Assessing the equity and coverage policy sensitivity of financial protection indicators in Europe

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A B S T R A C T

Progress towards universal health coverage is monitored by the incidence of catastrophic spending. Two catastrophic spending indicators are commonly used in Europe: Sustainable Development Goal (SDG) indicator 3.8.2 and the WHO Regional Office for Europe (WHO/Europe) indicator. The use of different indicators can cause confusion, especially if they produce contradictory results and policy implications. We use harmonised household budget survey data from 27 European Union countries covering 505,217 households and estimate the risk of catastrophic spending, conditional on household characteristics and the design of medicines co-payments. We calculate the predicted probability of catastrophic spending for particular households, which we call LISAs, under combinations of medicines co-payment policies and compare predictions across the two indicators. Using the WHO/Europe indicator, any combination of two or more protective policies (i.e. low fixed co-payments instead of percentage co-payments, exemptions for low-income households and income-related caps on co-payments) is associated with a statistically significant lower risk of catastrophic spending. Using the SDG indicator, confidence intervals for every combination of protective policies overlap with those for no protective policies. Although out-of-pocket medicines spending is a strong predictor of catastrophic spending using both indicators, the WHO/Europe indicator is more sensitive to medicines co-payment policies than the SDG indicator, making it a better indicator to monitor health system equity and progress towards UHC in Europe.

1. Introduction

Universal health coverage (UHC) means that people can use quality health services without experiencing financial hardship. The monitoring of progress towards UHC typically involves indicators designed to capture the financial hardship that occurs when people spend out-of-pocket to use health services: the share of households experiencing *impoverishing* or *catastrophic* health spending. Each of these indicators can be measured in different ways [1–3]. Although they have become an important part of global, regional, and country-level monitoring efforts, there is no universally agreed method for calculating them, with many international organizations still using different approaches.

The main difference between catastrophic health spending indicators is in how they define the resources available to a household to spend on health care. Some indicators consider available resources to be a household's entire budget (i.e. consumption) or income; others, referred to as capacity-to-pay indicators, adjust a household's resources to account for the costs of meeting basic needs, such as food or housing. The implications of these differences are not widely understood.

Researchers have previously considered a number of principles to identify whether a financial protection indicator is fit-for-purpose to monitor progress towards UHC [4]. In this paper, we argue that for an indicator of financial hardship to be useful for research and policy, it must meet two criteria. First, it must be sensitive to equity: it should capture differences in the risk of experiencing financial hardship between rich and poor households because we know that poorer people are more likely than richer people to face financial barriers to accessing health care [5], even when out-of-pocket payments are relatively small

[6,7]. Second, it must be sensitive to differences in coverage policy (the way in which health coverage is designed and implemented), a key determinant of the level and distribution of out-of-pocket payments [8]. If the incidence of catastrophic health spending does not vary under different coverage policies, and changes in policy are not reflected in monitoring efforts, policymakers may be discouraged from introducing policies intended to reduce financial hardship.

In Europe, the two main indicators used to monitor catastrophic health spending are the capacity-to-pay approach developed by the WHO Regional Office for Europe (referred to here as the WHO/Europe indicator) and used in regional UHC monitoring frameworks, and the budget share approach used to monitor UHC globally in the SDGs (SDG 3.8.2, referred to here as the SDG indicator) [9–12]. The aim of this article is to determine whether these commonly used indicators produce similar results for European Union (EU) countries and how they differ in terms of sensitivity to equity and coverage policy.

We begin by describing the two indicators in detail to show how they differ in the way they are calculated. We then calculate the incidence of catastrophic health spending for both indicators using harmonised 2010 and 2015 household budget survey data from 27 EU countries (covering 505,217 households) and estimate the risk of experiencing catastrophic health spending conditional on household characteristics and a selection of coverage policies. For coverage policies, we focus on the design of user charges (co-payments) for outpatient prescriptions because outpatient medicines are the main driver of catastrophic health spending in Europe, particularly in countries with a higher incidence of catastrophic spending, so policies that aim to reduce out-of-pocket spending on medicines are also likely to reduce financial hardship [10,11]. We then calculate the predicted probability of incurring catastrophic health spending for particular types of households to see if this probability varies across indicators and depending on the coverage policies in place.

2. Materials and methods

All methods of measuring catastrophic health spending are based on a ratio of a household's out of pocket spending to some measure of that household's resources. Out-of-pocket spending is defined as any formal or informal payment made by people at the time of using any health care good or service delivered by any type of provider. A household is defined as experiencing catastrophic health spending when the ratio of out-of-pocket spending to household financial resources crosses a threshold.

