

Taxes, Transfers, and Gender

Fiscal Policy Incidence across Fiscal and Care Categories in Jordan

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Abstract

Fiscal incidence analysis helps in understanding who contributes to and benefits from the fiscal system, and assessing the impact of fiscal policies in reducing poverty and inequality. Traditionally, the incidence of fiscal policy is assessed for households along the income distribution. In an attempt to tease out the gendered impacts of the fiscal system, this paper instead looks at how much different types of households in Jordan contribute to and benefit from current fiscal policies and the extent to which the fiscal system is helping to equalize post-market outcomes within and across groups. A household typology is constructed for Jordan based on households' demographic

characteristics, which not only determine which taxes and transfers a household experiences, but also influence the participation of women in economic activity outside the household because they affect the generation and allocation of care responsibilities. The paper shows that the receipt of in-kind benefits, primarily education, is what drives which groups that receive the largest net benefits from the fiscal system. The results also show that the fiscal system in Jordan is reducing within-group inequalities, which represent over 80 percent of total inequality for both fiscal and care groups. The fiscal system has a limited impact on inequalities across groups, but they are very small.

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Taxes, Transfers, and Gender: Fiscal Policy Incidence across Fiscal and Care Categories in Jordan

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I. Introduction

Fiscal policy—how public revenue is generated through different taxes and how it is spent—is one of the most powerful tools governments have for reducing poverty and inequality, but not all households are affected in the same way. Fiscal incidence analysis helps to understand who contributes to and benefits from specific fiscal policies and the whole fiscal system taken together. In this type of analysis, the incidence of fiscal policy is assessed for households² along the (market or pre-fiscal) income distribution to capture poverty and inequality reduction impacts of the fiscal system. A recent study of such type was conducted for Jordan (Rodriguez and Wai-Poi 2021). However, one could be interested in assessing how the fiscal system affects different types of households, not only across the income distribution, and on how much are poverty and inequality within and across those groups are affected through the fiscal system.

In this study, we look at the gendered impact of Jordan’s fiscal system. This is important because fiscal policy can have impacts for gender equality, not only because different instruments can affect men and women differently, but also because the fiscal system can influence household choices about work and care responsibilities, the distribution of expenses, and even intrahousehold decision-making. In the literature on fiscal incidence, to the extent gender impacts are considered, it tends to be in the reductive form of looking at differences between female- and male-headed households (Greenspun 2019). Female-headed households in Jordan are a small and selected group, most of them are widowed women.³ Consequently, the distinction by the gender of the household head may be insufficient to generate actionable policy recommendations which, for instance, help increase the participation of women in the labour force, and provides few policy-relevant conclusions with respect to the different economic, financial, and social needs of households of different demographic compositions. The study’s first contribution to the literature is on the definition of a household typology for Jordan, which is an exercise that varies across countries. In the absence of a standard typology, we define three groups as an empirical exploration. We construct two typologies based on households’ demographic characteristics, such as their composition by age, number of workers, children in school and pensioners. These characteristics play a significant role in determining which fiscal taxes and transfers a household experience and to what extent. They also influence the participation of women in economic activity outside of the household because they affect the generation and allocation of care responsibilities—how many and who bears them. Due to gendered social norms women often bear a larger burden, which in turn can prevent them from looking for paid employment, or restrict the type, duration, or location of work. We also define a third typology based on the participation of men and women in household income.

Once the household typologies are created, the next step is to assess how much different types of households in Jordan contribute to and benefit from current fiscal policies and the extent to which the fiscal system is helping to equalize post-market outcomes within and across groups. For this part of the analysis, we focus on the fiscal and care groups. Which types of households are benefiting or contributing more to the fiscal system? How much is the fiscal system in Jordan doing to reduce inequality across households? How much is it doing to reduce poverty for the households that need it the most? These are the questions that this study is set to answer.

² Analyses are generally conducted at the household level as data is often only available at this level and the benefits and levies of fiscal policy may not apply at the individual level.

³ According to DoS figures from the 2018 LFS, 14 percent of women aged over 15 years old were head of household. Close to three-quarters of them were widows.

We show that the receipt of in-kind benefits, primarily education, is what drives which groups receive the largest net benefits from the fiscal system. This echoes the finding in Rodriguez and Wai-Poi (2021) that much of the progressivity of the fiscal system in Jordan comes from these transfers. Our results also show that the fiscal system in Jordan is reducing within-group inequalities, which represent over 80 percent of total inequality for both fiscal and care groups. Most of the reduction happens between market and disposable income, that is, when direct taxes and transfers are added to the fiscal system. The fiscal system has very little impact on inequalities across groups, although they are very small to begin with.

The next section briefly reviews recent relevant literature. Section III presents the methodology. Section IV shows the results for fiscal and care household types and Section V concludes.

II. Literature review

Fiscal incidence studies have been conducted in many countries around the world, including various countries in the Middle East and North Africa (MENA) region,⁴ following a recognised methodology largely used in developing countries known as the Commitment to Equity (CEQ).⁵ This approach uses standard incidence analysis for each tax and transfer, where these fiscal instruments are allocated to households based on the information in national representative household surveys. This study is based on and extends the most recent fiscal incidence study for Jordan (Rodriguez and Wai-Poi 2021).⁶ It assesses the incidence of Jordan's main taxes and transfers as of 2018 using data from that year's main household survey, the Household Income and Expenditure survey (HEIS). The main finding is that Jordan's system of taxes and transfers is only modestly progressive, barely narrowing the pre-fiscal disparities. Comparing inequality based on households' market incomes with that based on their post-fiscal incomes (after paying income and consumption taxes as well as receiving government transfers and subsidized services), the authors find a fall of 6 points in the Gini Index, from 35.1 to 29.5 points. When considering only monetary taxes and benefits (that is, excluding non-cash education and health services), inequality falls by only 2.6 points. Out of 47 countries for which data is available, the degree of inequality reduction from fiscal policy that Jordan achieves is ranked in the bottom half, being 25th from top considering only cash taxes and benefits and 28th if also including education and health.

