**, **DK19**, **DK20**, **DK21** and **DK22**. This addition was made possible thanks to a close collaboration with [Statistics Denmark](#), who created the data from an extraction from the Wealth and other Administrative Registers of the country.

### Germany

The previous released datasets from the GSOEP series **DE02-DE17** have been updated to reflect the improvements in the latest version v38.1eu by DIW, mostly concerning the update of the imputation of incomes for non-respondents, based on the newly available data point **DE20** in LIS. The balance sheet amounts are not concerned by this update.

### Slovakia

A new dataset from Slovakia **SK21** has been added to the LWS Database. The dataset is based on the fourth wave of the Slovak Household and Finance Consumption Survey (HFCS) carried out by the [National Bank of Slovakia](#) and co-ordinated by the [Household Finance and Consumption Network \(HFCN\)](#) of the [European Central Bank \(ECB\)](#). In addition, for all prior datasets in the Slovakian series, the section on received inheritances and gifts (*pia/m/t/y1-4*) was reviewed. Variable *ppy* (year of purchase of principal residence) is now also available in **SK10** and **SK14**.

### South Korea

Six data points have been added to the LWS Database, **KR17**, **KR18**, **KR19**, **KR20**, **KR21** and **KR22**. The data are based on the new Survey of Household Finances and Living Conditions (SFLC), provided by [Statistics Korea \(KOSTAT\)](#).

**Spain**

One more dataset, **ES21**, based on the Survey of Household Finances (EFF) acquired from **Bank of Spain** has been added to the LWS Database.

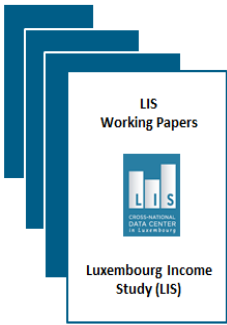
**United States**

One new dataset, **US22**, has been added to the LWS Database. This dataset is based on the 2022 wave of the Survey of Consumer Finances (SCF) carried out by **Board of Governors of the Federal Reserve System**.

**LIS/LWS Data Release Schedule**

	Summer 2024	Autumn 2024
<b>LIS Database</b>		
Australia	AU20	
Brazil	BR81-BR99	
Canada	CA20	
Colombia	CO23	
France	FR19, FR20	
Greece		GR03-GR21
Luxembourg	LU20, LU21	
Serbia	RS06-RS22	
<b>LWS Database</b>		
Chile		CL21
Mexico		MX19
Sweden		SE97-SE07
Uruguay		UY12, UY13

## Working Papers & Publications



Focus on **Wealth Inequality and Stratification by Social Classes in 21st-Century Europe**  LWS WP No. 43 by Carlos J. Gil-Hernández (Joint Research Centre, European Commission, Seville), Pedro Salas-Rojo (International Inequalities Institute, London School of Economics and Political Science), Guillem Vidal-Lorda (Joint Research Centre, European Commission, Seville), Davide Villani (Joint Research Centre, European Commission, Seville)

Wealth is a central determinant of life chances and intergenerational status persistence in modern societies. Yet, sociologists traditionally overlooked its role in class measurement and inequality, while most economists focused on the elites. This article reconciles sociological and economic perspectives on class analysis by examining the relationship between classes and wealth inequality versus income. Drawing from the Luxembourg Wealth Study (2002-2018) in five European countries, the authors test whether occupational classes, based on the entire division of labour, keep up with rising economic inequality trends. In contrast to bold claims on class death or decomposition, inequality of outcomes in wealth accumulation is firmly rooted across occupational classes in contemporary capitalism, potentially harming future equal opportunity and social mobility. Still, occupational classes better capture between-group income inequality and stratification than wealth, emphasising the importance of economic resources beyond labour market attachment that spark advances in social class theory and measurement.

### LIS working papers series

#### LIS working papers series - No. 875

**Governing in Volatile Times: Government Performance and Trust in Public Managers**

by David Jesuit

A revised version of this paper is published as Jesuit, David K. (2014), "Chapter 10: Inequality, Government Performance and Trust in Public Managers" in *Governance and Public Management: Strategic Foundations for Volatile Times*, edited by Charles Conteh, Thomas Greitens, David K. Jesuit and Ian Roberge, 131-151. Milton Park, UK: Routledge, ISBN 9781138495579.