The most important difference between any catastrophic health spending indicator is in how the resources available to a household to pay for health care are measured. For the SDG indicator, a household's entire budget (i.e. consumption) is considered as available to pay for health care. If a household spends more than either 10 % or 25 % of its budget on out-of-pocket spending, that household is considered to be a 'catastrophic spender'. In contrast, capacity-to-pay approaches adjust household resources by subtracting an estimate of the cost of meeting basic needs from a household's total budget (i.e. consumption); the remaining resources are regarded as a household's capacity to pay for health care. Capacity-to-pay indicators differ in how they define basic needs. The WHO/Europe indicator defines them as food, housing and utilities (water, electricity, heating and fuel for cooking) and calculates the cost of meeting basic needs based on spending on food, rent and utilities in households whose total per equivalized adult consumption is between the 25th to 35th percentiles of a given country and year. This range was chosen on the assumption that these households are unlikely to be extremely poor and so their observed spending on these items is likely to be sufficient but not in excess of what is required to meet basic needs. If a household spends more than 40 % of its capacity to pay for health care on out-of-pocket payments, that household is considered a catastrophic spender.

We assess whether households in the EU harmonised household budget survey data experience catastrophic health spending using the WHO/Europe indicator at the 40 % threshold and the SDG indicator at the 10 % threshold, which are the thresholds most commonly used for each indicator, respectively. The SDG indicator normally reports catastrophic spending as a share of the population and the WHO/Europe indicator reports it as a share of households. To ensure comparability across indicators, we report the share of households for both indicators.

2.1. Models

To understand how the indicators differ in terms of sensitivity to equity and coverage policy, we run regressions estimating the risk of catastrophic spending conditional on household characteristics and coverage policies in place in a country and year. We begin by regressing binary indicators of catastrophic spending on a vector of household characteristics, including whether the household is a single parent household, the number of economically active adults, whether the person lives alone, the number of people over age 65, the number of children, urban/rural, and medicines spending per person per day – which is the most appropriate proxy for health care needs in the dataset (Model 1 – see equation in supplementary material). The ratio of a household's per person consumption expenditure relative to median per person consumption expenditure in that country and year is also included as a proxy for relative socioeconomic status; we subtract 1 so that the variable is equal to zero for households at median per person consumption. We also include the mean daily per person level of consumption for each country and year to proxy wealth at the country level.

We then explore the association between selected coverage policies and the risk of catastrophic spending. We focus on the design of co-payments for outpatient prescriptions because outpatient medicines are the main driver of financial hardship in Europe using both methods [10,11]. We consider three commonly used policies that are intended to protect people by reducing their exposure to co-payments for medicines: (1) exemptions from co-payments for people with low incomes; (2) the use of low, fixed co-payments (the co-payment is set at a flat rate) instead of percentage co-payments (the co-payment is set as a share of the medicine price); and (3) income-related monthly or annual caps on co-payments (caps that aim to be more protective for poorer households than richer households).

We include these three protective policies in the models on their own and with interactions that explore whether the association between coverage policies in countries and the risk of catastrophic spending varies dependent on a household's relative consumption expenditure per person. We do this because we expect that the degree of protection these policies are likely to provide will vary by household, in part depending on a household's wealth. We also control for the domestic government share of current spending on health in the survey year to capture some of the cross-country variability in health system capacity (Model 2 – see equation in supplementary material). Data on government spending on health come from WHO's Global Health Expenditure Database.

There is no substantive variation in the selected co-payment policies within countries across the two years of data available. In all models, in addition to mean per person daily consumption and government spending as a share of current spending on health by country and year, we control for country random effects and year-fixed effects, with standard errors clustered at the country-year level. All regressions are run as linear probability models.

Directly comparing model coefficients is not necessarily the most intuitive way to assess how the risk of catastrophic spending conditional on co-payment policies varies when using different financial hardship indicators, particularly if we are most interested in understanding the implications of choice of indicator for equity (i.e. the risk of catastrophic spending among households in vulnerable situations such as those on low incomes or with chronic health needs). Therefore, to better understand whether the probability of experiencing catastrophic spending differs across the two indicators depending on the medicines coverage policies in place in a country and year, we present and compare

predicted probabilities for hypothetical households. We refer to these predicted probabilities as 'hypotheticaL Individual ScenArioS', or LISAs, and estimate LISAs conditional on different combinations of the selected co-payment policies to observe whether the model-predicted probability of being a catastrophic spender using each indicator varies depending on the co-payment policies in place.

2.2. Data sources

We calculate catastrophic spending incidence using the EU Harmonized Household Budget Survey (HBS) dataset. The use of a harmonized dataset is important because we run regressions on a pooled cross-country sample and using a harmonized dataset limits the possibility of variability stemming from differences in survey design, although this is impossible to avoid in full. The full dataset contains observations for 2010 and 2015 from most EU countries.