This work, like most other fiscal incidence analyses, focuses on the impact of the fiscal system across households ranked by their market or pre-fiscal incomes. In part, this choice is implicit in the CEQ fiscal incidence methodology because its main stated aims focus on income inequality and poverty. These aims are: i) to assess the degree of income redistribution and poverty reduction accomplished through the fiscal system; ii) to quantify how equalising and pro-poor are specific fiscal instruments; and iii) to assess the effectiveness of different fiscal instruments in reducing inequality and poverty (see Lustig 2018).⁷ The interest in vertical inequality is also reflected in the introduction of indicator 10.4.2—the difference in pre-fiscal and post-fiscal income inequality (measured by the Gini coefficient)—to the measurement of SDG 10 (reduce inequality within and between countries) in March 2020.⁸

⁴ Including the Arab Republic of Egypt, the Islamic Republic of Iran, Morocco, Tunisia and Jordan.

⁵ See <https://commitmenttoequity.org/>

⁶ An earlier fiscal assessment was also conducted for 2010 (A. Alam, Inchauste, and Serajuddin 2017) using the same methodology. See Rodriguez and Wai-Poi (2021) for a description of the changes in both studies.

⁷ A fourth aim refers to the assessment of fiscal reforms.

⁸ Following the proposal submitted by Oxfam, CEQ, and the World Bank.

But there is no reason why vertical inequality has to be the main emphasis of fiscal incidence analysis. A few studies use this methodology to examine other types of inequalities. Two studies in Latin America (Cabrera, Lustig, and Morán 2015; Bucheli, Rossi, and Amábile 2018) have looked at incidence across the ethnic composition of households, a salient marker of inequality in the region. One further study for the region (Lustig and Aranda 2015) has focused on rural/urban divisions. As for gender, there is only one unpublished study (Greenspun 2019), focusing also on Latin America, which comprehensively looks at the whole fiscal system rather than a specific set of taxes or transfers.

Fiscal policy can have impacts on gender equality. For example, there can be explicit or implicit provisions in a tax code or benefit determination criteria that affect men or women differently. In many countries, a wife can be considered the ‘additional worker’ in the household, in the sense that a husband is likely to work regardless of whether his wife is working. If joint filing of tax returns is required, or deductions for dependents can only be claimed once per household (as is the case in Jordan), then the wife’s earnings are implicitly being taxed at the top marginal tax rate for the household. Public provision or subsidisation of childcare is similarly more likely to reduce care responsibilities for women than men. Another example of fiscal policy with gender implications is social assistance transfers – transfers which go directly to women have been shown to both increase their intrahousehold bargaining power and be more likely to be spent on goods and services which benefit children (e.g. Duflo 2003; Thomas 1990), even if their direct ‘incidence’ cannot be said to fall on women only.

Greenspun (2019) notes that other works looking at gender incidence of fiscal instruments tend to do so in terms of looking at differences between female- and male-headed households. This author instead performs two analyses: first, looks at the direct incidence of the fiscal system on men and women. Noting that direct male and female beneficiary variables could only be assessed for programs and transfers that identified beneficiaries at the individual level. Secondly, she defines gender groups based on the head of household’s gender as well as on the contribution of men and women to household income. A pilot study for Armenia (Fuchs and Gonzalez 2022) also builds a similar categorization for this country. While these approaches for constructing household typologies are useful in some contexts, in Jordan, where very few women work or are household heads, their application might be limited to drive policy-relevant recommendations.

To complement this categorization, we focus instead on household demographics. Households’ composition by age and gender plays a significant role in determining which fiscal taxes and transfers a household experiences and to what extent. Children enrolled in public schools receive in-kind education services (and those in private schools may still receive some public subsidy). Women of childbearing age have greater health care needs and may therefore benefit more (or not) from in-kind public health services. Households with only adult members may buy more leisure and spend more on food outside the house, which may be taxed at a higher rate than other items in the basic consumption basket. Households with elderly members potentially receive non-contributory or subsidised pensions or old-age support. Many countries target social assistance to demographic categories such as children, elderly, widows or the disabled and sick. The employment status of a married couple can influence the effective marginal tax rates women pay. At the same time, care responsibilities – how many and who bears them – also depend on the composition of the household. Pre-school children require more care; school age children require less care and may also help out around the house (especially older girls). Elderly require care but may also share some care duties (especially older women), while the sick and disabled require care but may face difficulties helping around the house. Other adults may create more chores but may also share care responsibilities (especially women). Care responsibilities, in turn affect and are affected by fiscal policy; the availability of public services can reduce women’s unpaid work while unpaid work affects women’s

participation in paid work and payment of income tax. A recent study (Lugo, Muller, and Wai-Poi 2020) identified a number of barriers to Jordanian, Lebanese and Iraqi women undertaking paid work, a number of which have fiscal implications, including a lack of affordable and quality childcare and a lack of affordable and safe public transport. It also identified that household demographics can play a role in the likelihood that women engage in paid employment (for example, the presence of additional adult women in the household who can contribute to childcare responsibilities increases the likelihood of women participating in the labour force). A similar conclusion is reached in a forthcoming study focusing on the time use of women in Jordan (Woodham and Wai-Poi *forthcoming*).

III. Methodology

The first step in the analysis is to identify which household categories are relevant in Jordan. We do so from what we call i) a care perspective, ii) a fiscal perspective, and iii) a contribution to household income perspective. A relatively small number of categories are needed, but what these categories might be, and how many, in a particular country is an empirical question. Each category should not represent too many people so as not to obscure differences between them nor so small as to lack salience relative to the entire population. The differences between categories should be based on those relevant to intended analysis and the differences within categories immaterial for these purposes. Both care and fiscal categories are driven by the same demographic dimensions (number of adults and their marital status, number and age of children and elderly people), although these characteristics guide the two sets of categories in different ways. Thus, the two typologies could substantially overlap. If there is a strong overlap in membership, a single typology could be used throughout the analysis, making both analysis and exposition easier. We also define gender majority typology based on the contribution of men and women to household income, which is akin to the categorization used by Greenspun in Latin America and Fuchs and Gonzalez Icaza in Armenia.

