

Gärtner, Manja; Mollerstrom, Johanna

**Article**

## Risk aversion and other factors determine income redistribution preferences

DIW Weekly Report

**Provided in Cooperation with:**

German Institute for Economic Research (DIW Berlin)

*Suggested Citation:* Gärtner, Manja; Mollerstrom, Johanna (2018) : Risk aversion and other factors determine income redistribution preferences, DIW Weekly Report, ISSN 2568-7697, Deutsches Institut für Wirtschaftsforschung (DIW), Berlin, Vol. 8, Iss. 17/18, pp. 151-156

This Version is available at:

<https://hdl.handle.net/10419/179677>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

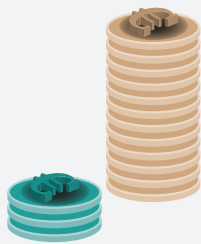
## AT A GLANCE

# Risk aversion and other factors determine income redistribution preferences

By Manja Gärtner and Johanna Mollerstrom

- Characteristics such as gender, age, income, and attitude towards fairness determine how much income redistribution people prefer in a society
- This study examines the correlation between risk tolerance and redistribution preferences for the first time with the help of a representative survey
- On average, people who are very risk averse want more redistribution
- These findings inform policymakers about which groups support which policies

## Who is in favor of more stronger income redistribution?



People with lower incomes more than people with high incomes.



People who believe in luck rather than effort more than those who believe the opposite.



The older more than the youth.



Women more than men.



People who tend to avoid risk more than those prone to taking risks.

Quelle: Authors' own depiction.

© DIW Berlin 2018

## FROM THE AUTHORS

*“Our study shows that high risk aversion is associated with a stronger preference for redistribution in society. This result indicates that people view income redistribution as an insurance against future loss of income. This insurance is most important to those who are less willing to take risks.”*

— Manja Gärtner —

## MEDIATHEK



Audio Interview with Manja Gärtner  
[www.diw.de/mediathek](http://www.diw.de/mediathek)

# Risk aversion and other factors determine income redistribution preferences

By Manja Gärtner and Johanna Mollerstrom

## ABSTRACT

The amount of redistribution people favor depends on socioeconomic factors and their views on fairness. This study, based on a representative survey conducted in Sweden, confirms earlier results: Higher incomes are correlated with wanting less redistribution, women are more in favor of redistribution than men on average, and older people favor it more than younger people. People's views on fairness and altruism also play a role. The study also shows for the first time that individual differences in risk aversion correlate with redistributive preferences. People who shy away from risk tend to wish for more redistribution than people who are more prone to taking risks. The results help us understand which policies are supported by which segments of the population.

Income redistribution is an important task of the welfare state. The extent of redistribution has always been a divisive topic in politics and is continually discussed, especially during election season. Using surveys and experiments, empirical economic research can offer answers to the following question: What individual factors actually influence how much redistribution people are in favor of and find fair?

Individual preferences for a certain amount of redistribution correlate with which party one votes for. People who are in favor of more redistribution tend to vote for parties left of the middle.<sup>1</sup> Knowing what factors determine redistributive preferences helps us to better understand societal trends and social policy demands. For policymakers, it is not only helpful to know what kind of welfare state the people want, but also which voters support their policies.

An extensive and highly regarded study has summarized previous literature findings and supplemented them with new results from many different countries.<sup>2</sup> It shows that on average, a higher income is associated with a lower preference for income redistribution. Yet even when one controls for income differences, the redistributive preferences vary according to individual characteristics. For example, women tend to prefer more redistribution. In addition to socioeconomic characteristics, individual views on the common good and fairness correlate with how much redistribution is considered fair. The more altruistic a person is, the more redistribution they prefer on average. The more people believe that luck, not effort, is the determining factor for economic success, the more redistribution they prefer.<sup>3</sup>

However, previous studies have not yet shown if there is a statistical correlation between redistributive preferences and risk aversion. The theory that the two are correlated is based on the idea that income redistribution can also act

<sup>1</sup> See, for example, Manja Gärtner, Johanna Mollerstrom, and David Seim, "Individual risk preferences and the demand for redistribution," *Journal of Public Economics* 153 (2017): 49–55.