Information on the selected protective co-payment policies for outpatient medicines is based on a systematic analysis of coverage policy carried out by the WHO Regional Office for Europe (Table A1). Although we assume that these policies are applied similarly across countries for the sake of the modeling exercise, in practice there are differences – for example, in the level at which fixed co-payments are set, how low income is defined for the purposes of exempting people from co-payments, and the definition and share of income used to determine caps on co-payments.

No countries had all three protective policies in place in 2010 and 2015; 9 countries had none, 13 had one, and 5 had two. While one might expect countries with higher health spending as a share of GDP or higher GDP per person to use more protective policies, this is not necessarily the case. For example, France spent more of its GDP on health than any other country in the sample in 2015 and yet it used none of the three medicines co-payment policies. Likewise, Czechia and Spain both had

two of the medicines co-payment policies yet their GDP per person in purchasing power parity ($33,924 and $34,900, respectively) was below the EU average ($38,556), while the country with the highest GDP per person in purchasing power parity, Luxembourg, used none of the protective policies.

3. Results

We report unweighted descriptive statistics by country (Table 1). The countries vary considerably in their household characteristics. The average number of people per household over age 65 varies from a low of 0.10 in Luxembourg to a high of 0.74 in Greece. Hungary and the United Kingdom were the only countries with more than 1 economically inactive adult on average per household. While the average household's per person consumption was 19 percent above that of the median household in each country and year, this varied from 9 % in Czechia to 25 % in Portugal, Italy and Greece.

Fig. 1 shows the unweighted incidence of catastrophic spending by country disaggregated by consumption quintile.

Using the WHO/Europe indicator (top panel, Fig. 1), the highest rates of catastrophic spending are in Bulgaria (18.3 %), Lithuania (14.5 %) and Latvia (13.9 %), and the lowest are in Ireland (1.2 %), the Netherlands (0.4 %) and Slovenia (0.1 %). Across all countries, households in the poorest quintile have the highest rates of catastrophic spending; on average, two-thirds of households with catastrophic spending are in the poorest quintile (64 %). Catastrophic spending is always higher in the poorest than the richest quintile (Fig. 1). In countries such as France, Czechia and Luxembourg, catastrophic incidence is more than 75 times higher in the poorest than the richest quintile.

Using the SDG indicator (bottom panel, Fig. 1), the highest rates of catastrophic spending are in Portugal (31.0 %), Greece (28.9 %) and Bulgaria (27.2 %), and the lowest rates are in the Netherlands (2.6 %),

Table 1
Descriptive statistics.

	Single parent household (%)	Person living alone (%)	Number of economically inactive adults in household	Number of people > 65 years in household	Number of children in household	Urban (%)	Mean relative consumption expenditure per person – 1
Belgium	3.6 %	29.6 %	0.61	0.27	0.46	94.1 %	0.20
Bulgaria	0.7 %	26.3 %	0.64	0.63	0.25	64.6 %	0.13
Cyprus	1.2 %	17.6 %	0.71	0.49	0.40	70.1 %	0.23
Czechia	2.9 %	26.3 %	0.52	0.29	0.39	64.6 %	0.09
Germany	2.0 %	30.6 %	0.42	0.38	0.30	89.3 %	0.19
Denmark	2.6 %	31.6 %	0.36	0.38	0.34	58.2 %	0.14
Estonia	1.3 %	23.3 %	0.63	0.46	0.38	32.7 %	0.22
Greece	0.8 %	25.4 %	0.70	0.74	0.32	64.2 %	0.25
Spain	1.3 %	16.3 %	0.77	0.47	0.41	69.9 %	0.20
Finland	1.2 %	27.3 %	0.43	0.49	0.33	72.6 %	0.16
France	5.4 %	26.7 %	0.66	0.36	0.59	69.3 %	0.19
Croatia	0.6 %	22.2 %	0.84	0.56	0.36	51.1 %	0.16
Hungary	1.5 %	29.6 %	1.31	0.43	0.33	51.2 %	0.14
Ireland	4.0 %	22.9 %	0.66	0.32	0.62	65.7 %	0.17
Italy	1.1 %	27.5 %	0.66	0.54	0.30	79.0 %	0.25
Lithuania	1.4 %	21.2 %	0.59	0.52	0.28	38.2 %	0.19
Luxembourg	0.8 %	19.8 %	0.72	0.10	0.25	81.1 %	0.18
Latvia	2.2 %	29.6 %	0.37	0.51	0.35	48.0 %	0.22
Malta	1.4 %	14.2 %	0.88	0.38	0.46	100.0 %	0.23
Netherlands	1.7 %	23.5 %	0.44	0.35	0.40	89.7 %	0.13
Poland	1.3 %	19.0 %	0.74	0.40	0.45	55.6 %	0.22
Portugal	1.7 %	19.8 %	0.64	0.54	0.34	65.3 %	0.25
Romania	0.7 %	33.1 %	0.54	0.53	0.21	54.8 %	0.13
Sweden	6.1 %	19.5 %	0.25	0.31	0.55	41.5 %	0.15
Slovenia	0.7 %	13.8 %	0.84	0.46	0.35	50.8 %	0.16
Slovakia	1.8 %	22.1 %	0.82	0.36	0.36	58.4 %	0.14
United Kingdom	3.9 %	28.5 %	1.21	0.40	0.40	87.6 %	0.21
Total	1.8 %	25.4 %	0.63	0.43	0.36	69.8 %	0.19
Minimum	0.6 %	13.8 %	0.25	0.10	0.21	32.7 %	0.09
Maximum	6.1 %	33.1 %	1.31	0.74	0.62	100.0 %	0.25

