



## **Multidimensional Polarization of Income and Wealth**

Bettina Scherg (Leuphana University Lüneburg, Germany)

Paper Prepared for the IARIW 33<sup>rd</sup> General Conference

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First Poster Session

Time: Monday, August 25, Late Afternoon



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Research Institute on Professions (FFB), Leuphana University Lüneburg

## Introduction

The distribution of income and wealth has moved more and more into the focus of scientific and political attention.

While income inequality is currently slightly decreasing, an increase in inequality of net private wealth distribution is emerging in Germany. An increasing inequality, especially in the form of a polarization, leads to a greater sense of injustice among the population and thus threatens the social coherence.

### The aim of this paper is

- to identify the polarization intensity of income and wealth by a multidimensional measure.
- In addition to the traditional income dimension wealth is included as a determinant of the multidimensional polarization.
- The individual welfare is modeled through a **translog utility function**. The parameters of the utility function are determined by the interdependent relations of wealth and income for the German population.

## Economic relevance

- A polarized distribution is characterized by structural shifts so that the upper and the lower tail of the distribution increase, while the middle class decreases.
- Polarization is a special form of inequality.
- But while income inequality is a basis for economic growth, a polarized distribution can be a potential hazard to the structural coherence of economic and society.

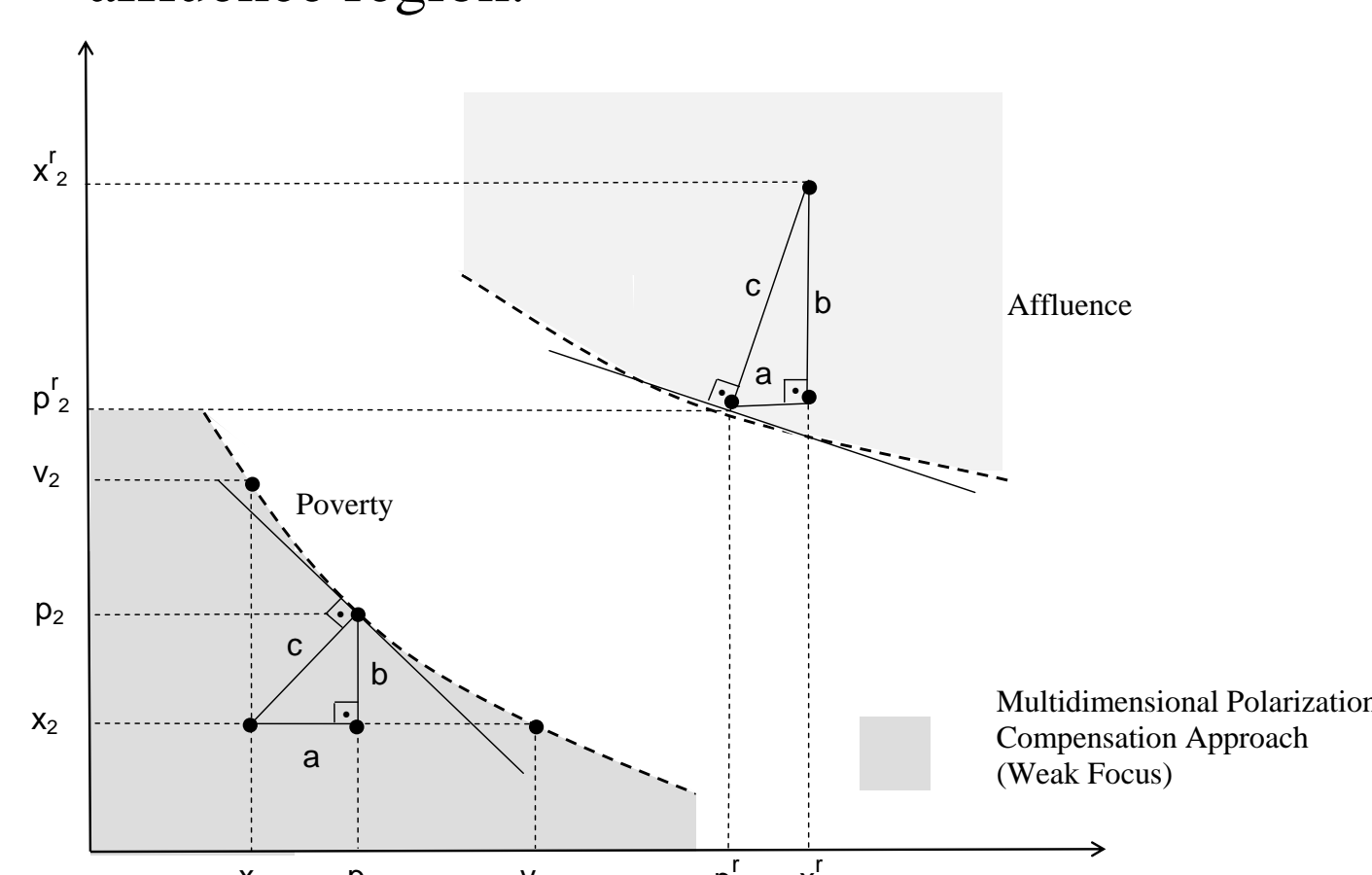
## Data and method

For the following cross-sectional analysis the **SAVE survey** (Savings Behavior and Retirement in Germany) from 2010 is used.

- In addition to socio-economic characteristics of the household, such as age, education, labor force participation the handling of income and wealth is asked.
- The respondents are asked about their income from various sources and the amount of different types of financial wealth, private and occupational pensions, ownership and value of land and business assets and liabilities of all kinds.

To measure the polarization intensity the **Minimum 2DGAP** is used.

- This gap  $c$  is in accordance with the shortest distance from a specific individual welfare situation to the poverty respective affluence welfare curve.
- Additional the distances  $a$  and  $b$  offer the unidimensional contribution of income and wealth to leave the multidimensional poverty respectively affluence region.