Once these categories are identified, the benefits and burdens of Jordan's fiscal policy can be allocated among them to examine the extent to which household composition affects fiscal incidence. The fiscal incidence analysis follows the CEQ internationally recognized methodology (Lustig 2018). This analysis starts with pre-fiscal or market income and allocates the following fiscal interventions: direct taxes (personal income taxes); indirect taxes (general and special sales taxes and excises); direct social transfers (NAF and the bread compensation scheme); indirect subsidies (electricity and water); and in-kind benefits (education and health) as seen in Figure 1.⁹ For a full description of the fiscal instruments and how these are allocated to households see Annex I or Rodriguez and Wai-Poi (2021). We assess the distribution of each fiscal intervention independently as well as the overall performance of the system. Up to this point, the allocation of fiscal instruments simply replicates that conducted in the aforementioned main fiscal incidence analysis paper (Rodriguez and Wai-Poi 2021).

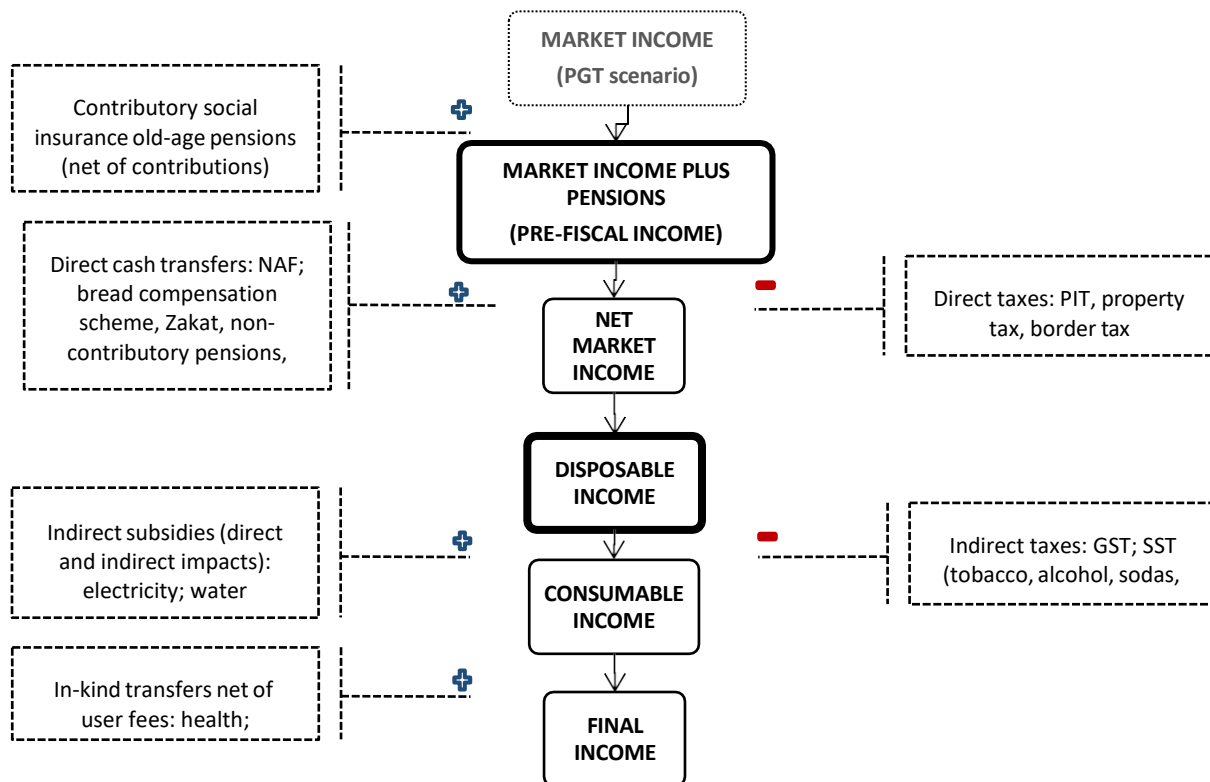
To assess the impact of the fiscal instruments on poverty we use the national poverty line. Then, we depart from the standard CEQ methodology to evaluate the fiscal system's distributional impacts across the different household care and fiscal household categories. Firstly, we use a Theil index instead of a Gini to

⁹ Note that HEIS contains information to construct welfare aggregates based on household income and consumption. The official poverty measurement uses consumption as the welfare aggregate. Following standard methodology (Lustig 2018), this means that in practical terms the calculation of the income concepts begins by equating household consumption to disposable income and then working backward (subtract direct transfers and add direct taxes) to construct market income.

measure inequality. This choice is guided by the interest on horizontal inequality across the different care and fiscal groups, rather than vertical inequality across the entire population of households, as is the case in a traditional fiscal incidence study. Thus, we look to break down an aggregate inequality index into two components: within-household and between-household inequality, allowing to focus separately on the extent of inequality occurring between fiscal and care groups.

The Theil index ($GE(1)$),¹⁰ is a summary measure of the difference between the shares of the income and the shares of population of each group, in this case, each type of household. It reflects the extent to which the distribution of income between groups differs from the distribution of the population in those groups. When all the groups have a share of income equal to their population share, the distribution is completely equal (the overall Theil index is zero). Unlike the Gini index, the Theil is sub-group decomposable,¹¹ which is why we prefer it over the Gini coefficient, although we still present the latter for comparability with Rodriguez and Wai-Poi (2021).¹²

Figure 1. Definition of CEQ Income Concepts and Fiscal Interventions in Jordan



Source: Adapted from Lustig (2018).

¹⁰ The Theil belongs to the Generalized Entropy (GE) measures, which depend on a parameter (α) that determines the sensitivity of the measure to different parts of the distribution. The lower the parameter, the higher the weight given to the lower tail of the distribution, giving more relevance to those who are more deprived. The most common values are 0 (mean log deviation), 1 (Theil) and 2 (coefficient of variation).

¹¹ The Gini decomposition has a non-zero residual term and is not sub-group consistent.