<sup>2</sup> See Alberto Alesina and Paolo Giuliano, "Preferences for redistribution," in *Handbook of Social Economics*, Vol. 1A, ed. Jess Benhabib, Alberto Bisin, and Matthew O. Jackson (The Netherlands: 2010), 93–131.

<sup>3</sup> See also Christina Fong, "Social preferences, self-interest, and the demand for redistribution," *Journal of Public Economics* 82 (2001): 225–246.

as individual insurance against future losses of income.<sup>4</sup> Accordingly, if a group of people are facing the same external risks, their preference for redistribution will increase the more risk averse they are.<sup>5</sup> This hypothesis was put to the test by means of a survey.

### The representative survey

The survey was carried out together with Statistics Sweden, the Swedish central bureau of statistics, and sent to 4,500 representative individuals. Overall, 1,565 people returned the survey and 1,365 people answered all of the questions necessary for the analysis.

Most important for this study, published in 2017, are the questions the participants answered which asked about their redistributive preferences, views on the significance of luck and effort for economic success, and willingness to take risks (Box). All participants also indicated their willingness to donate money, which is used as a measure of altruistic tendencies. Furthermore, information about participants' family background was collected. By working together with the central bureau of statistics, the survey was able to be supplemented by data from government statistics, such as age, gender, income, and wealth.

### Socioeconomic factors influence redistributive preferences

The correlation between redistributive preferences and the participants' socioeconomic characteristics was examined using a regression analysis. The results confirm earlier studies (Table 1). The average redistributive preference decreases significantly when incomes increase.

Assuming that an additional point on the measurement scale corresponds to ten percentage points more redistribution, women in this study prefer around five percentage points more redistribution than men on average (this corresponds to 20 percent of a standard deviation in the measurement of the redistributive preferences). This correlation could be explained by other socioeconomic variables—for example, women have lower incomes on average, and lower incomes are linked to higher redistributive preferences. If one controls for differences in age, marital status, the number of children in the household, education level, whether or not the participant is unemployed, and income and wealth, there is still a difference between the genders of about two percentage points which these variables cannot explain.

Furthermore, redistributive preference increases significantly with age. Accordingly, a 60-year-old prefers three percentage points more redistribution than a 20-year-old on

Table 1

### Correlations between socioeconomic variables and redistributive preferences

Dependent variable: redistributive preferences	(1)	(2)	(3)	(4)
Income	−0.000880*** (0.00034)			
Female		0.467*** (0.126)		
Age			0.0102** (0.00403)	
Working class				0.858*** (0.129)
Constant	5.409*** (0.0993)	4.977*** (0.0914)	4.740*** (0.192)	4.868*** (0.0787)
Observations	1365	1365	1365	1358
R <sup>2</sup>	0.013	0.010	0.005	0.032

Legend: Column 2 shows the difference in redistributive preference between men and women. The constant (4.977) shows male participants' average redistributive preference on a scale of zero to ten. The female coefficient indicates that, on average, female participants expressed a redistributive preference higher than men's by 0.467 points, around five percentage points.

Note: Regression analysis. Robust standard errors in parentheses.

Significance levels: \*\*\*p<0.01 \*\*p<0.05 \*p<0.1

Source: Authors' own calculations

© DIW Berlin 2018

average. This difference remains even when one considers gender, marital status, the number of children in the household, education level, unemployment, and income and assets.

Participants who indicate they come from a working class background prefer around nine percentage points more redistribution than participants from other social classes on average. There is a difference of about two percentage points even when gender, marital status, the number of children in the household, education level, unemployment, and income and wealth are taken into consideration.

### Altruism and views on fairness also play a role

Participants who indicated on the survey that they are willing to donate money ("altruists") prefer significantly more redistribution, even when one controls for other factors (Table 2). If people believe that their own effort, not luck, is what determines if a person is economically successful, they prefer significantly less redistribution. Accordingly, redistributive preference is reduced by about three percentage points for each additional point attributed to personal effort instead of luck after controlling for other socioeconomic factors.

### The risk averse prefer more redistribution

The survey measures risk aversion (Box). The analysis shows that risk averse participants prefer more redistribution on average, even when controlling for other factors (Table 2, Figure). A comparison of the effect sizes shows that an increase in risk aversion by one standard deviation has approximately the same effect on redistributive

<sup>4</sup> See the theories put forth by Allan Meltzer and Scott Richard, "A rational theory of the size of government," *Journal of Political Economics* (1981): 914–927; and Roland Benabou and Efe. A. Ok, "Social mobility and the demand for redistribution," *Quarterly Journal of Economics* (2001): 447–487.