Note: relative consumption expenditure per person reflects per person consumption relative to median per person annual consumption in each country, minus 1.
Source: authors.

The WHO/Europe indicator
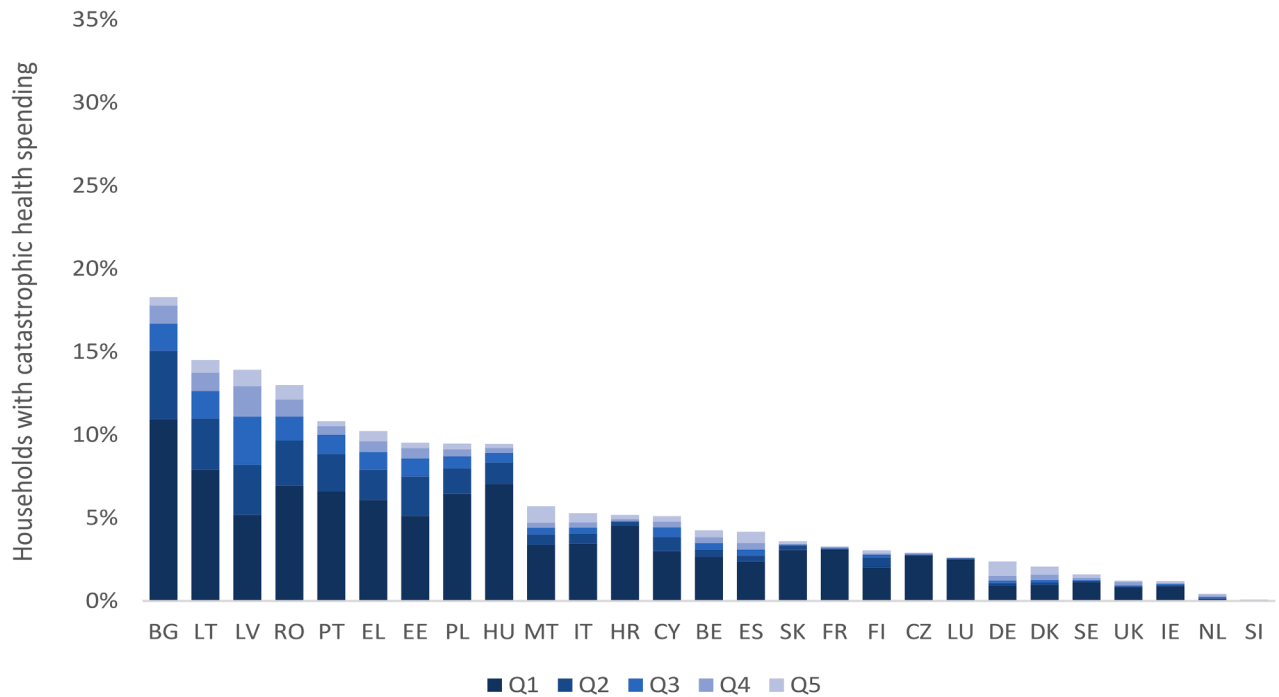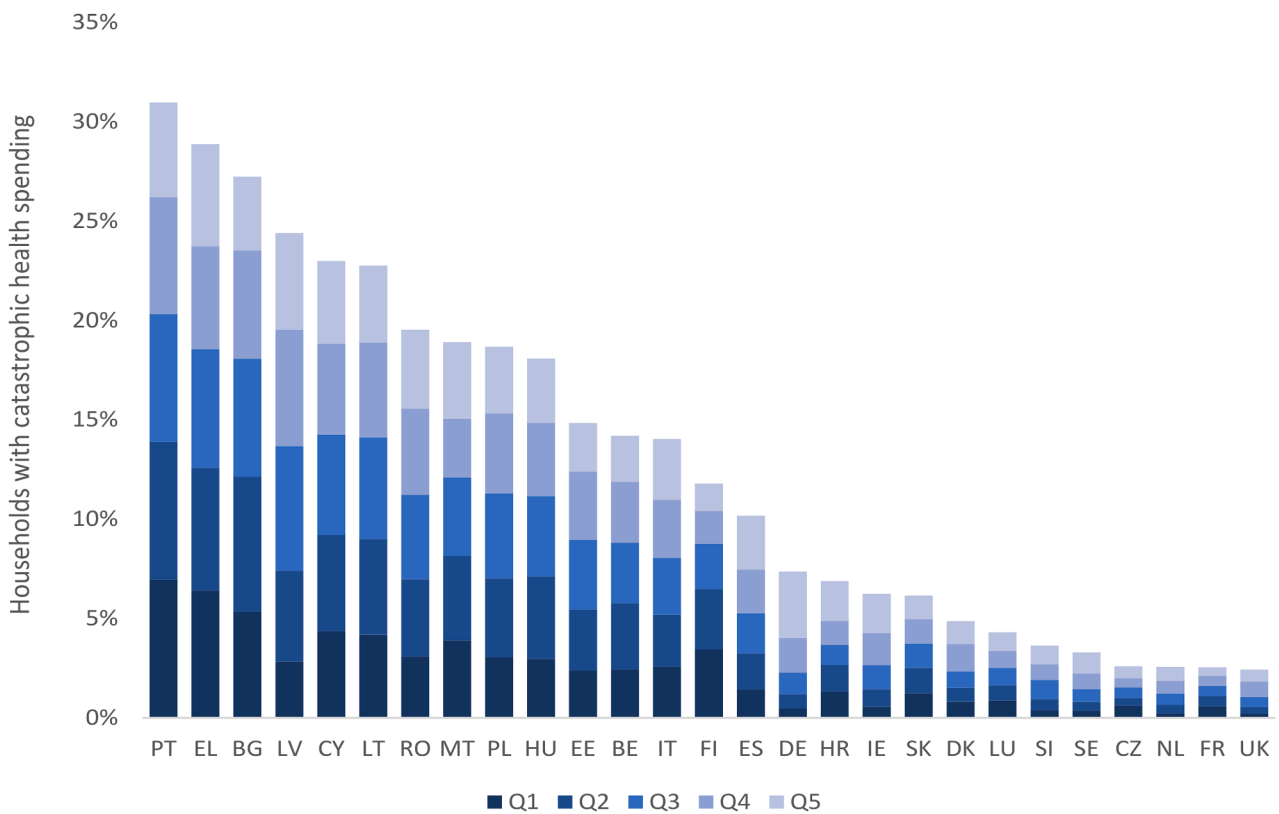