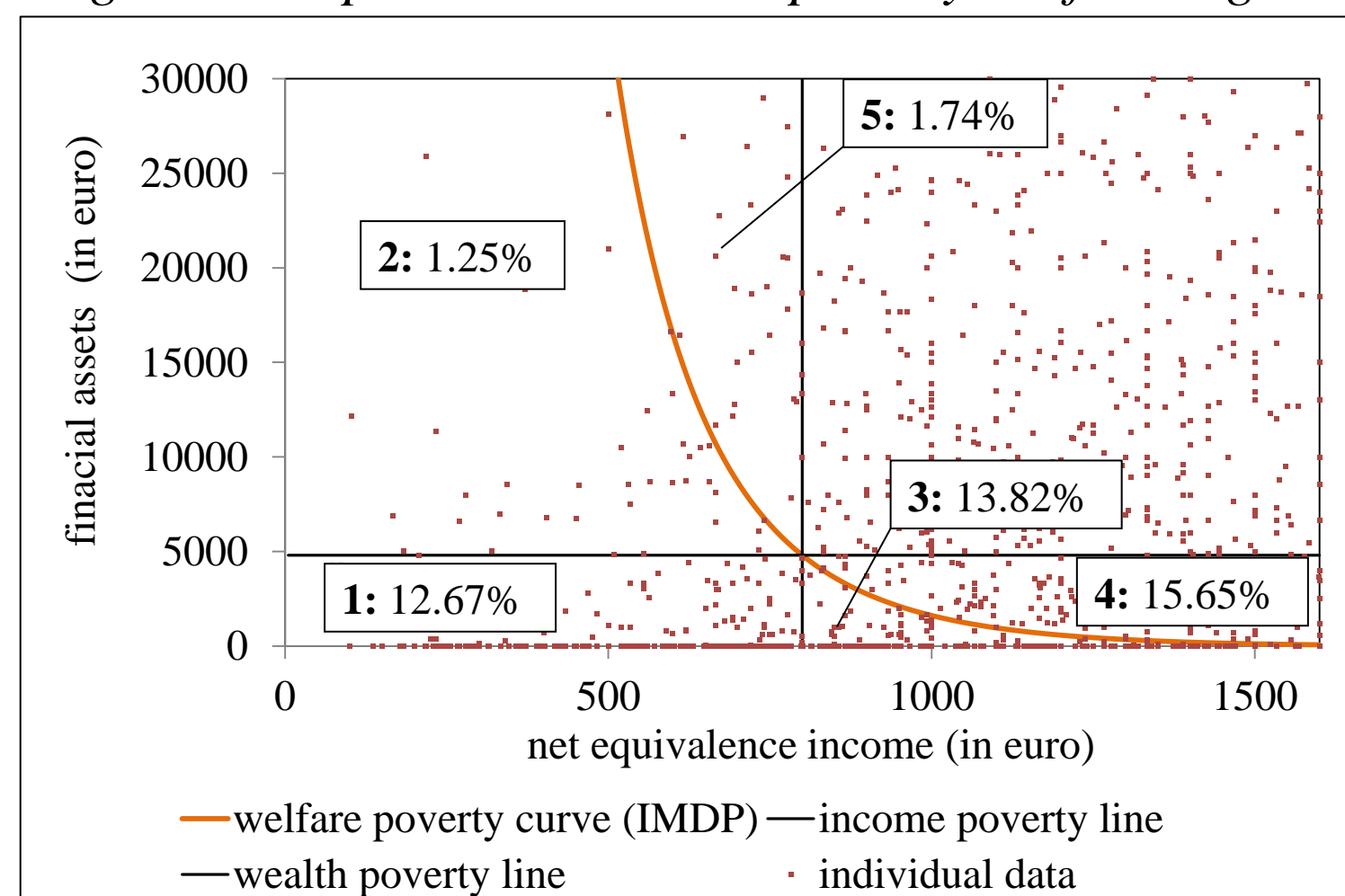
## Welfare Results

Figure 1 and Figure 2 present the welfare poverty and affluence curves, which depends on wealth (i.e. only financial assets) and net equivalence income and run through the crossing point of the one-dimensional thresholds.