<sup>5</sup> Gärtner et al. (2017), "Individual risk preferences and the demand for redistribution," presents a more detailed version of this report.

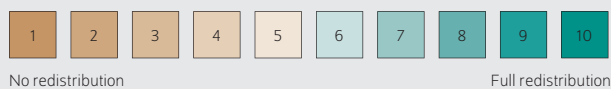
## Box

## Survey design

## Measure of income redistribution preferences

Using a scale of one to ten, participants marked a box indicating how much redistribution they want in society. It was explained that redistribution is a harmonization of all citizens' income using taxes and subsidies. The option "No distribution" refers to the case in which the state does not influence income redistribution whatsoever. The option "Full redistribution" refers to the case in which every citizen, after taxes and subsidies, has the same income.

How much economic redistribution do you want in society?



## Question on the significance of luck and effort for economic success

Using a scale of one to ten, all participants marked a box indicating if they believe it is luck or effort which determines if one is economically successful. The survey clarified that luck means having useful contacts, for example.

Is it mostly effort or luck that matters for how well an individual does economically in life?



## Question on willingness to donate

The survey used a hypothetical question to measure how willing participants are to donate money. Participants were asked to imagine that they had won 10,000 Swedish krona (around 1,100 euros at the time of the survey). Those who indicated they would donate a part of their winnings are labeled as altruists in our analysis.

If you were to win SEK 10 000, would you give anything to a charity?



How much of the SEK 10 000 would you give to charity?

I would donate \_\_\_\_\_ Swedish krona.

## Question on family background

The participants' family background was determined via self-assessment. The participants were able to choose between five social classes to describe how they grew up. The analysis uses an indicator variable and differentiates between participants who indicated they grew up in a working class household and those who selected a different class.

How would you classify yourself in terms of class at the time when you grew up?



## Question on risk aversion

The survey measured risk aversion using the standard method in experimental economic research.<sup>1</sup> The participants had to make a number of decisions between two alternatives. One option in every decision is a lottery where the participant has a 50 percent chance of winning 3,000 Swedish krona (around 330 euros at the time of the survey) and a 50 percent chance of winning nothing. The alternative is an amount of money that is guaranteed to be paid out and ranges between 500 Swedish krona (about 55 euros) and 2,500 krona (about 275 euros). The more often the secure payout is chosen instead of the lottery, the more risk averse the participant is. Accordingly, the variable for risk aversion used in the analysis has a value between zero (the lottery was chosen every time, the participant is very risk seeking) and eight (the secure option was chosen every time, the participant is very risk averse) for each participant. In this study, all payouts were hypothetical.

Please select an option in every row.  
(SEK = Swedish krona)

500 SEK for sure	1	2	50 percent chance of 3,000 SEK
1,000 SEK for sure	1	2	50 percent chance of 3,000 SEK
1,200 SEK for sure	1	2	50 percent chance of 3,000 SEK
1,400 SEK for sure	1	2	50 percent chance of 3,000 SEK
1,600 SEK for sure	1	2	50 percent chance of 3,000 SEK
1,800 SEK for sure	1	2	50 percent chance of 3,000 SEK
2,000 SEK for sure	1	2	50 percent chance of 3,000 SEK
2,500 SEK for sure	1	2	50 percent chance of 3,000 SEK

<sup>1</sup> See Charles A. Holt and Susan K. Laury, "Risk Aversion and Incentive Effects," *The American Economic Review* 92, no. 5 (2002): 1644-1655.

preferences as an increase of about 200,000 Swedish krona (ca. 22,000 euros) in yearly income. This new information helps us to better understand the redistributive preferences of different social groups.

Women, older participants, and people from a working class background tend to be more risk averse.<sup>6</sup> This study also shows that set factors such as gender and family background significantly influence risk aversion. We tested whether these differences in risk aversion could explain why these groups vary in their redistributive preferences. For example, women could prefer more redistribution than men because they are more risk averse on average. This hypothesis was tested using a mediation analysis. The evaluation shows that about 15 percent of the gender difference in redistributive preferences can be explained by the fact that women tend to be more risk averse than men. Risk aversion increases with age, and the results show that about 11 percent of the correlation between redistributive preferences and the age of the participants can be explained by increasing risk aversion. People from a working class background are more risk averse on average, although in this case, risk aversion cannot significantly explain the differences in redistributive preferences.