¹² Unlike the Gini, which ranges from 0 to 1, the Theil measure's upper bound depends on the sample size of the distribution. The bound is $\ln(n)$, where n is the sample size

Equation 1 shows the decomposition of the Theil. n is the entire sample size, n_k is the sample size in each group k . \bar{y}_k is the average income for each group k , \bar{y} is the average for the whole sample, and T_k is the Theil for each group k . The first component to the left in equation 1 is the within component, and the second to the right is the between component. The within component is simply the weighted average of the Theil in each group; it shows how much of the total inequality can be attributed to differences inside the groups. To calculate the between-group component, actual individual household incomes are replaced by subgroup means, in order to pick up variability only among groups. In other words, it is the value of the Theil for a distribution with K elements, each having as income the mean of income in its group. The decomposition means even perfectly egalitarian groups (with no within inequality), can still contribute to total inequality through the between component if their mean incomes differ from the mean incomes of the country as a whole.

$$T = \sum_{k=1}^K \left(\frac{n_k}{n} \frac{\bar{y}_k}{\bar{y}} \right) T_k + \sum_{k=1}^K \left(\frac{n_k}{n} \frac{\bar{y}_k}{\bar{y}} \right) \ln \left(\frac{\bar{y}_k}{\bar{y}} \right) \quad [\text{Eq. 1}]$$

The primary data source for the analysis is the 2017-18 HEIS conducted by Jordan's Department of Statistics (DoS). It contains detailed data on household expenditure and income, as well as on direct transfers and household use of education services. The data are also the base for the country's most recent official poverty estimates. The HEIS is representative of Jordanian households¹³ with close to 16,000 households interviewed over the course of a year, from August 2017 to July 2018. We also use administrative and national accounts data from 2018, which broadly coincide with the timeframe of the household survey.

IV. Results

a. Definition of the fiscal, care and income majority categories

We define four care categories in Jordan. As Table 1 outlines, a number of different types of households have been combined into a single category. For example, 'No Dependents' includes single men, single women, a married couple with no dependents, a married couple living with at least one other adult but no dependents, and two or more unmarried adults with no dependents. Each of these different sub-categories of households are quite different from each other in many ways (see Annex II). However, they have been grouped together because they share a common trait with respect to the generation and allocation of care responsibilities; they do not have any dependents, and thus implied care responsibilities within the household.

The category 'married with dependents' represents over 60 percent of the Jordanian households; 'no dependents' represents a quarter (Figure 2). The 'other' category makes up 11 percent of the population. Only the 'single adult with dependents' category is relatively small at 5 percent. It is retained as a separate category as the implications for care responsibilities are significant: a single adult must bear all of the burden, perhaps with some help from older children or elderly members.

¹³ Although the survey includes non-Jordanians, we exclude them from this analysis for various reasons. They were not included in the core fiscal incidence work for Jordan (Rodriguez and Wai-Poi, 2021) because their access to many fiscal instruments varies with respect to that of Jordanians and in many instances is funded through UN agencies rather than the Government of Jordan directly. Further, the poverty line in Jordan was derived considering only Jordanian households' consumption patterns and thus does not apply to non-Jordanian households.

Table 1. Care categories in Jordan

Category	Description
No Dependents (<i>No Dep.</i>)	<ul style="list-style-type: none"> • Single man • Single woman • Married couple with no dependents • Married couple and 1+ other adult(s) with no dependents • 2+ unmarried adults with no dependents
Single Adult with Dependents (<i>Single</i>)	Single man or woman with: <ul style="list-style-type: none"> • 1+ children (at least one is 0-5), no seniors • 1+ children (all 6-14), no seniors • 1+ seniors, no children • 1+ seniors and 1+ children
Married Couples with Dependents (<i>Married</i>)	Married couple (with or without other adult(s)) with: <ul style="list-style-type: none"> • 1+ children (at least one is 0-5), no seniors • 1+ children (all 6-14), no seniors • 1+ seniors, no children • 1+ seniors and 1+ children
Other	<ul style="list-style-type: none"> • 2+ unmarried adults with dependents • All dependents: seniors only • All dependents: seniors and children only

Five fiscal categories have been derived for Jordanian households. Table 2 outlines the different categories and subcategories within them. Households with school children and pensioners are grouped together with households with school children as there are relatively few of the former.

Table 2. Fiscal categories in Jordan

Category	Description
No Workers, No Dependents	<ul style="list-style-type: none"> • No worker: single head of household is not working • No worker: neither of a married couple is working • No dependents: no children in school and no elderly receiving public pension
No Workers, School Children (<i>Children Only</i>)	No Workers (as above) with children in school: <ul style="list-style-type: none"> • 1+ children in school • 1+ children in school, 1+ pensioner
Pensioners	Household has only elderly, at least one of which is receiving a pension, and could have: <ul style="list-style-type: none"> • No worker • One worker • Two workers
Workers, No Dependents (<i>Workers Only</i>)	<ul style="list-style-type: none"> • One worker, no dependents • Two workers, no dependents
Workers, School Children (<i>Workers + Children</i>)	<ul style="list-style-type: none"> • One worker, 1+ children in school • One worker, 1+ children in school, 1+ pensioner • Two workers, 1+ children in school • Two workers, 1+ children in school, 1+ pensioner

In the five categories above, households where the head of household and/or their spouse are workers have been defined together as a household with ‘workers’. This has been done for ‘workers, no dependents’ and ‘workers, children’. The working status of a married couple matters from a fiscal perspective; if neither works, then neither pays income tax nor can claim the dependent tax deduction (a

spouse counts as a dependent, even if the couple do not have children); if both work only one can claim the dependent deduction so the other implicitly faces higher effective tax rates; a couple with one worker claims the deduction and faces lower effective tax rates. Thus, there is a fiscally relevant difference between couples with one or two workers. However, given Jordan's low rate of female labour force participation, relatively few couples have two workers. Consequently, the final fiscal categories combine couples with one or two workers for the sake of parsimony. These five categories represent at least a tenth of all Jordanian households (no workers with school children, 12 percent; pensioners, 12 percent), increasing to one-seventh (no workers and no dependents, 14 percent) and then around a third (workers and no dependents, 26 percent; workers and school children, 36 percent)(Figure 3).

There is some overlap between the care and fiscal categories, but not enough to warrant a single typology for analytical purposes. Where there is a significant degree of overlap in categories, it is not perfect, while others avoid clustering (Table 3). For example, half of the households in the 'married couple with dependents' (a care category) are also classified as '1-2 workers with children in school' (a fiscal category), but at the same time, a third, while also having one/two workers, enter in the no dependents type (because their children are pre-school age or not in school, or because they have no children). Other care and fiscal categories have no significant overlaps where over then percent of the households belong simultaneously to the same fiscal and care categories.