### Welfare Region:

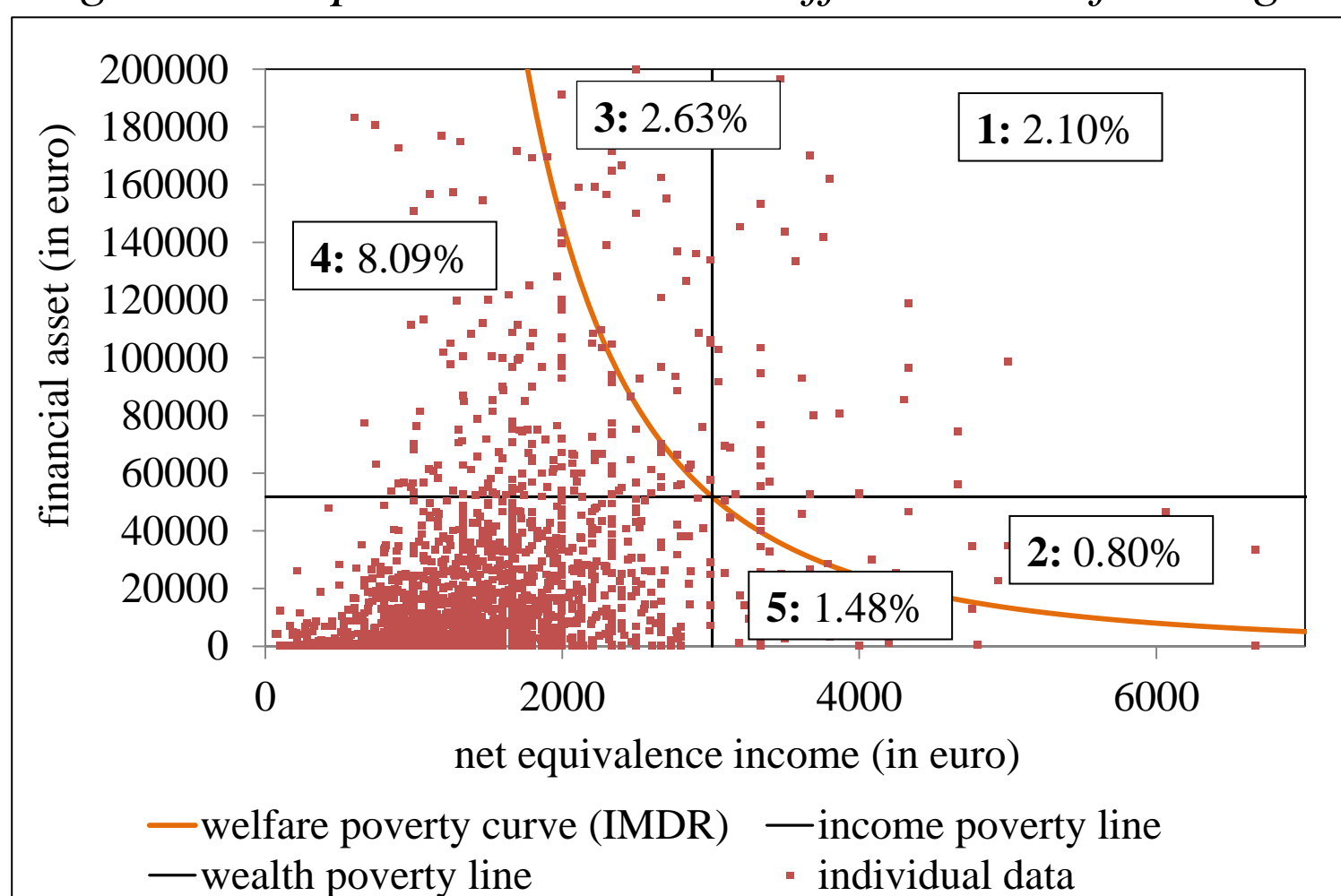
- 1: Poor/rich in both dimensions
- 2: Multidimensional poor/rich, although wealth above poverty threshold/below affluence threshold
  - Poor: wealth cannot compensate income deficit
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Figure 1: Population shares in poverty welfare regions



Source: own calculations

Figure 2: Population shares in affluence welfare regions



Source: own calculations

## Polarization Results

### Poverty

- The average shortest distance to the welfare poverty curve takes 1301.60€
- This distance accompanies with a compensation amount of 1295.95€ additional income and 47.28€ more financial assets to reach the poverty curve.

### Affluence

- In the upper pole the direct distance to the welfare affluence curve averages 1213.21€.
- Therefore a loss of 1213.09€ income and 10.11€ financial assets would cause a loss of the affluence status.

The very small amount of financial assets results from the almost steep downward running welfare curve in this region. This curve progression signals that income and net assets are hardly substitutable.

## Socio-economic subgroups

- The group of the rich not employed has compared with other occupational categories and employment statuses a very large mean distance to the affluence welfare curve.
- Therefore they are not as endangered to lose their affluence status than the other groups.
- The second interesting group is the group of the self-employed who have a two-times larger gap to the affluence curve than the employees.

## Conclusions

With respect to the welfare regions two interesting result attract attention:

- 11.11% of the individuals who are income poor uses their wealth as a substitute for income to reach a welfare status out of poverty.
- In the upper pole a remarkable fraction of 47.55% of the affluent individuals reach a welfare status by using financial assets to compensate their income below the affluence threshold

The results of the polarization intensities for only one year just provide little information and are hardly interpretable. To measure the polarization in longitudinal section is quite more expedient. This longitudinal consideration will be the next step to get comparable results so that statements of the development of polarization are possible.

In an additional application financial assets were replaced by net assets but the results did not differ very strong, therefore it can be assumed that the influence of the other components included in net assets is not very high on polarization.