Overall, the result—that there is a correlation between risk aversion and redistributive preferences—suggests that people view income redistribution as insurance against future losses of income.

### Conclusion: preferences for redistribution depend on much more than just income

People have different preferences about the extent to which the welfare state should redistribute income. These preferences depend on specific, individual differences: Those with higher incomes prefer less distribution, women tend to prefer more redistribution than men, and people who are altruistic or believe that luck is more important than effort for economic success prefer more redistribution. This study shows that risk preference is an additional dimension: The less risk averse someone is, the less redistribution is preferred. The results also suggest that gender differences in risk aversion are one reason that on average, women prefer a larger welfare state and more left-wing parties than men do.<sup>7</sup>

Part of the factors determining redistributive preferences can be influenced. Hence, current debates and information campaigns addressing one of these factors could have a significant impact on how much redistribution people want. For example, current studies suggest that people change their

Table 2

### Regression analysis

Dependent variable: redistributive preferences	(1)	(2)	(3)
Altruist	0.261* (0.137)		
Effort matters most for economic success		-0.221*** (0.0420)	
Risk aversion			0.0860** (0.0351)
Constant	4.463*** (0.509)	5.914*** (0.564)	4.089*** (0.518)
Standard controls	Yes	Yes	Yes
Observations	1318	1322	1325
R <sup>2</sup>	0.090	0.111	0.091

Legend: The figure in column 1, line 1 indicates that the redistributive preference expressed by altruists on a scale of zero to ten is higher by 0.261 percentage points than the preference expressed by participants who are not altruists.

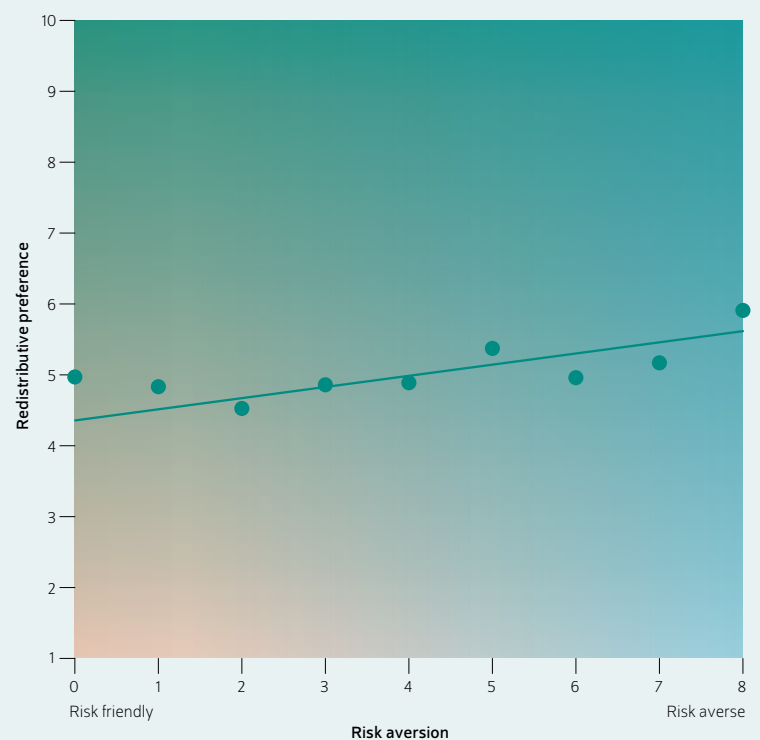
Note: Regressors for gender, age, married, number of children, education, and unemployment were used as control variables. Robust standard errors in parentheses. Significance levels: \*\*\*p<0.01 \*\*p<0.05 \*p<0.1

Source: Authors' own calculations

© DIW Berlin 2018

Figure 1

### Correlation between risk aversion and redistributive preference



Note: Redistributive preference on a scale from zero (no income distribution at all) to ten (all income is distributed so that every citizen gets the same amount); risk aversion on a scale from zero (very risk friendly) to eight (very risk averse). The dots represent the mean values for nine groups of the same size according to their risk aversion. The line represents the linear relation between risk aversion and redistributive preference.

