



# Out-of-pocket Maximum Rules under a Compulsory Health Care Insurance: A Choice between Equality and Equity

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# Introduction

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- The present Social Security system in France officially came into being with the Ordinance of 1945 establishing a pact of solidarity between all French citizens; Its aim is to protect individuals from social risks related to health, employment, the family and retirement.
- In terms of health, social protection is provided by a Compulsory Health Care Insurance scheme, to which contributions are mandatory, based on the simple principle that: **'each pay according to their abilities and receives according to their needs'**.
- To this basic principle are added a certain number of schemes that permit healthcare costs partially covered by the Sickness Insurance to be reimbursed integrally for certain diseases or under specific circumstances (long-term illness (ALD scheme), pregnancy, occupational accidents....).

# Introduction

- The system generates specific reimbursement characteristics: they are independent of income and remaining out-of-pocket payments (OOP) can be excessive;
- OOP = the difference between actual health expenditures and the amount reimbursed by Compulsory Health Care Insurance.
- Catastrophic OOP payments can be defined in two ways:
  - Catastrophic OOP is associated with a period of illness that temporarily or durably deteriorates a patient's health status and requires extremely expensive care that is not always reimbursed by Compulsory Health Care Insurance.
  - OOP payments are considered as an absolute value measured against income or an individual's ability to pay. In this case, OOP payments are qualified as 'catastrophic' if they lower a household's standard of living or if they represent a significant percentage of the household income over and above a certain critical threshold.

# Introduction

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- In France, the majority of excessive OOP payments are captured by the specific health insurance schemes.
- But, high OOP payment persist,
- and, the inequalities they generate have led public policy makers and economists to question the sustainability of the current system and to imagine possible evolutions.
- One of these alternatives involves substituting the long-term illness scheme , with one that provides a OOP maximum threshold or OOP cap.
- **Our objectives of this study are to simulate hypothetical reform of OOP and to measure their redistributive effects.**

# The French Health insurance system

- Health care insurance : a two tier system
  - Compulsory Health Care Insurance scheme. Contributions are mandatory
  - Supplementary insurances (Voluntary, group or individual (85%));
  - For Poor, it exists a specific Supplementary insurance, CMU (7%).
  
- In summary, Compulsory insurance defines rules of reimbursement
  - Defines prices of Drugs or Visits;
  - Pays a fixed percentages of these prices
    - ➔ 65% of reimbursement basis for a visit
    - ➔ 35% or 65% of prices of Drugs
  - Exists a copayment for patients (ticket modérateur) and deductibles (franchise);
  - For chronically ill ('ALD'), without copays only for covers claims related to the disease.

# Chronically ill scheme ('ALD')

- For ambulatory care:

	Expenditures	Public Ins	OOP
→ For non-Ald	873 €	666 €	207 €
→ For Ald	3 463 €	3 187 €	276 €

- The number of patients admitted to the ALD scheme increases by 3.5 % every year.
- This scheme currently generates 62.3% of National Health Insurance reimbursements whereas it only concerns 14.6% of the population insured, that is 8.3 million individuals,
- and will represent over 70% of expenditures in 2015.

# Chronically ill scheme ('ALD')

- ALD scheme is not without shortcomings:
  - Firstly, it creates ratchet effects: few individuals leave the scheme 'voluntarily'.
  - Secondly, the diseases covered by the ALD scheme are extremely heterogeneous and there is no correlation between the cost and gravity of an illness and its inclusion in the ALD scheme.
  - Thirdly, it can be a source of inequalities. It is the GP in an one to one relationship with the patient in a specific environment who decides whether or not the patient is eligible for ALD.
  - Finally, it does not completely resolve the problem of catastrophic OOP payments for all the patients benefitting from the ALD scheme.

# Reform (bouclier sanitaire)

- The reforms tested are based on several hypotheses;
  - the abolition of the Long-Term Illness scheme (ALD),
  - the creation of an OOP payment cap,
  - and the neutrality of the insurance system (the health insurance system will neither gain nor lose from the reform). Mathematically, the condition statement optimisation programme consists in finding the OOP maximum that confirms the following equilibrium :

$$\Delta = \sum_i OOP_{current} - \sum_i OOP_{reform} = 0$$

- This statement condition optimisation allows us to focus solely on the redistributive nature of OOP payments calculated according to a maximum threshold rule.
- The OOP maximum is defined as the threshold that protects the insured against 'catastrophic expenses' as, over and above that cap expenses would be covered at 100%.