Figure 2. Frequency of care categories

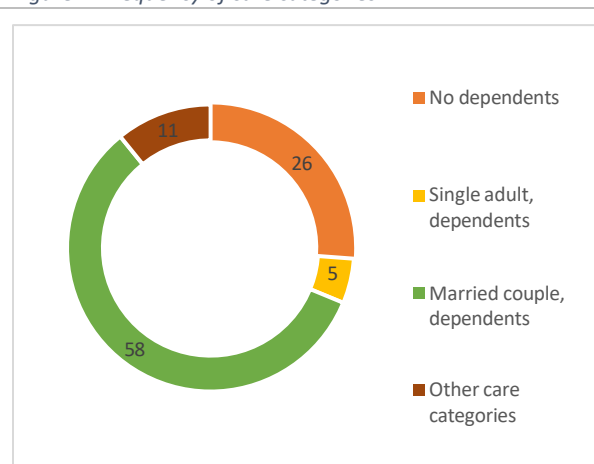
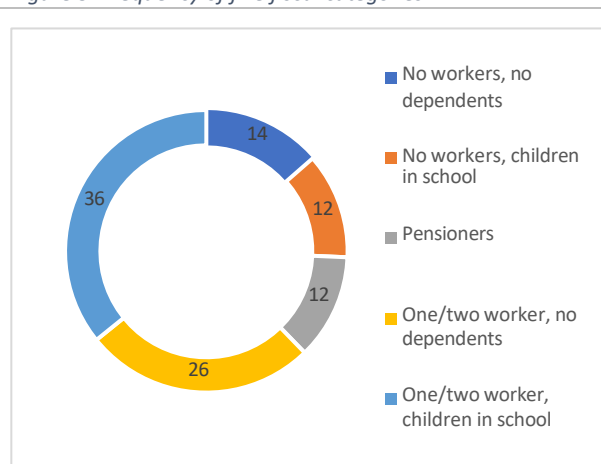


Figure 3. Frequency of five fiscal categories



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations

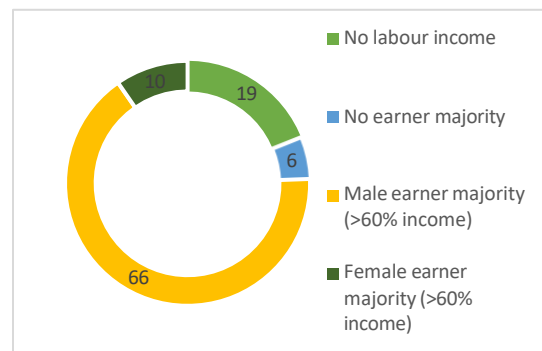
Table 3. Fiscal and care category comparison (percentage of total households)

		FISCAL CATEGORIES				
CARE CATEGORIES		No workers, no dependents	No workers, children in school	Pensioners	Worker(s), no dependents	Worker(s), children in school
	No dependents	5	4	7	7	4
	Single adult, dependents	2	0	1	1	0
	Married couple, dependents	1	6	2	18	31
	Other	5	2	2	1	1

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

We also create more outwardly gendered categories by looking at whether men or women are the main income earners (earn more than 60 percent of household labour income).¹⁴ As expected given the very low participation rate of Jordanian women in the labour force, almost 70 percent of households are ‘male earner majority’ households and only 10 percent are ‘female earner majority’ households (Figure 4). Again, there is some overlap with the fiscal and care categories, but not a perfect one. In particular, most of the households where men are the main income earners are in the ‘married couple with dependents’ care category (Table 4) or in the ‘worker(s)’ (with and without children in school) fiscal categories (Table 5).

Figure 4. Frequency of gender income categories



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Table 4. Care and gender earner category comparison (percentage of total households)

		GENDER EARNER CATEGORIES			
		Female ≥ 60%	Male ≥ 60%	No income	Neither earns 60%
CARE CATEGORIES	No dependents	3	15	6	1
	Single adult, dependents	2	1	2	0
	Married couple, dependents	3	46	5	4
	Other	2	3	5	0

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

¹⁴ We focus on labour incomes but similar results are obtained when including other sources of income. We also conduct some sensitivity analysis using a 50 percent threshold instead of a 60 percent threshold with similar results.

Table 5. Fiscal and gender earner category comparison (percentage of total households)

		GENDER EARNER CATEGORIES			
		Female ≥ 60%	Male ≥ 60%	No income	Neither earns 60%
FISCAL CATEGORIES	No workers, no dependents	2	4	7	0
	No workers, children in school	1	5	6	0
	Pensioners	2	5	4	1
	Worker(s), no dependents	1	22	1	2
	Worker(s), children in school	3	30	1	3

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Overall, this section presented three household typologies for the Jordanian population. Care categories are perhaps the most relevant when the interest is on how the fiscal system affects women as the main caretakers in Jordan, and how can it potentially affect women and household decisions such as whether women are economically active. Fiscal categories show how more complex demographic household compositions interact with fiscal policy. As shown in Table 5, the ‘no workers’ and ‘pensioners’ fiscal categories are more likely to be female-majority earner households, whereas male majority earner households have disproportionately high representation among worker households. These categories allow further understanding of the interaction between income, gender, and fiscal policy, isolating important components of fiscal policy related to household demographics such as public education and pensions in addition to income. Gender earner categories are geared to distinguish households where women already work (a relatively small group in Jordan), and thus on how the fiscal system affects them.

b. Impact of taxes and transfers for households in fiscal, care and gender earner majority groups

Figures 5 to 8 show the net impact of the fiscal system—when all taxes and transfers are taken into account—on households according to the household categories to which they belong. Figures 5 and 7 show how much is paid and received in absolute monetary value (JOD). In absolute terms and when the value of in-kind transfers is taken into account, the only fiscal groups that are large net beneficiaries of the system—that is, the value of the benefits received is greater than the payments in taxes (‘Total Impact’ dot line on charts)—are those who have children in school. This reflects the fact that a large part of the benefits, and the progressivity of the fiscal system in Jordan come in the form of in-kind education (as shown in Rodriguez and Wai-Poi (2021)). The net benefits are very small or close to zero for all care categories except for the Married Couple with Dependents. This group receives large education benefits, and also large amounts in indirect subsidies. This is also the group with the greatest net absolute benefit across all fiscal and care categories. For the gender earner categories, the male majority group is by far the largest absolute beneficiary of the fiscal system, which reflects that they comprise, by far, the largest share of households. They are also the group with the largest payments into the fiscal system, which means that when excluding in-kind health and education benefits, they become net contributors to the system (‘Total Cash Impact’ triangle line on charts is not substantially above zero). Similarly, no fiscal nor care group is a substantial net beneficiary of the fiscal system, and some are even large net contributors. The Workers no Dependents (fiscal), No Dependents (care) and Married Couple Dependents (care) groups are large net contributors, paying to the fiscal system more than what the 9th decile in the market income

distribution pays. The case of the and Married Couple Dependents care group is interesting because it goes from being the largest net beneficiary of the system when in-kind benefits are included to being the large net contributor when they are excluded from the analysis. It is also interesting to note that while they receive the largest amount of direct social protection transfers¹⁵ and indirect subsidies (electricity and water) of all fiscal and care groups, they are also the largest absolute payers of direct (PIT) and indirect taxes (GST and SST).¹⁶

