

# Taking from the Disadvantaged? Consumption Tax Induced Poverty across Household Types in Eleven OECD Countries

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*Consumption taxes are a policy tool that shape the income distribution and potentially thwart the redistributive goals of social policy. Different household types might be affected differently due to diverging income positions and consumption levels. This study examines the change in poverty across household types when accounting for consumption tax payments. To this end, the study draws on harmonised data from eleven OECD countries in the Luxembourg Income Study (LIS). Implicit indirect tax rates are estimated from national accounts and poverty rates before and after subtracting consumption taxes are investigated. The results indicate significant variation across household types. In most countries, large family and single parent households experience the highest poverty increase. Ultimately, the increase in poverty across countries is positively associated with the consumption tax level.*

**Keywords:** Poverty, consumption tax, household type, social policy.

## Introduction

For the last fifty years, taxes on consumption have been on the rise in many countries. Consumption taxes are taxes and excises levied on the purchase of goods and services. In contrast to income taxation, consumption taxes accrue when a household spends its disposable income on consumption. Therefore, inequality and poverty measures of disposable income do not take consumption tax payments into account. In a globalised economy, consumption taxes allow states to secure a steady source of revenue because the consumption of households is less mobile than, for instance, capital. However, when several governments announced a temporary cut of the value-added tax (VAT) rates as part of their stimulus packages against the economic impact of Covid-19 in 2020, economists quickly pointed out how a cut in VAT-rates could not only boost private consumption but also particularly help the poor (Bach, 2020).

Like most social policy instruments, consumption taxes affect what households can or cannot afford. Poor households pay a higher share of their disposable income in consumption taxes simply because the share of income spent on consumption does not increase proportionally with income. In contrast, high-income households spend more on mortgages or save a substantial fraction of their income – both of which does not attract consumption taxes. By affecting different strata differently, consumption taxes contribute to the redistribution of income, which is a core domain of social policy. By particularly assigning a burden on the poor, consumption taxes, however, often undermine the

redistributive goals of social policy (Collins *et al.*, 2020). Therefore, social scientists interested in redistribution tend to overestimate the resources of households when looking at disposable income. Hence, this study argues that to properly address the life chances of individuals and the way social policy influences them, consumption taxes have to be taken into account – and particularly so at the lower end of the distribution.

Poor individuals, high consumption expenditures and, hence, consumption taxes, are not randomly distributed across household types. Some types of households are more exposed than others because they have systematically lower income levels and persistently higher consumption needs. In particular, single parent households and large families are more prevalent among the poor. Couples without children might be affected less by consumption taxes due to similar consumption patterns, i.e., they can share goods they need. In contrast, large families and single parents might not benefit from economies of scale in the same way because family members have substantially different consumption needs (for instance, schooling equipment expenses, age-dependent clothing or even diapers). Thus, it is argued that the consumption tax induced increased vulnerability (Imai *et al.*, 2010) – that is, the impact of consumption taxation on poverty differs across types of households. Differences in vulnerability matter because politicians may not be aware of the particular burden some household types have to bear and, therefore, neglect the significance of consumption taxes for social participation. The study at hand, therefore, aims to examine the relevance of consumption taxes for poverty across household types.

Since income positions and consumption levels differ systematically across household types, an examination of consumption taxes across types of households is of particular interest because poverty rates of household types may be affected differently. Looking only at the overall pattern could overlook the variations in vulnerability across household types. Furthermore, because taxes on consumption vary greatly across countries, a comparative setting should provide additional insights in the role of consumption taxes. Due to this cross-national variation, a comparison of public redistribution and poverty levels across countries without taking into account consumption taxes provides only an unfinished picture. Therefore, this article aims to address the research interest of *how consumption taxes elevate poverty across household types and countries*.