The SDG indicator

Fig. 1. The incidence of catastrophic health spending by consumption quintile and indicator.
Note: The Netherlands Household Budget Survey does not collect data on the annual deductible amount households pay out-of-pocket for covered services; our simulations suggest that catastrophic health spending could be underestimated by up to 1.8 percentage points in the Netherlands in 2015 but these data are not adjusted to reflect that potential underestimation. Source: authors.

France (2.5 %) and the United Kingdom (2.4 %). Across all countries, less than a fifth of catastrophic spenders (17 %) are in the poorest quintile. In 16 countries, the incidence of catastrophic spending is higher in the fifth than the first quintile. In countries like Germany, Ireland, the Netherlands, Sweden and the United Kingdom, catastrophic incidence is at least three higher in the richest than the poorest quintile.

Table 2 sets out the model results.

Using the WHO/Europe indicator (column 1, Model 1) we find that, across countries, single parent households, those with more economically inactive adults, more adults aged over 65, those living alone, households with more children or those spending more per person on medicines have a statistically significantly higher risk of experiencing catastrophic spending. Households with a higher relative consumption expenditure per person and households in urban areas have a lower probability of experiencing catastrophic spending.

Using the SDG indicator (column 3, Model 1) there are some important differences. Although households with a higher relative consumption expenditure per person are more likely to experience catastrophic spending, the association is not statistically significant. Households in urban areas and those with fewer children are less likely

to experience catastrophic spending, but in both cases the association is not statistically significant.

Columns 2 and 4 of Table 2 contain the full models, including country-level policy variables for both catastrophic spending indicators.