Source: Authors' own calculations

© DIW Berlin 2018

The more people avoid risk, the more income redistribution they favor.

<sup>6</sup> See Thomas Dohmen et al., "Individual Risk Attitudes: Measurement, Determinants, and Behavioral Consequences," *Journal of the European Economic Association* 9, no. 3 (2011): 522–550.

<sup>7</sup> For more on the correlation between gender and party preferences, see, for example, this overview in the *Oxford Research Encyclopedia of Politics*, s.v. "Gender and Political Behavior," by Miki Caul Kittilson, 2016.

redistributive preferences when they are informed about their position in the income distribution or about equality of opportunities in society. Accordingly, the redistributive preferences of people who learn they earn relatively more than they thought may decrease while the redistribution preferences of people who learn they have overestimated opportunities of upward mobility may increase.<sup>8</sup>

Furthermore, these results help policymakers better understand how they can score points with specific target groups using different plans for the welfare state and why certain groups are more or less accepting of redistribution proposals. For example, information on potential reforms aimed at increasing redistribution would be better invested in groups which prefer more redistribution on average.

---

<sup>8</sup> See, for example, Mounir Karadja, Johanna Mollerstrom, and David Seim, "Richer (and Holier) than Thou? The Effect of Relative Income Improvements on Demand for Redistribution," *Review of Economics and Statistics* 99, no. 2 (2017): 201–212; and Alberto Alesina, Stefanie Stantcheva, and Edoardo Teso, "Intergenerational Mobility and Support for Redistribution," NBER Working Paper No. 23027, 2017.

**Manja Gärtner** is a research associate in the Competition and Consumers department at DIW Berlin | [mgaertner@diw.de](mailto:mgaertner@diw.de)

**Johanna Mollerstrom** is head of the Competition and Consumers department at DIW Berlin | [jmollerstrom@diw.de](mailto:jmollerstrom@diw.de)

**JEL:** C83, C91, C93, D63, D81, H23

**Keywords:** Redistribution, inequality, survey, risk aversion

## LEGAL AND EDITORIAL DETAILS

---



DIW Berlin—Deutsches Institut für Wirtschaftsforschung e.V.  
Mohrenstraße 58, 10117 Berlin

[www.diw.de](http://www.diw.de)

Phone: +49 30 897 89-0 Fax: -200

Volume 8

### Publishers

Prof. Dr. Tomaso Duso; Dr. Ferdinand Fichtner; Prof. Marcel Fratzscher, Ph.D.;  
Prof. Dr. Peter Haan; Prof. Dr. Claudia Kemfert; Prof. Dr. Stefan Liebig;  
Prof. Dr. Lukas Menkhoff; Prof. Johanna Möllerström, Ph.D.; Prof. Karsten  
Neuhoff, Ph.D.; Prof. Dr. Jürgen Schupp; Prof. Dr. C. Katharina Spieß

### Editors-in-chief

Dr. Gritje Hartmann; Mathilde Richter; Dr. Wolf-Peter Schill

### Reviewer

Melanie Koch

### Editorial staff

Renate Bogdanovic; Dr. Franziska Bremus; Rebecca Buhner;  
Claudia Cohnen-Beck; Dr. Daniel Kemptner; Sebastian Kollmann;  
Matthias Laugwitz; Markus Reiniger; Dr. Alexander Zerrahn

### Sale and distribution

DIW Berlin Leserservice, Postfach 74, 77649 Offenburg

[leserservice@diw.de](mailto:leserservice@diw.de)

Phone: +49 1806 14 00 50 25

### Layout

Roman Wilhelm, DIW Berlin

### Cover design

© imageBROKER / Steffen Diemer

### Composition

Satz-Rechen-Zentrum Hartmann + Heenemann GmbH & Co. KG, Berlin

ISSN 2568-7697

Reprint and further distribution—including excerpts—with complete  
reference and consignment of a specimen copy to DIW Berlin's  
Customer Service ([kundenservice@diw.de](mailto:kundenservice@diw.de)) only.

Subscribe to our DIW and/or Weekly Report Newsletter at

[www.diw.de/newsletter\\_en](http://www.diw.de/newsletter_en)