To address poverty due to consumption taxes, poverty rates that emerge after subtracting consumption taxes paid from disposable household income are calculated. This is sometimes referred to as *consumable household income* (Lustig, 2018). Following the approach of Eurostat when examining the change in poverty that is due to housing costs or public transfers (Maestri, 2015; Eurostat, 2018), the poverty line is fixed at fifty percent of median disposable household income to calculate poverty rates after deducting consumption taxes. By definition, therefore, this measure of *consumable income poverty* will be above the disposable income poverty level. The increase in poverty for different household types is estimated. Finally, this article examines consumption tax induced poverty of small families, large families, single-parents, single person households and couples without children, where ‘small families’ refer to couples with less than three children and ‘large families’ to those with three or more.

To exploit the comparative setting, consumption tax induced poverty is examined across eleven OECD countries that show substantial variation in consumption tax rates. To this end, this study relies on harmonised income and expenditure data from the Luxembourg Income Study. Furthermore, the analysis draws on OECD statistical data from national accounts. To estimate taxes on consumption, the Eurostat procedure of

calculating implicit indirect tax rates by dividing total national household expenditures by consumption tax revenue is applied (for further details, see Quest *et al.*, 2019). The concept of consumption taxes includes all indirect taxes on consumption, such as value-added-taxes (VAT) and excise duties on selected products – for instance, on cigarettes, alcohol, tobacco or fuel. These different types of taxes on consumption are collected ‘indirectly’ insofar as the state does not collect the tax from the person who ultimately bears the tax burden (consumer) but through intermediates (the seller).

By examining consumption tax induced changes in poverty for different household types in different countries, this article contributes to our understanding of the social and economic consequences of consumption taxes. More specifically, this study examines how different types of households are affected differently and, hence, provides valuable evidence for policymakers.

### Previous research

Recently, scholars addressed the relevance of the tax mix for income inequality at the aggregate level (Iosifidi and Mylonidis, 2017). Within the last years, however, taxation as a means of social policy has been on the rise (Ruane *et al.*, 2020). Due to the low availability of reliable income and expenditure data on the cross-national level, comparative research on consumption taxes is scarce (for a notable exemption, see Figari and Paulus, 2015). Because consumption is often used as an indicator for the standard of living in low-income countries, existing research on indirect taxation often focused on non-OECD countries (Lustig *et al.*, 2014). Most literature on the topic, however, looks at post-consumption tax inequality at the aggregate level only (Decoster *et al.*, 2010). These studies highlight the regressive nature of indirect taxes and, hence, their particular burden on the poor (Newman and O’Brien, 2011). Nevertheless, researchers in sociology and economics of the family have lamented the lack of attention towards the role of consumption taxes in the redistributive effort of taxes and public transfer systems when investigating poverty rates for different types of households (Maldonado and Nieuwenhuis, 2015; Rothwell and McEwen, 2017). This article aims to fill this gap.

#### *Regressivity and inequality*

Previous research uniformly highlighted the regressive nature of indirect taxes (Prasad and Deng, 2009; Ruane *et al.*, 2020). In general, a tax is called ‘regressive’ when the share of income spent on the tax decreases with income. Studies evaluated the regressivity of consumption taxes and the corresponding distribution of indirect tax burdens across the income strata (Decoster, 2005; Decoster *et al.*, 2010). National case studies provided compelling evidence of how consumption taxes elevate the Gini index (Rossignolo, 2018). Others examined the overall change in income inequality that emerges after taking consumption taxes into account across a wider range of countries (Figari and Paulus, 2015; Blasco *et al.*, 2020). Blasco *et al.* estimate a rise in the Gini index due to consumption taxes of about 0.03 at the mean. However, the change in inequality that is due to consumption taxation provides only a general picture. While a change in Gini could also come from changing patterns in the upper income strata, the focus on poverty allows for particularly addressing those who consumption taxes do the most harm to.