#### LIS working papers series - No. 876

**The Role of Public Administration in an Era of Rising Income Inequality and Declining Trust in Government and Each Other**

by David Jesuit, J. Cherie Strachan

#### LIS working papers series - No. 877

**A Comparative Analysis of Household Incomes of People with Different Levels of Education in Poland and the USA**

by Kamila Trzcińska, Elżbieta Zalewska

A revised version of this paper is published in *Folia Oeconomica Stetinensia*, 23, no.2 (2023): 387-401. <https://doi.org/10.2478/fofi-2023-0037>

#### LIS working papers series - No. 878

**Analysis of the Gender Gap in the Visegrád Group Countries Based on Luxembourg Income Study**

by Alina Jędrzejczak, Kamila Trzcińska

Published in *Comparative Economic Research*. Central and Eastern Europe, 26, no.4, (2023). <https://doi.org/10.18778/1508-2008.26.30>

#### LIS working papers series - No. 879

**Making Growth Inclusive? Do Government Transfers Moderate the Effect of Economic Growth on Absolute and Relative Child Poverty?**

by Sebastian Sirén

Published in *Global Social Policy*. November 18, 2023.

<https://doi.org/10.1177/1468018123120537>

#### LIS working papers series - No. 880

**Inequality Within Countries is Falling: Underreporting-Robust Estimates of World Poverty, Inequality and the Global Distribution of Income**

by Maxim Pinkovskiy, Xavier Sala-i-Martin, Kasey Chatterji-Len, William Nober

### LWS working papers series

#### LWS working papers series - No. 42

**What Makes a Household Wealthy? Is it Reckless Risk-Taking or Careful Planning?**

by Ivan Skliarov, Łukasz Goczek

#### LWS working papers series - No. 43

**Wealth Inequality and Stratification by Social Classes in 21st-Century Europe**

by Carlos J. Gil-Hernández, Pedro Salas-Rojo, Guillem Vidal-Lorda, Davide Villani

### Technical working papers series

#### Technical working papers series - No. 12

**Harmonization and Quality Assurance of Income and Wealth Data: The Case of LIS**

by Jörg Neugschwender, Teresa Munzi, Piotr Paradowski

A revised version was published as "Harmonization and Quality Assurance of Income and Wealth Data: The Case of LIS", in *Survey Data Harmonization in the Social Sciences*, edited by Irina Tomescu-Dubrow, Christof Wolf, Kazimierz M. Slomczynski, and J. Craig Jenkins, Chapter 15, pp. 269-284. Wiley, 2024. <https://doi.org/10.1002/9781119712206.ch15>

#### Technical working papers series - No. 13

**Pluralist View on Inequality from Luxembourg Income Study (LIS)**

by Daniele Checchi, Piotr Paradowski

Published: Checchi, Daniele, and Piotr R. Paradowski (2024), "Pluralist View on Inequality from Luxembourg Income Study (LIS)" in *Oxford Handbook of Engaged Methodological Pluralism in Political Science (Vol 1)*, edited by Janet M. Box-Steffensmeier, Dino P. Christenson, and Valeria Sinclair-Chapman, Oxford University Press, ISBN: 9780192868282,

<https://doi.org/10.1093/oxfordhb/9780192868282.013.57>

## News, Events and Updates

### Applications to the LIS Introductory Workshop, 01-05 July 2024 are Now Open!

LIS is excited to announce that the application to its Summer Introductory Workshop is now open. This year's workshop marks the 32nd edition after the first workshop took place in 1988. For the fifth time, LIS, the University of Luxembourg, and LISER will jointly organize and teach the workshop on “**Comparative Inequality Measurement using the LIS & LWS Databases**”. This workshop is a one-week intensive course designed to introduce researchers in the social sciences to comparative research on income and wealth distribution, employment and social policy, using the harmonised Luxembourg Income Study (LIS) and Luxembourg Wealth Study (LWS) databases. The workshop will be held at the University of Luxembourg, Belval Campus, Esch-sur-Alzette, Luxembourg from 01-05 of July 2024.

For more details about the workshop programme and practical information, please visit the [workshop page](#).

Applications should be submitted online through this [application form](#) by **April 12, 2024**. For questions and inquiries, please write to [workshop@lisdatacenter.org](mailto:workshop@lisdatacenter.org).

### (LIS)<sup>2</sup>ER Research Associate (Post-doc, f/m) – Ref: 24-05

LIS and the Luxembourg Institute of Socio-Economic Research (LISER) are recruiting a Research Associate (Post-doc, f/m)

- 2 years fixed-term contract, full-time (40h/week)
- Joint position at LIS and LISER
- Work location: Belval (Luxembourg)
- Expected Start date: ideally on 1st June 2024, not later than 1st October 2024

The research associate will be tasked to:

- Develop the (LIS)<sup>2</sup>ER project as described above – notably by undertaking innovative research, co-organizing events and attending to LIS-LISER visitors;
- Develop a distinctive research program in collaboration with researchers from LIS and LISER;
- Disseminate results through scientific publications and reports;
- Contribute to the submission of research proposals;
- Attend scientific conferences and workshops.