# Reform

- We thus propose analysing three OOP maximum rules:
  - The **uniform threshold** (UT) applies a uniform OOP cap to all the insured whatever their incomes.
  - ➔ The UT assumes that all individuals are treated identically whatever their income. The OOP cap proposed by the UT model will not protect lower income individuals from catastrophic OOP in relation to their income.
  - The **income-related threshold** (IRT) fixes an individual OOP cap calculated according to annual income by consumption unit.
  - The **income-related threshold with an increasing marginal effect** (IRTM) is based on the preceding rule but marginally increases the proportionality coefficient by calculating OOP cap by income bracket.
  - ➔ The IRT and IRTM models differ in the fact that caps are calculated taking income levels into account. the copayment caps increases according to income level, but for the IRTM, this increase is non-linear.

# Reform

- § We chose to build an exogenous static microsimulation model.
  - The model is static as it allows us to evaluate the reform by characterising the distribution of the financial burden before and after its implementation in a given year without modifying the population structure.
  - It is exogenous in that it assumes that individual behaviour remains unchanged in the face of the new reform.
  
- § Our base was constructed using 2006 data from the Health and Social Protection Survey (ESPS) database (socio-economic data) and the Permanent Sample of Socially Insured (EPAS: data on medical consumption):
  - Ambulatory services and standard charges not exceeding statutory fees;
  - Without “CMUiste” (poorest people).

# How to measure the impacts of reform?

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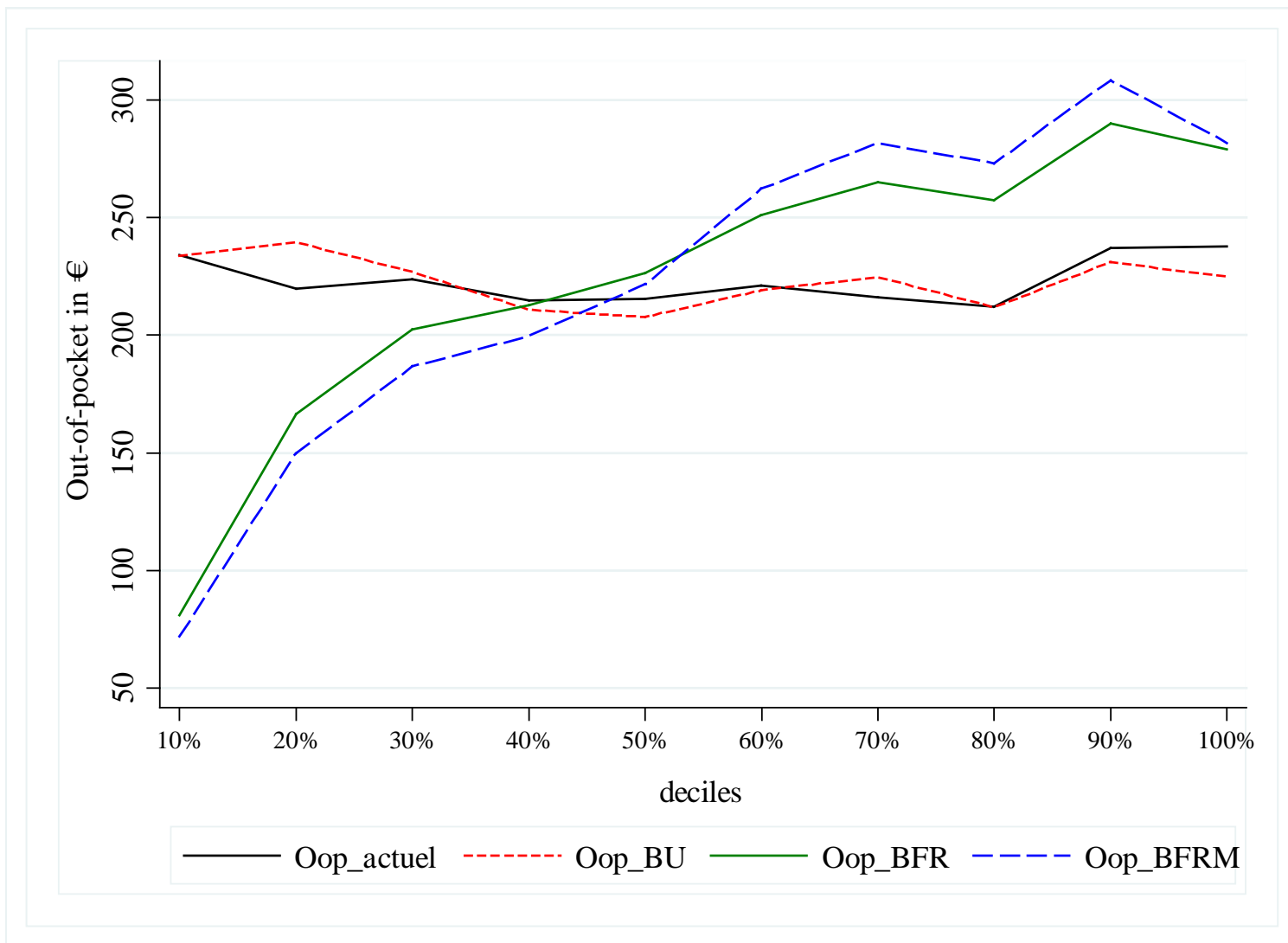
- To evaluate reforms: we analyse from 'who are the winners and losers?' to the redistributive characteristics of the Compulsory insurance.
  