## Poverty

As Martin and Prasad (2014) pointed out, little is known regarding how taxes affect the poor. This is particularly true for regressive consumption taxes. Starting from a historical perspective, Newman and O'Brien (2011) impressively document the lasting reliance of the Southern U.S. states on regressive taxes and the corresponding implications for the poor. Nevertheless, taking an international perspective, consumption taxes are rather low in the U.S. Comparative literature emphasises that consumption taxes are higher in European countries, particularly in the Scandinavian welfare states (Prasad and Deng, 2009). Other studies highlight the distributional effects of singular indirect taxes such as a carbon tax (Berry, 2019). Most research on poverty and indirect taxation, however, examines its effects in low- and middle-income countries only. These studies are mainly attributed to the 'Commitment to Equity' project, which aims to reduce inequality and poverty by providing comprehensive tax incidence analysis for policymakers (Lustig, 2018). Scholars of the project provided invaluable insights into the modification of poverty due to consumption taxation. They show an increase in poverty rates in Argentina (Rossignolo, 2018), Brazil (Pereira, 2018), Chile (Martinez-Aguilar *et al.*, 2018), and many other Latin American, African, and Arabic countries due to consumption taxes (Lustig, 2018). A major focus of these studies is how the modification of poverty varies between rural and urban regions and among ethnic groups (see, e.g., Cabrera *et al.*, 2015).

Methodologically, these studies focus on extreme poverty lines, such as having disposable income below \$2.50 per day. They, therefore, hold the poverty line constant before and after the subtraction of indirect taxes. While applying an extreme poverty concept to European countries does not seem fruitful, the idea of a fixed poverty line could provide valuable insights in the change in poverty rates when subtracting consumption taxes.

Besides the scarce research on consumption taxes and poverty, there is a bulk of literature on poverty and welfare state efforts, examining, for instance, social expenditure and poverty (Caminada *et al.*, 2012) or poverty and social rights (Alper *et al.*, 2021). Furthermore, studies scrutinised the significance of social policy systems for single-mother poverty (Brady and Burroway, 2012; Chzhen and Bradshaw, 2012). In addition, previous research evaluated poverty and social policy by addressing policy instruments separately (Leventi *et al.*, 2019) or in the light of targeting and universalism (Brady and Bostic, 2015). For an overview of how policy and institutions shape poverty, see Brady and Burton (2017). While these and many other studies provided invaluable insights into the reduction of poverty due to tax and transfer systems, they did not consider consumption taxes.

Hence, an examination of variations in poverty due to indirect taxation across household types is still missing. If different household types are affected differently due to their household composition, then redistribution through consumption taxes is not just about vertical inequality but about penalising specific family formations. Thus, in the following, the main conceptual determinants of differences across household types are discussed.

## Conceptual background

The effects of indirect taxation on the poverty rates of different types of households might differ from the overall findings of increased inequality and poverty in previous literature

due to two major factors. First, household types are not distributed equally across the income strata, with some types of households being more prevalent among the poor than others. Second, types of households have systematically different consumption levels, depending on the similarity of consumption needs and economies of scale. In addition, cross-country differences in indirect tax rates should lead to further variations in consumption tax induced poverty among household types across countries.

### *Income position*

As known from the labour market literature, single parents are particularly prevalent among the poor, while couples without children generally enjoy positional advantages (Maldonado and Nieuwenhuis, 2015). In general, the lack of a second earner and shared childcare and homemaking arrangements provide difficulties in time and money management. Because the vast majority of single parents are women, gender disparities might add to these structural employment disadvantages. Nevertheless, large families are known as well to be more likely at risk of poverty – for instance, in families with three and more children, mothers' educational attainment tends to be lower and early childbearing higher in the UK (Bradshaw *et al.*, 2006). Both patterns affect labour market earnings and, hence, increase the probability of poverty (Laird *et al.*, 2018).

In the present study, the mean equivalised disposable household income of the five household types reflects these patterns. With a mean equivalised monthly income of \$23000 in purchasing-power-parity adjusted US dollars across countries, couples without children are on average better off than all other household types although little different from small families (\$22900). Single person households (\$17600) and large families (\$19700) on average have a lower income, with single parents (\$16400) being the worse positioned household type across countries. Noteworthy, disposable household income does already take government transfers into account. Consumption taxes paid may, hence, replicate this picture.

### *Consumption*

Consumption expenditure generally varies across the income strata. While affluent households spend more in absolute terms, the share of income to be consumed decreases with increasing income. Poor households spend a higher share of their disposable income on consumption simply because consumption does not increase proportionally with income. Figure A1 in the appendix shows how consumption as a share of disposable income decreases with increasing income quintiles in the study at hand. In addition, different household types have different consumption patterns. Therefore, they differ in their expenditure shares with large families, small families, and single parents spending a higher share of their disposable income on consumption when compared to couples without children.