Figures 6 and 8 show how much is paid and received as a percentage of the households' market income. The standing of some groups as large net beneficiaries or contributors to the fiscal system changes when assessing the impact of the fiscal system relative to the households' income. In the fiscal categories, the total net benefits are similar for the No Workers no Dependents group and the Workers with Children in School group, while in absolute terms they were almost three times as high for the latter group. In the care categories, the change is more dramatic, as the total impacts of the fiscal system are much smaller for the Married Couple Dependents group relative to their income than in absolute terms. Also, for the Other Care Categories group, the benefits of the fiscal system rise in relative terms. Overall, the highest total beneficiaries of the fiscal system in Jordan are households in the fiscal groups with school-aged children. When excluding in-kind education and health benefits, most groups' net benefits or contributions are very small, less than four percent of their incomes. As for the gender categories, the No- Income group receives net benefits corresponding to about 15 percent of their household income (this is also the only group who is net cash beneficiary of the system because of larger receipts of social protection transfers). Meanwhile, the Female Earner households receive 5.4 percent and the Male Earner ones, 8.5 percent of their incomes, and neither is net cash beneficiary of the system.

Two salient findings emerge in comparison to the fiscal incidence analysis in Rodriguez and Wai-Poi (2021). Firstly, in both studies the receipt of in-kind benefits, primarily education, is what drives which fiscal, care or gender majority groups have the largest net benefits from the fiscal system. Secondly, when focusing only on the cash benefits, much of the progressivity of the fiscal system was driven by the poorest households having a more concentrated share of direct transfers compared to richer ones, especially relative to their incomes. But when looking at fiscal or care categories, direct transfers are more spread across all groups.

¹⁵ Although much of it comes from the now discontinued bread transfer.

¹⁶ Figures 18 to 27 in the Annex present the absolute and relative incidence of each type of fiscal instrument separately.

Figure 1 Payments of Taxes and Benefits of Public Spending by Fiscal and Care categories (Million JOD)

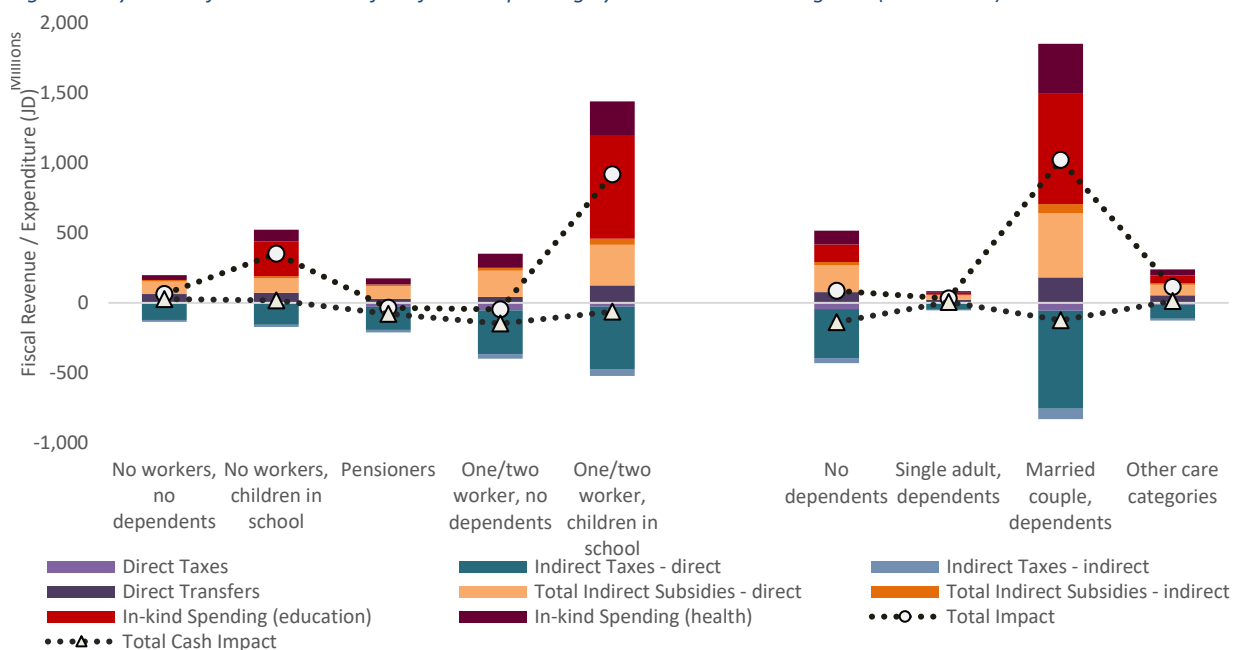
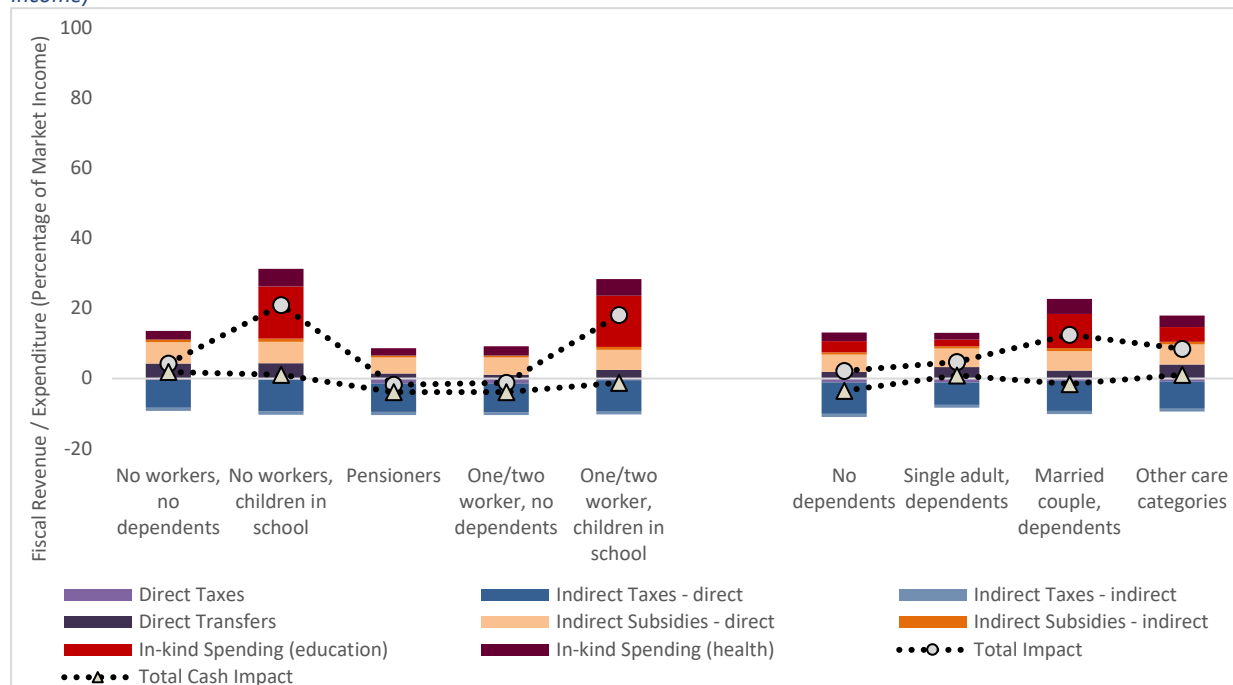