- In order to analyse the possible effects of this reform, our analysis is developed in three phases.
  - In the first phase, we present the overall results obtained for the different scenarios tested.
  - In a second phase, we identify the winners and the losers.
  - Finally, we observe the redistributive effects on the health insurance system in terms of equity.

## Initial observations

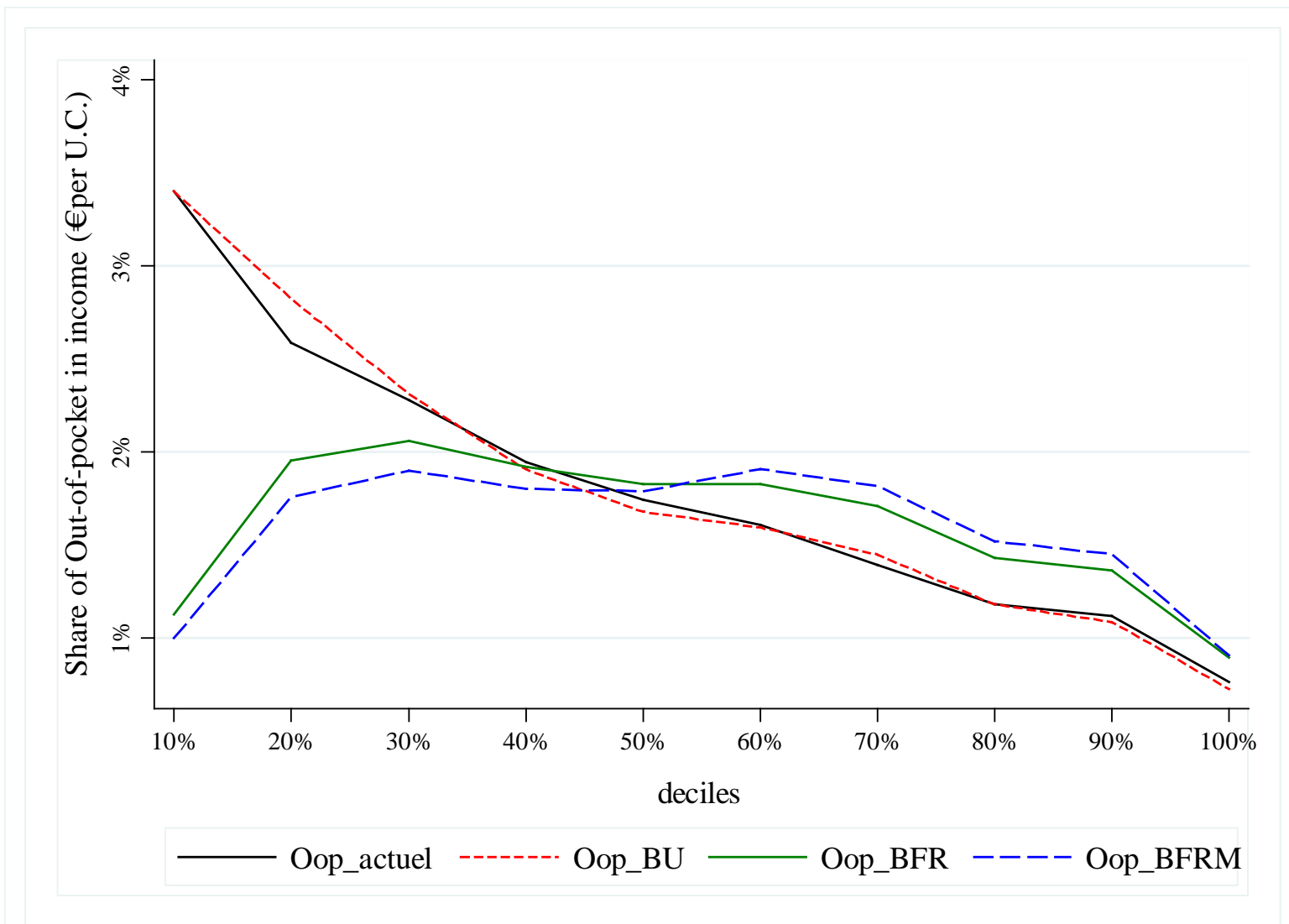
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- The current average OOP payment amounts to 223 €, the maximum to 3,607 €, which suggests a broad dispersion of OOP payments.
- In addition, the average OOP payment is constant according to revenue deciles.
- The financial participation related to income, or the OOP payment to income ratio, thus decreases according to revenue. It is approximately 3 times higher for individuals in the 1st decile in relation to individuals in the 3rd decile.
- Current OOP payments are low for the majority of the population and extremely high for a small percentage.
- OOP payments are therefore concentrated among a small number of individuals: 40% of OOP payments weigh on 10% of the population.