Consumption expenditure varies across household types due to household size and household composition (Nelson, 1988). Larger families likely need to spend more on basic consumption such as food and electricity to make ends meet because they have more mouths to feed. Nevertheless, economies of size could alleviate the consumption pressure for larger households. Unlike single person households, for instance, they can share durable goods, such as washing machines, cars, and electricity costs. Economies of scale,

however, might depend on the similarity of consumption needs. Besides durable goods and food, the consumed goods of children and adults might be rather different from each other – for instance, new parents in the U.S. spend up to \$125 a month on diapers (Massengale *et al.*, 2017). To account for the heterogeneity of consumption needs, researchers apply equivalisation methods with different underlying assumptions regarding economies of scale (Lanjouw *et al.*, 1998). Previous research indicated that the consumption needs of household members vary by individual demographic characteristics, such as age (Fernández-Villaverde and Krueger, 2007) and gender (Sobhani and Babashahi, 2020). Hence, the household's demographic composition is pivotal when addressing economies of scale. If, for instance, the consumption needs of household members are divergent, the household would need more income to achieve a similar standard of living as a household with rather similar consumption needs among its members. Therefore, families with similar needs (for instance, couples without children) might benefit more than families with diverging consumption necessity (e.g., large families). Single person households, however, might not benefit from economies of scale at all. Hence, it is expected that couples without children benefit most from economies of scale due to similarity of consumed goods. In other words, because the differences in economies of scale materialise in differences in consumption expenditure levels, some household types pay relatively more consumption taxes and should, therefore, be more vulnerable regarding to consumption tax induced poverty.

#### *Indirect tax rates*

Consumption taxes vary greatly across countries and may be collected in different ways. Within the OECD, value-added-tax rates (VAT) vary between zero in some states in the U.S. and twenty-seven percent in Hungary (OECD, 2018). Many countries apply reduced rates for basic consumption, such as food and beverages; other countries do not tax certain goods at all. Beyond the value-added-taxes, countries levy excise duties on selected products, such as cigarettes, alcohol, tobacco, or fuel. In general, these excises serve to make undesired behaviour more expensive (Morse, 2009) and provide a stable revenue for the state (Beckert and Lutter, 2009). Estimating the implicit tax rate of all household expenditure, Blasco *et al.* (2020) confirm significant cross-country differences in indirect taxation. By dividing the total indirect tax revenue by the total household expenditure, the implicit tax rate is calculated from national statistical accounts. It, therefore, also incorporates all excise duties beyond the general VAT system. Hence, in most countries the implicit indirect tax rate is above the standard VAT rate and should provide a more comprehensive picture. Whilst the implicit consumption tax rate in Eastern European countries easily exceeds twenty percent, Switzerland surpasses the ten percent threshold only marginally. Table A1 in the appendix shows VAT and implicit indirect tax rates for the eleven OECD-countries in the study.

### **Analytical strategy**

#### *Data*

This study draws on microdata from the Luxembourg Income Study database. LIS is a cross-national collection of national datasets containing harmonised data on taxes,

income, and consumption expenditure. The country selection is restricted to those countries with full income and expenditure information at the household level. The eleven countries listed in Table A1 provide all requested information and are particularly well suited for two reasons. First, this country selection is not bound to an European setting only; although, all of them are OECD countries. Hence, the countries differ substantially in their institutional contexts, be it socially, culturally, or politically. Therefore, external validity should be considerable at least across the wider OECD area. Second, these countries provide significant variation in their consumption tax rates with implicit indirect tax rates ranging from below ten percent to over thirty percent.

The implicit consumption tax rate is derived from OECD data using the procedure documented by Eurostat (Quest *et al.*, 2019). The implicit consumption tax approach divides the total consumption tax revenue by nationally aggregated household expenditure. The resulting tax rate on national consumption, hence, is implicit insofar as it does only provide implicit information on the statutory tax rate. In line with previous research, it is assumed that the tax burden falls entirely on the consumer (Lustig, 2018).