#### Profile

- Ph.D. in Economics, Sociology, Political sciences or other relevant discipline;
- Expertise in income/wealth inequality and poverty research, as well as knowledge of cross-country policy differences (welfare policies, labour market regulation, educational policies);
- Extensive experience in quantitative research (possibly including policy evaluation or computational data driven methods);
- Fluency in English (speaking and writing), any other language is considered as an asset.

More information about the position and how to apply is available [here](#).

### United Nations Statistical Commission Side Event: The Luxembourg Income Study: 40 Years of Data, Research, and Beyond

On the 29th of February, the Permanent Mission of Luxembourg to the United Nations and LIS have organised a side event to the 55th session of the United Nations Statistical Commission:

#### The Luxembourg Income Study: 40 Years of Data, Research, and Beyond – Ensuring free access to the LIS Data for United Nations Agencies.

Organised at the beautiful Luxembourg House in New York in collaboration with the US Satellite Office of LIS, the event aimed to increase the utilisation of the resources provided by the Luxembourg Income Study (LIS) among the staff of the United Nations entities, who have the opportunity to access it at no cost thanks to a generous contribution from the Department of Cooperation of the Luxembourg Ministry of Foreign Affairs. By providing insights into the LIS data, the event thus increased awareness and understanding of the extensive research opportunities available through the LIS datasets across various fields.

The event featured the following speakers:

- Janet Gornick, Director of the Stone Center on Socio-Economic Inequality - Home to the US Satellite Office of LIS: Presentation on LIS and research with LIS data
- Marta Roig, Chief of the Emerging Issues and Trends in Development Section, Department for Economic and Social Affairs, United Nations: Presentation on Age and gender-based poverty gaps. Are older persons left behind?
- Heriberto Tapia, Research and Strategic Partnership Advisor, Human Development Report Office of the United Nations Development Programme: Presentation on Evidence from the Human Development Report



From left to right: Teresa Munzi (Director of Operations, LIS), Janet Gornick (Director, the Stone Center on Socio-Economic Inequality, home to the U.S. Office of LIS), Olivier Maes (Ambassador, Permanent Representative of Luxembourg to the United Nations), and Jil Haentges (First Secretary, Permanent Mission of Luxembourg to the United Nations).

A lively discussion closed the event, which was attended by staffs of various UN entities, among which UN DESA, UNDP, UN-Women, UNICEF, UNESCO, UNFPA, UNEP, ECLAC, ESCWA, as well as the World Bank and post-doctoral scholars from the Stone Center on Socio-Economic Inequality.

More information about the event is available [here](#).

### Microdata in Europe: The Way Forward

On December 8-9, Teresa Munzi (LIS Director of Operations) attended the [CEPR Paris Symposium 2023](#) and participated to a panel on "Microdata in Europe: The Way Forward" aimed at providing insights as to how to foster better cross-country microdata availability, and how the various actors can join forces to avoid duplication and maximize ultimate impact. The panel was chaired by Ugo Panizza (Geneva Graduate Institute) and Filippo di Mauro (CompNet), and thepanellists included, alongside Teresa, Tito Boeri (Bocconi University), Pierre-Olivier Gourinchas (IMF), and Filiz Unsal (OECD). The panel recording is available [here](#).

### LIS Team Makes Notable Contributions to Two Newly Published Edited Volumes

The LIS Team has made significant contributions to two newly published edited volumes.

- In the *Survey Data Harmonization in the Social Sciences*, a publication by Wiley, Jörg Neugschwender, Teresa Munzi, and Piotr R. Paradowski authored Chapter 15, titled "Harmonization and Quality Assurance of Income and Wealth Data: The Case of LIS."
- Furthermore, Daniele Checchi and Piotr R. Paradowski co-authored a chapter titled "[Pluralist View on Inequality from Luxembourg Income Study \(LIS\)](#)" as part of the *Oxford Handbook of Engaged Methodological Pluralism in Political Science (Volume 1)*.

### LIS Participation at the Winter School on Inequality and Social Welfare Theory

Peter Lanjouw and Teresa Munzi attended the 17th Winter School on Inequality and Social Welfare Theory, which was held in Alba di Canazei (Italy) from January 8th to 11th. Peter presented results from imputation-based poverty comparisons, and revisited the "great Indian poverty debate", while Teresa provided an overview of the types of research that can be done with LIS data and highlighted various research opportunities at LIS - notably through the (LIS)<sup>2</sup>ER programme.