For the WHO/Europe indicator (column 2, Model 2), the main effects of co-payment exemptions for low-income households, low-fixed co-payments, and income-related caps are negative and statistically significant, indicating that the presence of these policies is associated with a reduced risk of catastrophic spending across all households. However, the interaction terms are always positive, suggesting that the association between co-payment policies and a lower risk of catastrophic spending declines as household relative consumption expenditure per person increases.

For the SDG indicator (column 4, Model 2), the main effects of co-payment exemptions for low-income households and income-related caps are negative but not statistically significant; the main effect of low-fixed co-payments is negative and statistically significant. The interaction between low-fixed co-payments and relative consumption expenditure per person is positive but not statistically significant. The coefficient on government spending as a share of current spending on

Table 2
Model results.

Variables	(1) WHO/Europe indicator: Model 1	(2) WHO/Europe indicator: Model 2	(3) SDG indicator: Model 1	(4) SDG indicator: Model 2
Mean daily consumption per person by country and year	−0.000449 (0.00133)	−0.000361 (0.00127)	−0.00263 (0.00196)	−0.00110 (0.00155)
Single parent	0.0109[c] (0.00566)	0.0133[a] (0.00461)	0.00697 (0.00645)	0.00867 (0.00592)
Number of economically inactive adults	0.0252[a] (0.00354)	0.0245[a] (0.00375)	0.00532[b] (0.00249)	0.00505[b] (0.00237)
Living alone	0.0389[a] (0.00744)	0.0387[a] (0.00772)	0.0277[b] (0.0114)	0.0276[b] (0.0116)
Number > 65 years	0.0433[a] (0.00594)	0.0424[a] (0.00637)	0.0715[a] (0.0101)	0.0709[a] (0.0101)
Number of children	0.0124[a] (0.00359)	0.0126[a] (0.00330)	−0.00567 (0.00371)	−0.00545 (0.00350)
Urban	−0.0162[b] (0.00733)	−0.0140[b] (0.00670)	0.00120 (0.00268)	0.00246 (0.00256)
Relative consumption expenditure per person	−0.0407[a] (0.0127)	−0.0674[a] (0.00745)	−0.0117 (0.0151)	−0.0252[a] (0.00857)
Medicines spending per person per day	0.0423[a] (0.0119)	0.0421[a] (0.0118)	0.129[a] (0.0346)	0.129[a] (0.0346)
Exemption from co-payments for people with low incomes		−0.0403[b] (0.0157)		−0.0322 (0.0223)
Exemption from co-payments for people with low incomes * relative consumption expenditure per person		0.0184[b] (0.00941)		0.00339 (0.00934)
Low fixed co-payments		−0.0402[a] (0.0104)		−0.0405[a] (0.0139)
Low fixed co-payments * relative consumption expenditure per person		0.0272[a] (0.00696)		0.0182 (0.0123)
Income-related cap on co-payments		−0.0445[c] (0.0262)		−0.0346 (0.0410)
Income-related cap on co-payments * relative consumption expenditure per person		0.0404[a] (0.00645)		0.0226[b] (0.0111)
Government share of current spending on health		−0.0114 (0.135)		−0.362[b] (0.160)
2015	0.00726 (0.00548)	0.00701 (0.00570)	0.0119[c] (0.00705)	0.00809 (0.00612)
Constant	0.0287 (0.0349)	0.0702 (0.0938)	0.122[b] (0.0583)	0.374[a] (0.129)
Number of observations	505,217	505,217	505,217	505,217
Number of countries	27	27	27	27

Notes: robust standard errors are in parentheses.
We subtract 1 from relative consumption expenditure per person for each household to facilitate interpretation given the inclusion of interaction terms.
Source: authors.
 [a] $p < 0.01$.
 [b] $p < 0.05$.
 [c] $p < 0.1$.

health is negative for both methods but only statistically significant for the SDG indicator.

To facilitate interpretation of the results, we present predicted probabilities – LISAs – under different co-payment policy scenarios for both indicators using Model 2. We consider three LISAs. For LISA1, we assume that LISA1 is an economically inactive 65-year-old living alone in a city; LISA1's consumption levels are 50 % of the per person median in their country. For LISA2, we assume a household with an economically inactive adult with two children living in a rural area; LISA2's consumption levels are 70 % of the per person median in their country. LISA3 is a multigenerational household living in a city with two people over age 65, 1 child, and three economically inactive adults; LISA3's consumption levels are 30 % of the per person median in their country. For all LISAs all other variables are held at sample means.

We then estimate the risk of being a catastrophic spender under different combinations of protective co-payment policies for outpatient prescribed medicines.