Figure 2 Payments of Taxes and Benefits of Public Spending by Household by Fiscal and Care categories (Percentage of Market Income)



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Figure 7 Payments of Taxes and Benefits of Public Spending by Gender Earner category (Million JOD)

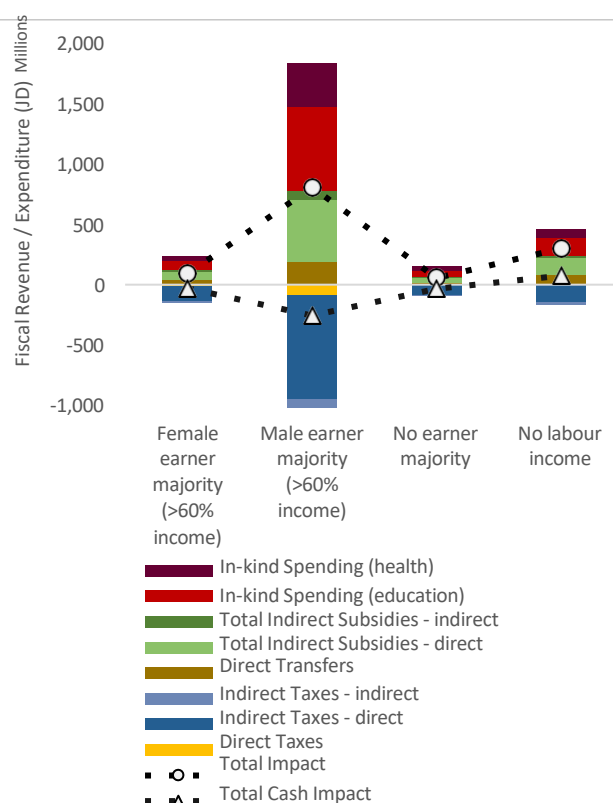
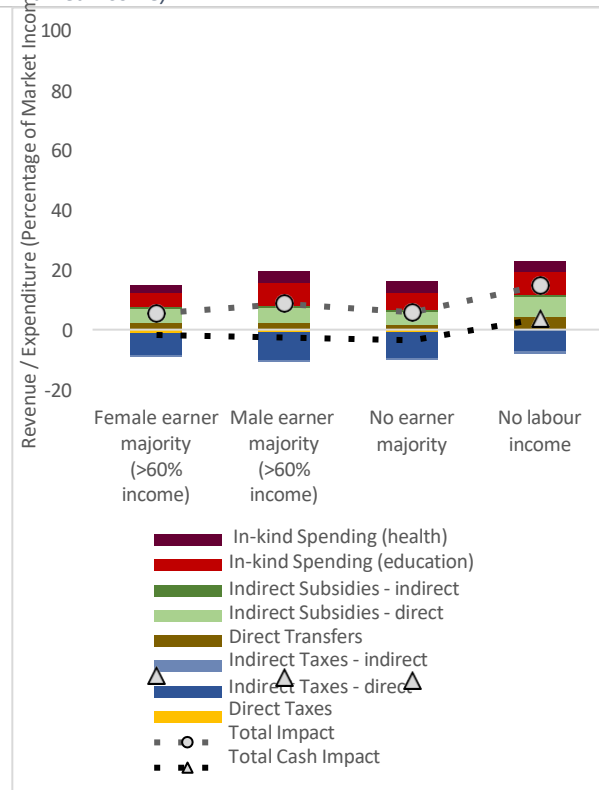