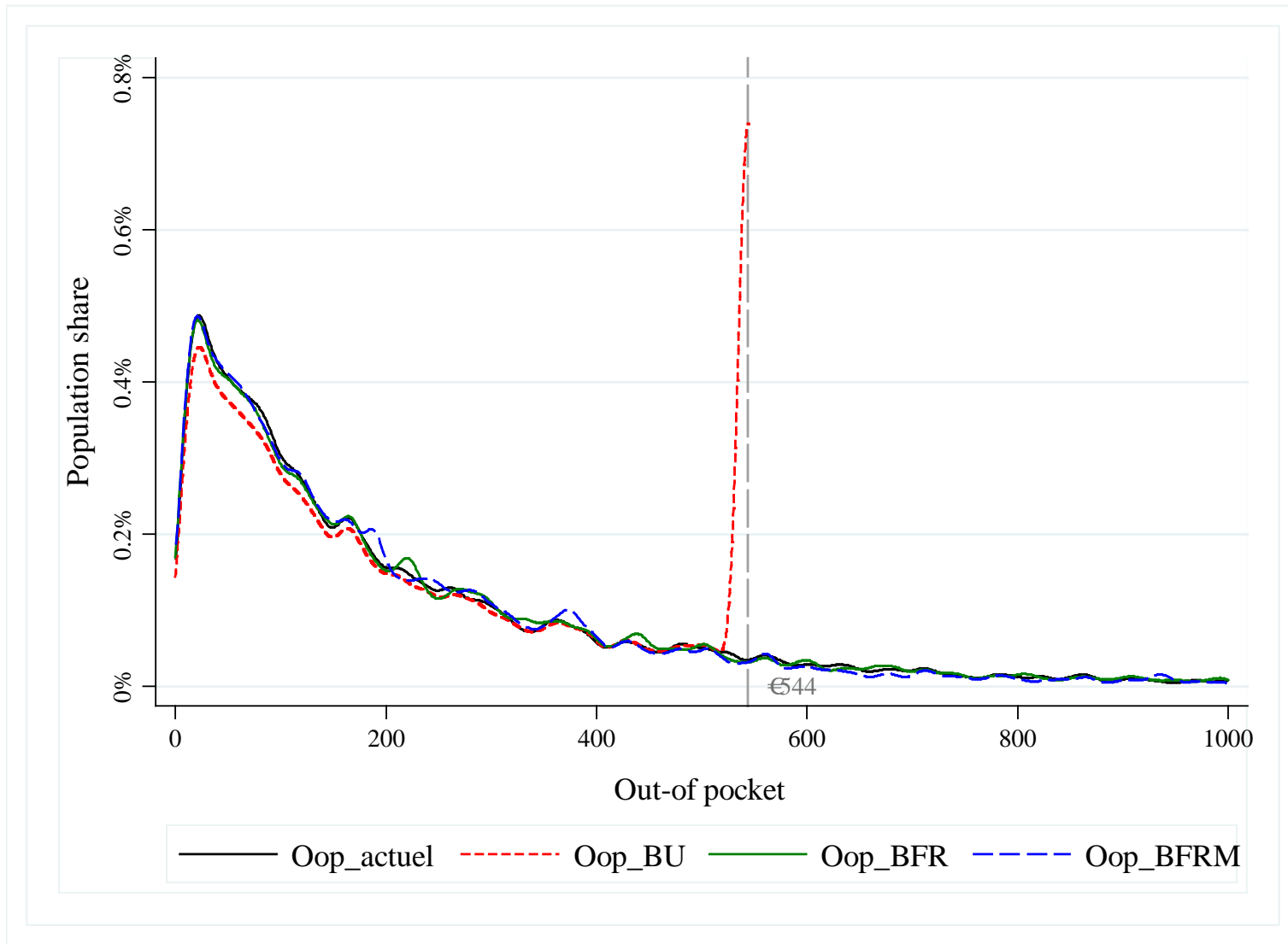
# Initial observations



# Initial observations



# Initial observations



## Who loses? Who gains?

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- Probability of being a winner or a loser using a logistic regression model.
- For the three OOP cap models, estimates show that the effect of age, being female and having supplementary health coverage increases the probability of gaining .
- Whereas being on ALD with a poor health status has a negative effect on the probability of gaining.
- There is a non-linear effect of age on OOP payment levels.
- Results clearly demonstrate the differences that distinguish the UT, IRT and IRTM models concerning the income effect. This effect is neutral for the UT and significantly non-linear for the IRT and IRTM: Individuals will have a higher probability of being losers if their income is high and if the OOP cap is related to income.