All income information is equalised on a per capita basis, which divides the household income by the number of household members. Unlike other equalisation approaches, per capita equalisation does not assume economies of scale. Since indirect taxes are endogenous to consumption expenditure and, hence, depend on economies of scale, equalisation methods accounting for economies of scale may hide the variation of interest.<sup>1</sup> Ultimately, households are weighted using the LIS weights to make the results nationally representative. Missing expenditure information is imputed using multiple imputations ( $m = 5$ ).<sup>2</sup>

### Concepts

The main outcome of interest is the poverty status of each household. In line with previous research, poverty is measured as below fifty percent of median disposable household income. As mentioned above, *consumable income poverty* is defined as consumable income below this fixed poverty. Hence, by definition, consumable income poverty will be higher than disposable income poverty – given that every household has to pay at least some consumption taxes. A fixed poverty line is a common tool when, for instance, quantifying the effect of housing costs or social transfers on poverty (Eurostat, 2018) or the poverty alleviating effects of policy instruments (Leventi *et al.*, 2019). Following the literature, consumable income is estimated by subtracting the consumption taxes paid from disposable household income for every household.<sup>3</sup> Consumable income, hence, can be denoted as

$$chi_i = dhi_i - (c_i * ict_c)$$

where  $dhi_i$  refers to the disposable household income of household  $i$ ;  $c_i$  is the consumption expenditure of that household, and  $ict_c$  represents the implicit consumption tax rate of country  $c$ . Accordingly, consumable income poverty is defined as whenever

$$chi_i < \widetilde{dhi}_c * 0.5$$

where  $\widetilde{dhi}_c$  represents the median per capita disposable household income of country  $c$ .

Holding the poverty line constant across income concepts allows to quantify the increase in poverty from disposable to consumable income (i.e., the increase in the head-count ratio). In addition, the poverty line is not endogenous to other households' consumption behaviour. However, the usual pitfalls of addressing poverty with a head-count ratio still apply – most notably the fact that the poverty rate does not change if the positions of the poor worsen (for a detailed discussion, see Sallila *et al.*, 2006).

This article aims to scrutinise consumption tax induced poverty across household types. As outlined above, the household types can be couples without children, small families (couples with one or two children), large families (couples with three children or more), single parents, or single person households. These household types make up the vast majority of households in all countries and are distinguishable with regards to household size and composition. Noteworthy, households that do not fit into this scheme (such as living with non-relatives) are not reported in the main analysis due to the lack of underlying conceptual expectations.

### *Method*

The study at hand empirically addresses the change in poverty by comparing disposable and consumable income poverty rates across household types and countries. Furthermore, consumption tax induced poverty is assessed by constructing a dummy indicating a change from non-poor to poor as the dependent variable. The indicator equals one whenever a non-disposable-income-poor household becomes consumable-income-poor after subtracting consumption taxes. As a supplementary analysis, separate logistic regression models are estimated for each country in the study. Here, the household type indicator is regressed on the change in poverty status indicator described above. In addition to the household type variable, the following socio-demographic characteristics are included in the analysis due to their general association with poverty. The analysis includes the head of household's *education*, provided by LIS as low, medium, or high. The models also control for the head's *age*, *squared age*, *gender*, and *labour force status*. Average marginal effects are presented due to the straightforward interpretation and comparability of coefficients (Mood, 2010).

### **Results**

This study aims to evaluate the change in poverty rates before and after deducting consumption taxes (consumable income poverty) and the increase in poverty (consumption tax induced poverty) across household types. This section begins with descriptively showing levels of poverty across household types and countries. Table 1 indicates the headcount ratio of people with less than fifty percent of median per capita disposable household income for disposable and consumable income across household types and countries. As the table indicates, notably variation in poverty rates and poverty increases across countries and household types exist.