We present results for LISA1 (see Supplementary Material Fig A1 and Fig A2 for the results for LISA2 and LISA3). When none of the three protective policies are in place, LISA1's predicted probability of being a catastrophic spender is 19.1 % using the WHO/Europe indicator (95 % CI 14.9 % - 23.3 %) and 23.5 % using the SDG indicator (95 % CI 16.7 % - 30.2 %) (Fig. 2). The presence of protective policies reduces the predicted probability for both indicators – from 19.1 % to 2.3 % for the WHO/Europe indicator if all three protective policies were in place and from 23.5 % to 10.5 % with the SDG indicator – but there are clear differences. Using the SDG indicator, confidence intervals for every combination of protective policies overlap with those for no protective policies and are generally wider than confidence intervals using the

WHO/Europe indicator. For LISA1, LISA2 and LISA3, when using the WHO/Europe indicator, introducing just one of the protective policies is not associated with a statistically significant difference in the risk of catastrophic spending (compared to no policies), but any combination of two or more protective policies is associated with a statistically significant lower risk of catastrophic spending compared to no protective policies.

4. Discussion

In this study we use harmonized household budget survey data for over a half a million households in Europe to compare two indicators of measuring catastrophic health spending. Our analysis suggests that the WHO/Europe indicator captures equity better than the SDG indicator because it finds the incidence of catastrophic spending to be concentrated among poorer households, whereas the SDG indicator does not find any substantive differences in catastrophic incidence in richer and poorer households. Our analysis also suggests that the WHO/Europe indicator is more sensitive to cross-country differences in the use of policies to protect people from co-payments for outpatient prescribed medicines. In contrast to the SDG indicator, the WHO/Europe indicator finds that the use of protective policies – particularly in combination – is associated with a reduced risk of catastrophic spending after adjusting for household characteristics and these effects appear to be strongest in poorer households.

There are several limitations with our analysis. First, there is some uncertainty in our estimates, which may reflect the fact that the selected protective policies are not applied uniformly across countries. As a result, our analysis is not an assessment of the effectiveness of the three
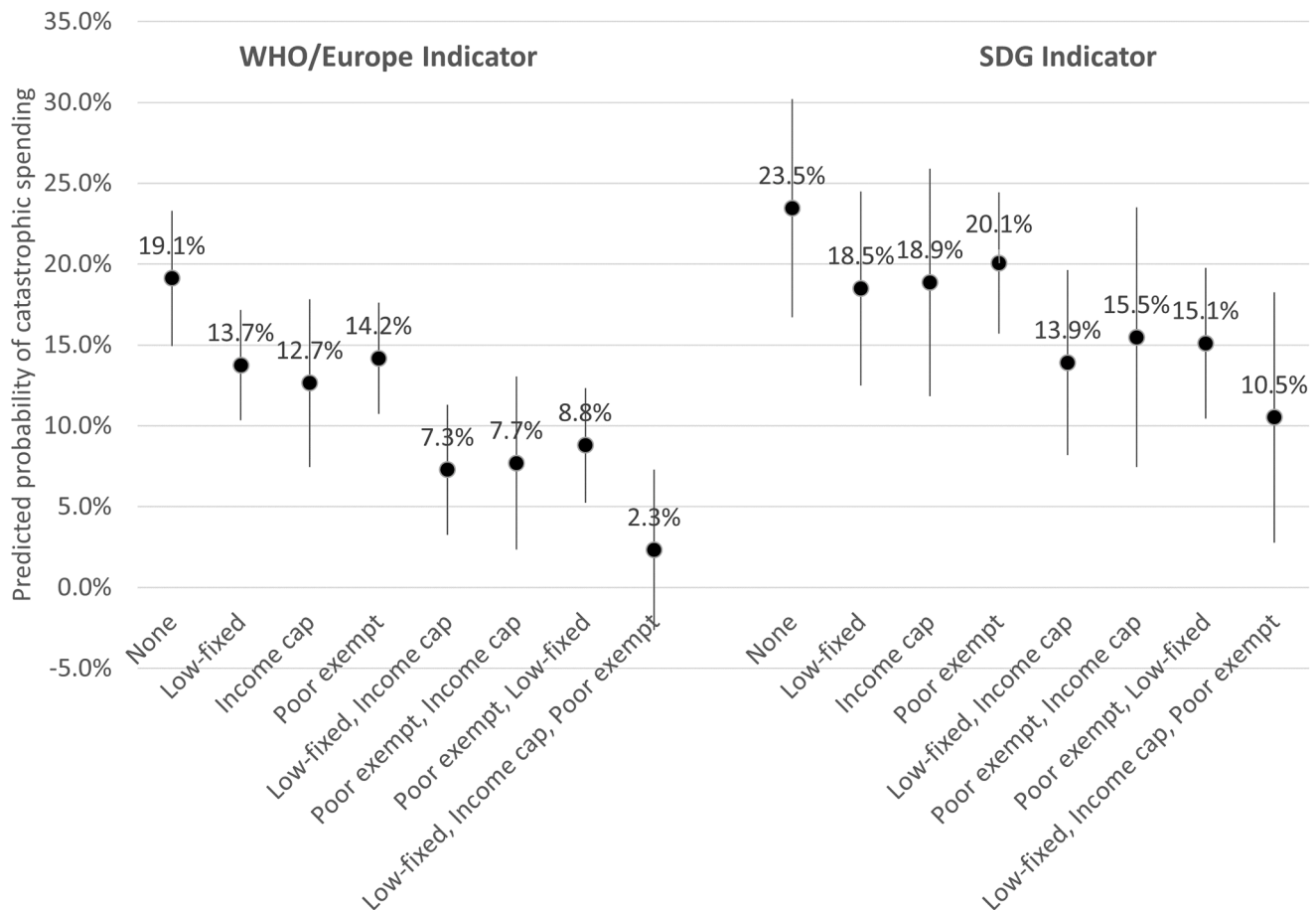