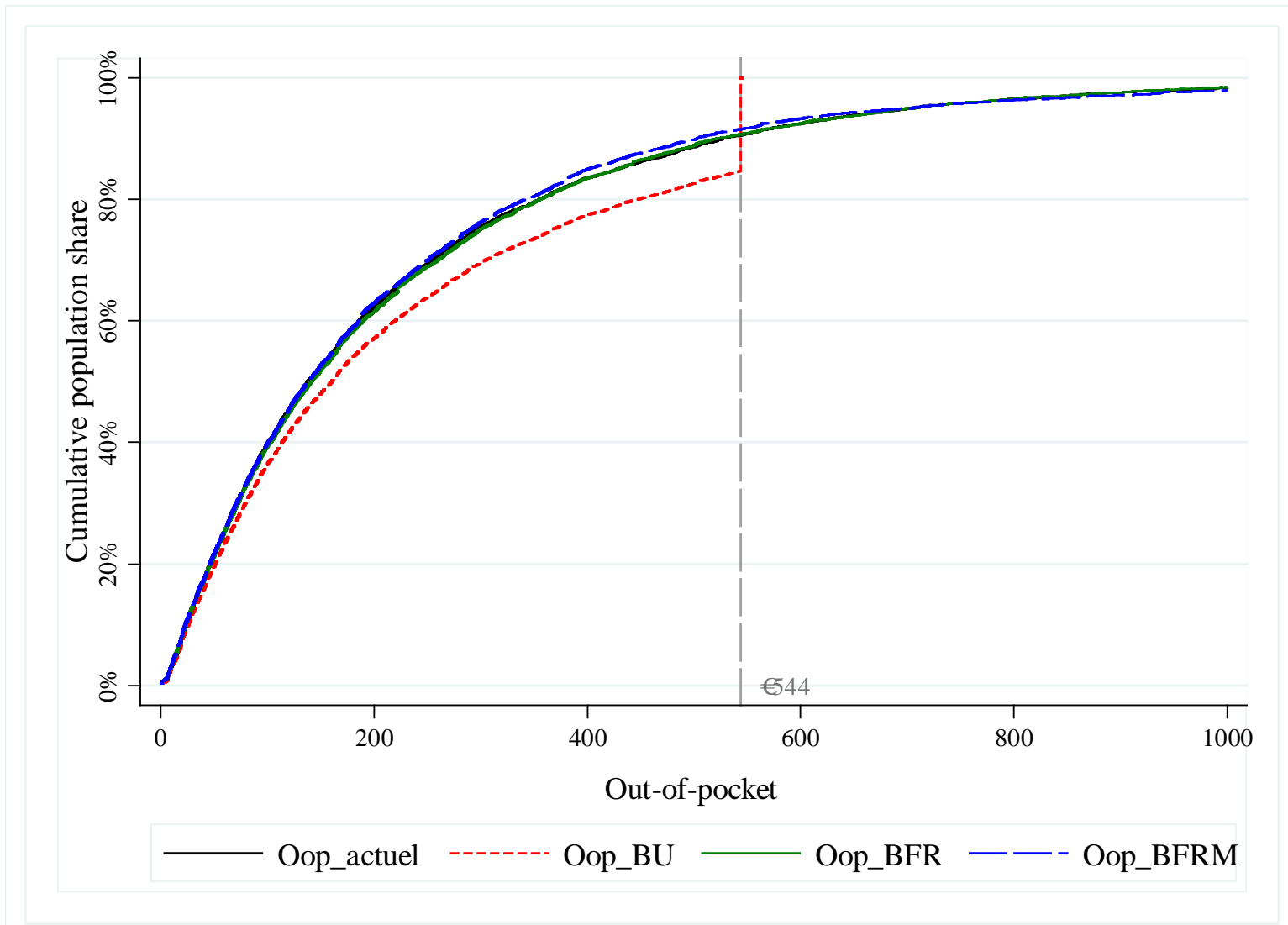
# Analysis of equity and redistributivity

- The analysis in terms of equity is complementary to the initial descriptive analyses. One of the motivations behind these OOP safety-net threshold analyses is to find a better redistributive equity and better risk coverage for the health insurance system. To achieve this, we use three different methods: the Kakwani index, ALJ decomposition of the redistributive effect and second order stochastic dominance.
  
- The analysis of the redistribution effects of the different OOP cap models on the Kakwani index and ALJ decomposition reveals that the consequences in terms of redistribution will not be identical, or even contrary, according to the type of OOP cap model chosen.
  - The UT will tend towards greater inequality and as a result, further dissociate OPP from income.
  - Inversely, the IRT and IRTM models give a more unequal redistribution but in favour of poorer individuals which, in this context, would make the health insurance benefits system more equitable.

# Analysis of equity and redistributivity

- The final criterion to better characterise the system does not measure equity but rather the notion of individuals' risk aversion in relation to insurance.
- Second order stochastic dominance asserts that individuals with risk aversion will prefer one form of OPP distribution to another if OOP distributions have the same average and if the Lorenz curves associated to the two types of distribution only bisect once (We can also use Kolmogorov–Smirnov Test ).
- Therefore, if a reform reduces risks (in the second order stochastic dominance sense) all the agents with risk aversion should prefer it.

# Analysis of equity and redistributivity



## Concluding remarks

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- The effects of these two main reform concepts, uniform or income-related OOP cap are not identical and lead to contrary conclusions.
- In reducing the risk of being faced with a very high OOP burden, uniform cap level out the heterogeneity of situations and appear to suit individuals with high risk aversion.
- Inversely, income-related thresholds increase the heterogeneity of OOP burdens but have a less regressive redistributive effect; moving from an egalitarian system to a more equitable system.
  
- Before these reforms of OOP payment, French society will have to resolve the dilemma between equality and equity: from what point does the search for absolute equality become inequitable?