As expected, large families and single parents have higher poverty rates. That being said, the consumption tax induced increase in poverty of these household types is again above the poverty increase of the entire population in most countries. Nonetheless, countries differ substantially in poverty increases across household types – for instance, single parents in France and Australia have only slightly different disposable income

Table 1 Headcount ratio at consumable and disposable income per country and household type (poverty line at 50 per cent of median per capita disposable household income)

		Australia	Switzerland	Estonia	France	Hungary	Israel	Italy	South Korea	Mexico	Poland	Slovenia
<b>All</b>	Consumable income	16.49	12.56	22.15	19.90	19.02	29.75	24.38	19.02	21.57	17.37	19.15
	Disposable income	10.43	8.79	12.22	12.36	8.32	21.15	17.43	12.84	17.54	9.78	8.74
<b>Couple w/o children</b>	Consumable income	12.12	5.83	7.16	5.82	8.27	11.76	6.72	27.98	12.57	5.27	11.05
	Disposable income	4.97	3.70	2.83	2.64	2.60	5.77	2.96	22.71	9.76	2.54	3.34
<b>Small family</b>	Consumable income	12.62	13.18	21.60	18.64	17.40	15.66	26.67	11.16	16.49	13.64	20.38
	Disposable income	7.60	8.16	11.86	10.35	5.92	8.98	17.70	5.89	12.84	6.72	10.24
<b>Large family</b>	Consumable income	28.42	31.03	41.95	46.73	45.88	45.20	53.73	32.63	36.08	36.22	31.45
	Disposable income	20.37	26.20	23.54	34.38	24.99	34.57	43.67	21.31	30.19	22.65	13.60
<b>Single parent</b>	Consumable income	34.89	24.11	35.22	39.14	31.77	34.38	35.31	21.83	17.02	29.70	29.71
	Disposable income	26.52	16.95	20.51	25.71	24.69	22.39	27.31	15.16	13.21	18.08	14.90
<b>Single person</b>	Consumable income	8.55	4.44	12.13	10.46	11.12	15.62	6.00	31.83	4.77	4.79	16.02
	Disposable income	4.79	3.15	4.49	5.03	3.61	6.15	3.71	23.37	3.03	2.10	5.46

Note. Own calculations based on LIS data (weighted).

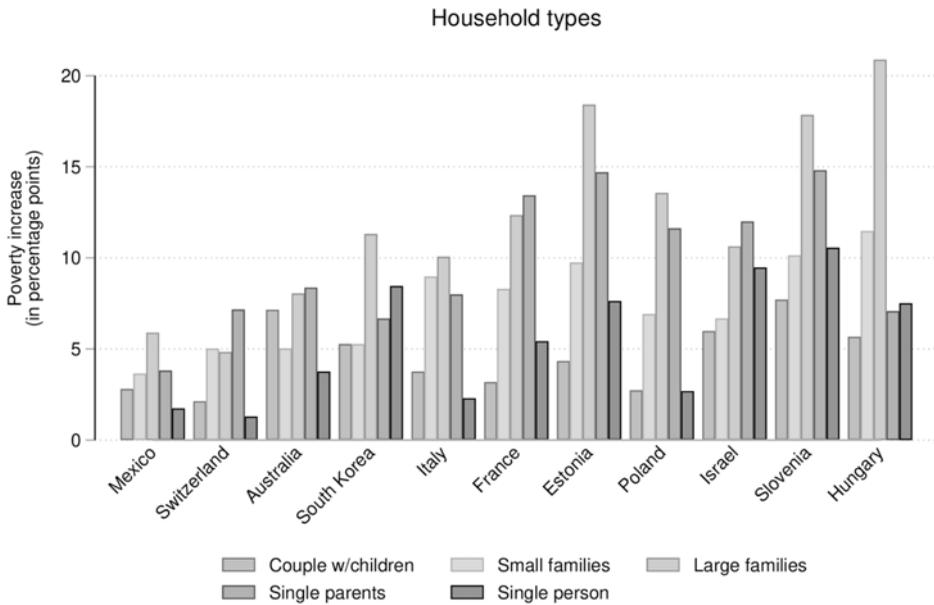


Figure 1. Poverty increase due to consumption taxes across household types (poverty line at 50 per cent of median per capita disposable income)

poverty rates. After deducting consumption tax payments, however, the percentage of poor individuals in single-parent households jumps to roughly thirty-nine percent in France compared to thirty-five percent in Australia.