Fig. 2. Predicted probabilities and 95 % confidence intervals under different protective co-payment policy scenarios for LISA1, WHO/Europe and SDG indicators. Source: authors.

protective policies and should not be used to infer that one protective policy is more effective than another at reducing the risk of catastrophic spending. However, the finding that only low-fixed co-payments lead to a statistically significant lower risk of catastrophic spending using the SDG indicator may reflect the following factors: low fixed co-payments are likely to be more protective for richer than poorer households; the SDG indicator finds a disproportionately high share of richer households to be catastrophic spenders; and poor households can experience catastrophic spending even when spending relatively small amounts using the WHO/Europe indicator .

Second, although we use country random effects and adjust for both the government share of current spending on health and the country-year mean of per person consumption, we cannot be absolutely sure that there are no other country-specific factors influencing our results due to the lack of variability in the selected protective policies over time. That said, the wide variation in the use of these policies among countries with similar income levels seems to suggest that there is no clear pattern of richer countries having more protective policies than poorer countries.

Third, our analysis assesses the risk of catastrophic spending conditional on a selection of policies that are commonly used in EU countries to protect people from co-payments for outpatient prescribed medicines. We could have included other protective policies (for example, non-income related caps on co-payments or private or voluntary health insurance (VHI) covering co-payments), but these policies are either applied very differently in different countries (e.g. non-income related caps) or not frequently applied (VHI covering co-payments), so would not have strengthened the analysis.

Fourth, we have assumed that the policies we have included in our analysis are protective – that is, they are effective at reducing out-of-pocket payments for households – but we cannot confirm this using the data we have. It is possible that in some countries these policies are not as protective as they should be because people face administrative barriers to benefiting from them (for example, where people have to apply retrospectively for exemptions or caps).

Finally, neither of the indicators capture variations in unmet need, which is a major limitation of all financial hardship indicators [13].

5. Conclusion

We find that LISAs can be a useful method for comparing the risk of financial hardship caused by out-of-pocket payments (i.e. the risk of catastrophic health spending) across countries among households with similar characteristics. LISAs can also be used to demonstrate to policymakers the potential benefits of introducing protective coverage policies. To this end, we find that the three protective coverage policies studied in this paper, particularly when used in combination, can have meaningful effects on the risk of catastrophic spending. At the same time, a country's decision to introduce new coverage policies should be based on rigorous analysis addressing questions such as who experiences catastrophic spending, what sorts of health services those people are purchasing, and why people are using those services. This will naturally vary across countries.

It is important to emphasize, that the indicator selected to measure financial hardship matters: unlike the WHO/Europe indicator, the SDG indicator is not sensitive to equity or to coverage policy in Europe. As a result, we argue that it would be more effective to monitor progress towards UHC in Europe using the WHO/Europe indicator, which is not

only more likely to highlight the risk of financial hardship among the households most in need of financial protection, but is also able to highlight the potential impact of changes in policy at country level.

CRediT authorship contribution statement

Jonathan Cylus: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Sarah Thomson:** Writing – review & editing. **Lynn Al Tayara:** Writing – review & editing. **José Cerezo Cerezo:** Writing – review & editing. **Marcos Gallardo Martínez:** Writing – review & editing. **Jorge Alejandro García-Ramírez:** Writing – review & editing. **Marina Karanikolos:** Writing – review & editing. **María Serrano Gregori:** Writing – review & editing. **Tamás Evetovits:** Writing – review & editing.

Declaration of competing interest

No ethics approval was needed as this analysis uses anonymized, secondary data.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2024.105136.

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