## References

- Merz, J. and Bettina Scherg (2013) Polarization of Time and Income – A Multidimensional Approach with Well-Being Gap and Minimum 2DGAP: German Evidence, FFB-Discussion Paper No. 95, Fakultät W-Wirtschaftswissenschaften, Leuphana Universität Lüneburg, Lüneburg.
- Merz, J. and Tim Rathjen (2011) Intensity of Time and Income Interdependent Multidimensional Poverty: Well-Being and Minimum 2DGAP – German Evidence, FFB-Discussion Paper No.92, Fakultät W-Wirtschaftswissenschaften, Leuphana Universität Lüneburg, Lüneburg.

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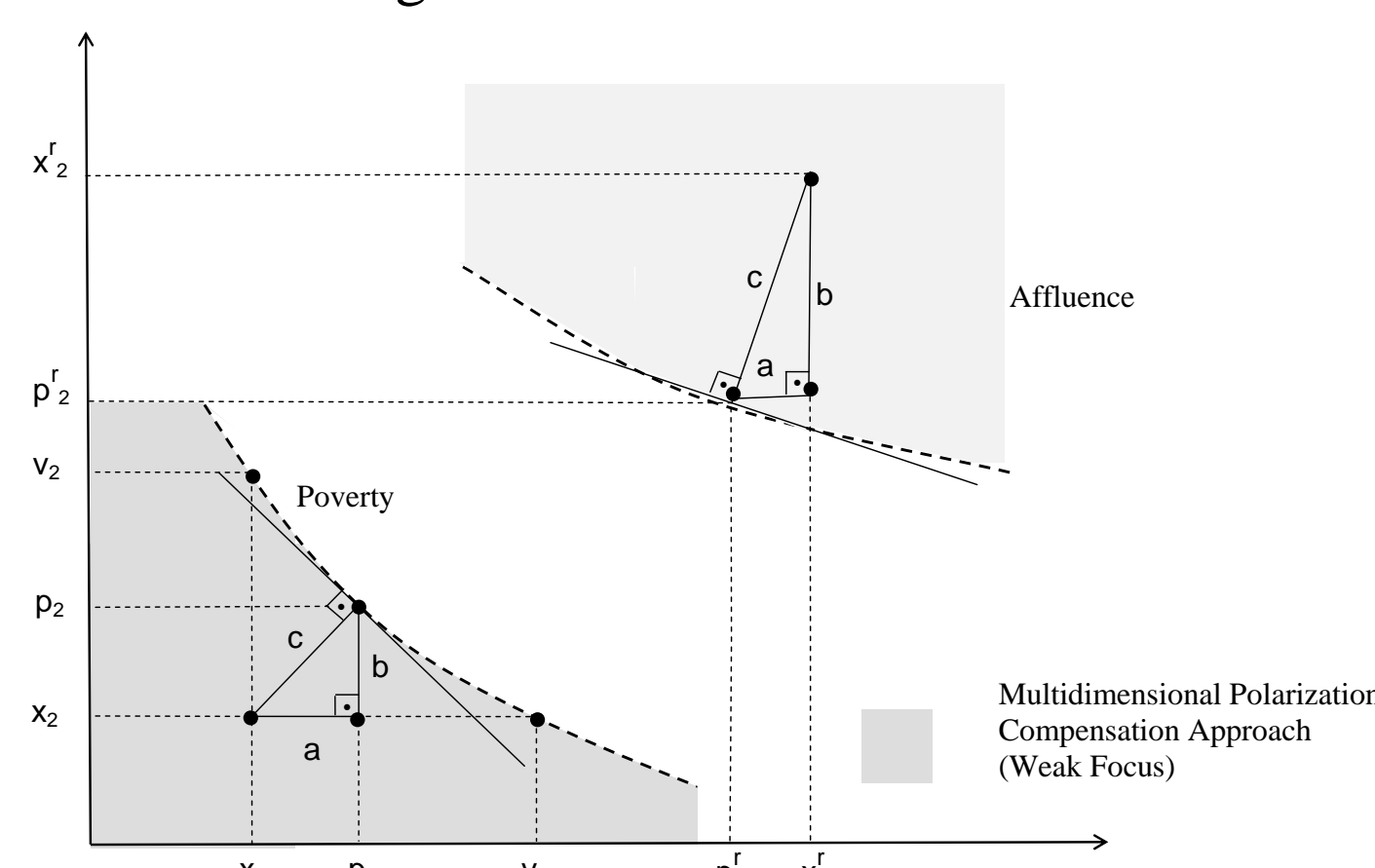
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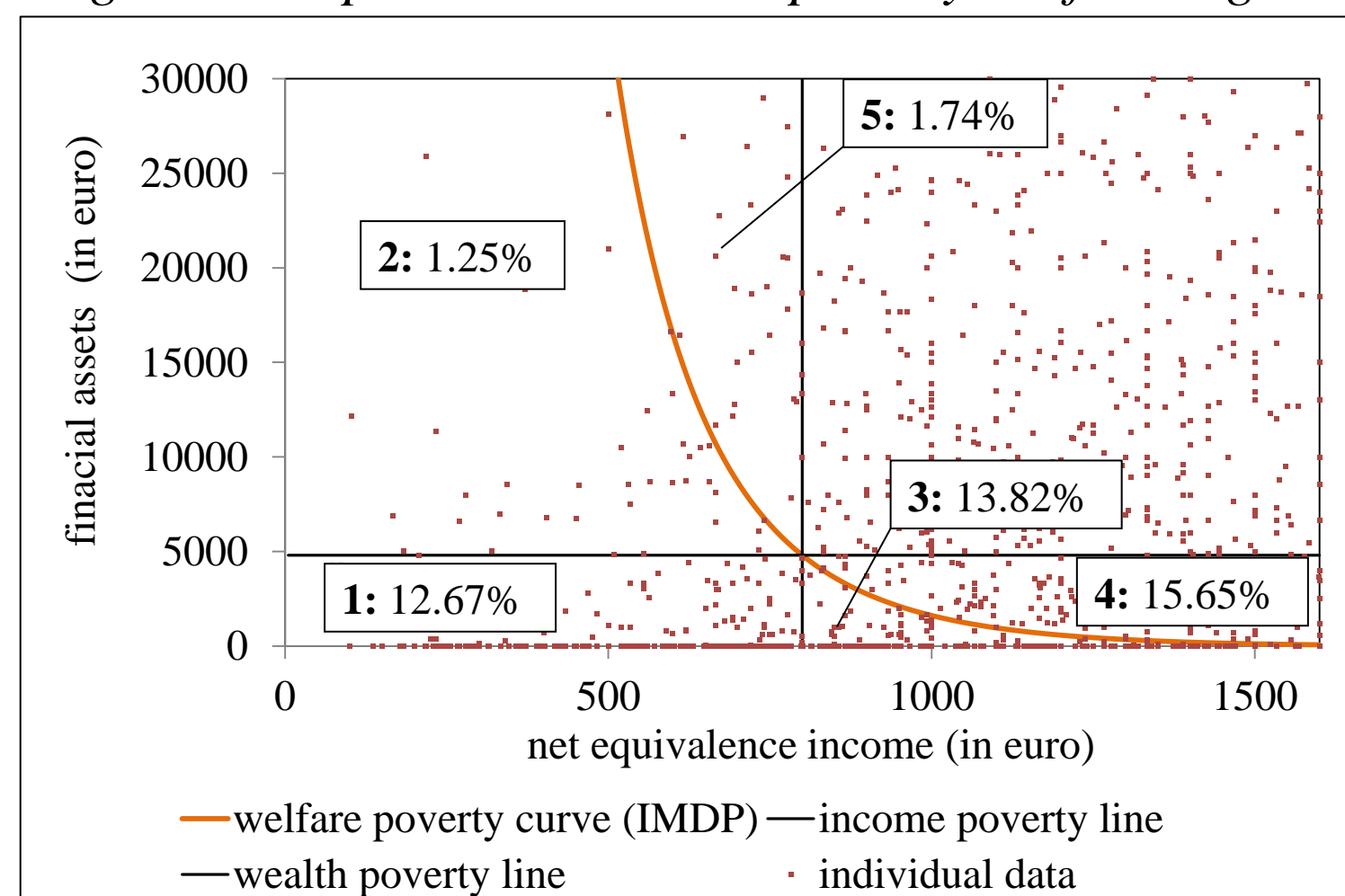
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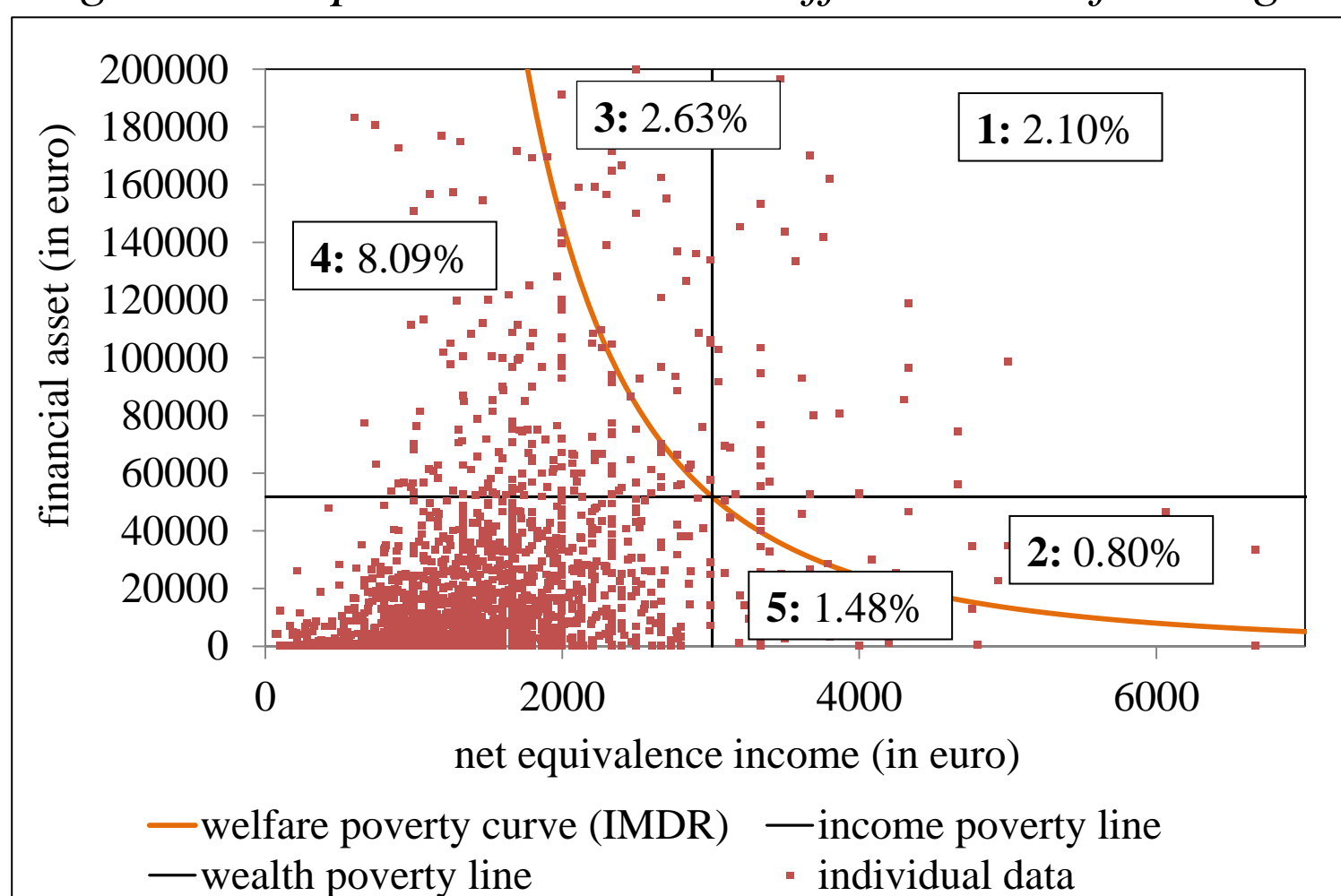
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