In general, the higher poverty rates and the higher increase in poverty due to consumption taxation for large families and single parents in most countries is in line with the expectations. However, this might be entirely attributed to the socio-demographic characteristics of these households – for instance, the exceptionally high poverty rates for single person households and couples without children in South Korea can be attributed to the extraordinary prevalence of poverty among elderly households there (Ku and Kim, 2020). It is, therefore, pivotal to address the probability of a change in poverty status from the disposable to the consumable income measure across household types while controlling for socio-demographic characteristics associated with poverty. However, supplementary results from logistic regressions largely confirm the pattern presented in Table 1 (see Figure A2 in the online appendix).

As argued above, the increase in poverty should vary systematically across household types due to variations in consumption expenditure. Because members of single parent and large family households may have diverging consumption needs, they could be more likely to suffer from consumption taxes. Figure 1 indicates the percentage point increase in poverty due to consumption tax payments across household types and countries.

Compared to couple households without children, the results show some evidence for a higher consumption tax induced vulnerability of large families and single parents but less so for single person households – for instance, poverty among French single parent households increases by roughly 13 percentage points compared to three percentage point increase for couple households without children. Across most countries, poverty

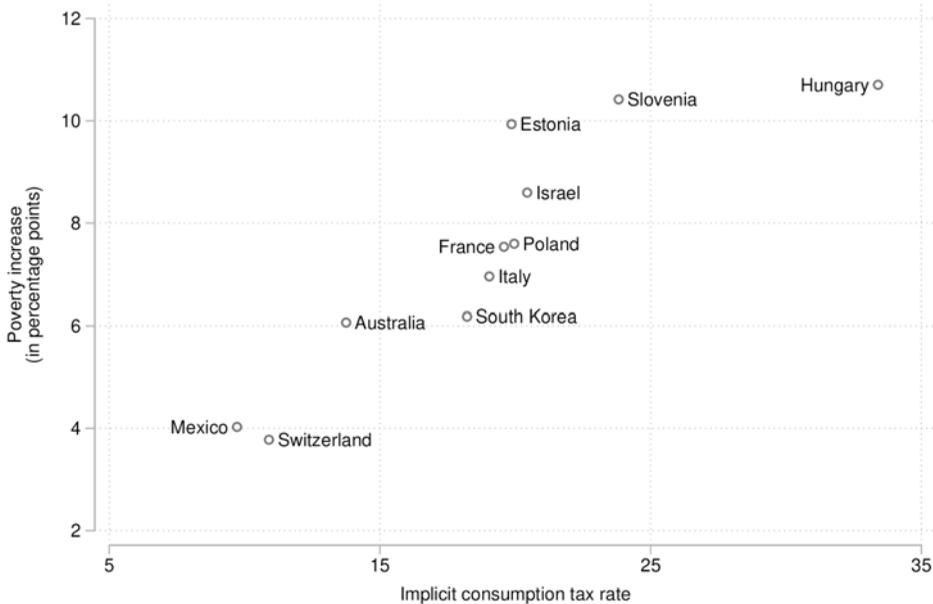


Figure 2. Overall poverty increase and implicit consumption tax rate (poverty line at 50 per cent of median per capita disposable income)

increases strongest among large families and single parent households while only a moderate increase in poverty is observable for couples without children.

Ultimately, Figure 2 indicates the overall percentage point increase in poverty plotted against the implicit consumption tax rate. The pattern reveals a clear positive association between consumption tax and poverty increase – for instance, consumption taxes in Slovenia and Hungary lead to an increase in poverty of over ten percentage points compared to about four percentage points in Mexico or Switzerland (which have lower implicit consumption tax rates). Taken together, the findings clearly indicate the relevance of consumption taxes for any discussion on poverty.

However, one might argue that the implicit consumption tax approach is not an appropriate method because it cannot account for different tax rates on different goods. Since most countries apply reduced tax rates on some goods, ideally the composition of the bundle of goods consumed by the household would be analysed. Given that many countries apply different rates by item (for instance, taxing sparkling wine differently than normal wine), this is not feasible with the data. Hence, if, for instance, some household types are more likely to consume goods with reduced value added tax rates, the analysis would overestimate the consumption tax burden of those household types. Therefore, the findings presented above are replicated with statutory consumption tax information from France (Table A2 in the appendix). Figure A3 and A4 in the appendix show that poverty estimates from statutory and implicit tax rates lead to almost similar results. Hence, the supplementary evidence suggests that implicit tax rates presented in the study are a good indicator for statutory rates. Thus, it is the level of consumption that drives consumption tax-induced poverty – rather than differences in consumed goods. However, findings from a country-case cannot be generalised because consumption patterns could vary

systematically across countries. As an additional check, the increase in poverty is estimated if all consumption would be taxed with reduced VAT rates only (Figure A5 and A6). This provides an assessment of the minimal impact of consumption taxes on poverty. Although levels decrease substantially, patterns are in line with the findings presented above.

## Discussion

In this study, the association of consumption taxes and consumable income poverty as well as consumption tax induced poverty across types of households has been examined in eleven OECD countries. Using harmonised data from the LIS, the study has shown that the increase in poverty due to the indirect tax payment varies substantially across countries and household types. Results indicate higher increases in poverty rates for large families and single parents in most countries. The findings, however, vary substantially across countries – associated with a higher percentage point increase in poverty.

The contributions of this study are many. First, by examining the implicit indirect tax rate, the study at hand contributes methodologically with an innovative implementation of an economic method to social policy research. To the author's best knowledge, this has not been done by any social policy study to date. Second, this study contributes to the extensive literature on the modification of poverty due to public redistribution. Unlike previous research, however, it provides some first insights on poverty levels after the deduction of consumption taxes. The study thereby addresses the resources (or the lack of such) of households when accounting for the fiscal intervention of indirect taxation. Third, the study advances previous research by examining differences in consumable income poverty across household types. This article, therefore, contributes by empirically addressing the differences across types of households that emerge due to higher consumption necessity and regressive consumption taxes. By doing so, this study sheds light on the unequal life chances of household types at the last redistributive stage.

However, the study at hand is limited in several ways. First, total consumption expenditure in the LIS includes the value of self-produced goods, which could bias the estimated tax burdens. However, this should be a less severe problem in OECD countries, where self-production is rather uncommon.

Second, poverty ought to be measured in multiple ways. Focussing only on the poverty line might be considered a poor measure of the harm consumption taxes do to the disadvantaged. However, since there is no straightforward approach to include consumption taxes in poverty measurements, the evidence provided in this study can be understood as a starting point for future research. Broader considerations of consumption taxes regarding the goals of social policy are urgently needed. As argued above, it is pivotal to understand consumption taxes as a policy tool affecting living conditions of households and, hence, as a field of genuine interest to social policy research.

The findings are relevant for society and policymakers alike. The study of consumable income poverty indicates that the common poverty measure of disposable income neglects the dimension of consumption taxes, which substantially shape the affordability of goods. Moreover, the comparative view of standard poverty rates across countries disregards significant variations in the role of indirect taxes regarding the income distribution. Although scholars prominently emphasised the necessity to consider taxation in poverty measurement (Brady, 2003), many researchers to date seem to think of income

taxation only. This study, however, particularly emphasises the systematic differences in consumption tax induced increased vulnerability across household types. By showing how single parents in particular are more likely to be pushed under the poverty line, this study highlights the unequal exposure to the hidden income deduction of consumption taxes. Hence, policymakers should bear in mind that taxes on consumption are not just particularly a burden on the poor, but furthermore, they specifically affect more vulnerable types of households.

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### Supplementary material

To view supplementary material for this article, please visit <https://doi.org/10.1017/S1474746422000203>

### Notes

- 1 Using alternative equivalisation approaches does not change the general trend or the country ordering.
- 2 Missing expenditure information is imputed for Australia (45.8 per cent), France (1.6 per cent), and Hungary (18.3 per cent).
- 3 Ideally, this measure would also include food price subsidies and other indirect subsidies (Lustig, 2017). Unfortunately, this is not feasible with the data.

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