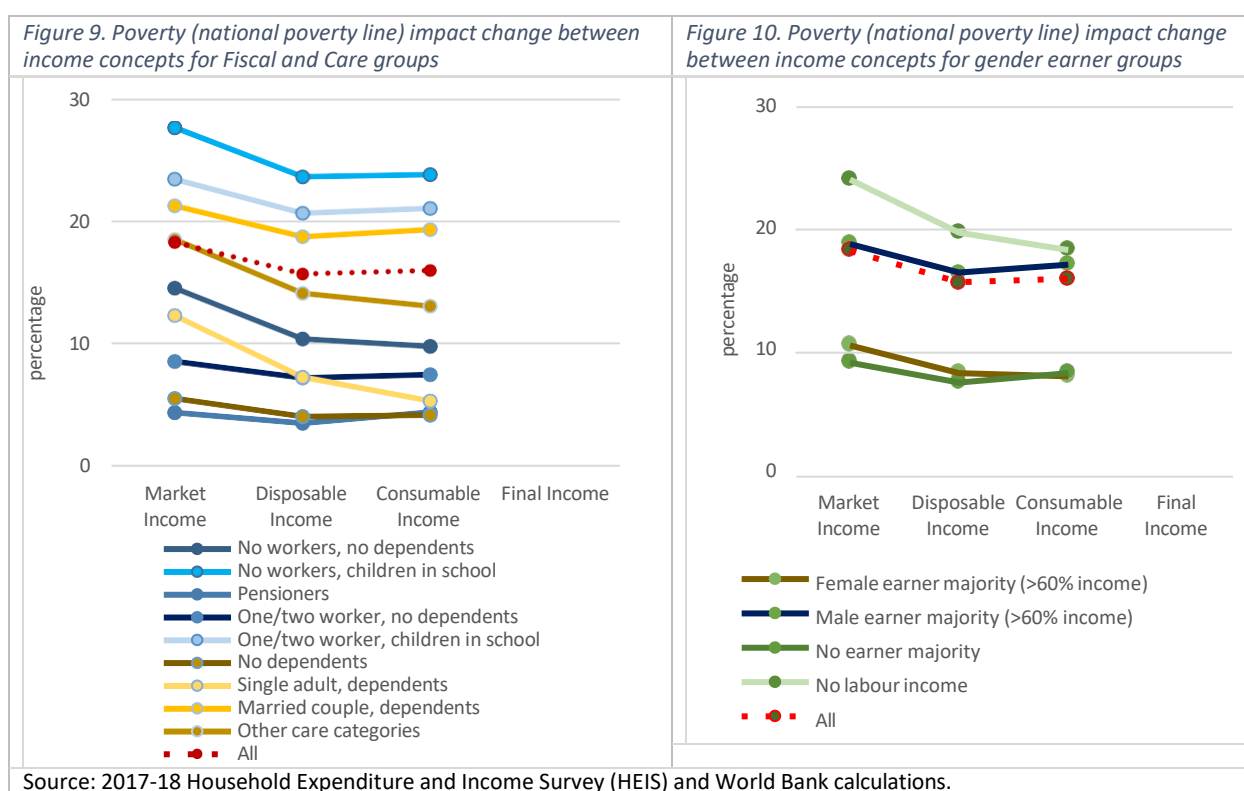
Figure 8 Payments of Taxes and Benefits of Public Spending by Household by Gender Earner Categories (Percentage of Market Income)



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Poverty and Inequality Impacts

Official poverty is measured using the household per capita consumption aggregate and results in a poverty rate for Jordanians of 15.7 percent.¹⁷ Overall, poverty falls slightly from market income to disposable income (when accounting for the impact of direct taxes and transfers) and then plateaus when moving to consumable income (accounting for indirect taxes and subsidies). For most care, fiscal and gender earner majority groups this pattern is repeated (Figure 9 and Figure 10). There are three groups for which poverty continues to fall from disposable to consumable income: Other Care Categories, Single Adult with Dependents and No Labour Income. For the second group, the fiscal system more than halves poverty. There is also two group for which the fiscal system increases poverty, albeit by a small amount: Pensioners and Male Earner Majority. For the most part, we do not observe that groups that started with higher poverty rates experience a substantially higher poverty reduction through the fiscal system. Rather, the rank across the different groups is preserved through the system (e.g. which is the group with the highest, second highest, third highest, etc. poverty rate), with the one exception of the 'Single Adult with Dependents' care group.



Whether the fiscal system reduces inequality is a more complex question. The traditional approach in fiscal incidence studies is to look at the reduction in the Gini (or other aggregate inequality measure) when moving from market income to final income. This gives a sense of the overall progressivity of the system, but it does not allow seeing the impacts on other types of inequalities, for instance, along gender lines or across different groups.

A simple way to assess whether the fiscal system reduces gender inequality is to look at whether it closes the gap between ‘male’ and ‘female’ types of households, as it is done by Fuchs and Gonzalez in Armenia (2022). Table 6 shows the result of this exercise in Jordan. Overall, there is a slight closing of gender gap from market to final income (29 percent to 27 percent), mostly occurring between consumable and final incomes. But a caveat of this analysis is that, in Jordan, ‘female’ type households (those where women earn most of the income) are actually richer on average than ‘male’ type households. This is also observable in the poverty rates in Figure 10, which are higher for ‘male’ compared to ‘female’ type households. This is not surprising given that very few women work outside of the household in Jordan (about 15 percent of working age ones), but those who do, tend to be highly educated (Lugo, Muller, and Wai-Poi 2020) and thus have higher earning potential. Thus, this gender gap analysis may have limited relevance to derive policy-relevant conclusions.

¹⁷ As is standard in the CEQ approach, we do not report the poverty impact of in-kind transfers, since these benefits are not cash (as all the taxes and other spending benefits are), nor are they considered when constructing the poverty line.

Table 6. Average household income per capita (JD/year) for gender majority households and gender gap.

	Market Income	Direct Taxes	Direct Transfers	Disposable Income	Indirect Taxes	Indirect Subsidies	Consumable Income	Final Income
Female earner majority	3265	3346	3231	3312	3045	3475	3208	3442
Male earner majority	2306	2353	2284	2331	2102	2473	2243	2502
No majority	2765	2806	2739	2780	2523	2924	2667	2926
No income	2570	2678	2564	2672	2472	2865	2664	2950
Gender gap	29.4	29.7	29.3	29.6	31.0	28.8	30.1	27.3

Note: Gender gaps are calculated as the difference between average incomes in households identified with ‘female’ vs. ‘male’ type, as a share of average incomes for the richest households.

Another way to approach the question is to look at horizontal inequality, that is the gaps across the various fiscal and care groups. For this analysis, we rely on the Theil coefficient and its decomposition. Table 7 shows the overall impact of the fiscal system on inequality comparing the results when using the Gini or the Theil coefficients to interpret the subsequent decomposition results in light of the progressivity of the fiscal system described in Rodriguez and Wai-Poi (2021). While the scales are not comparable between the two measures, it is important to note that the overall pattern of the trend in inequality from market income to disposable, consumable and final incomes is very similar across the two measures.

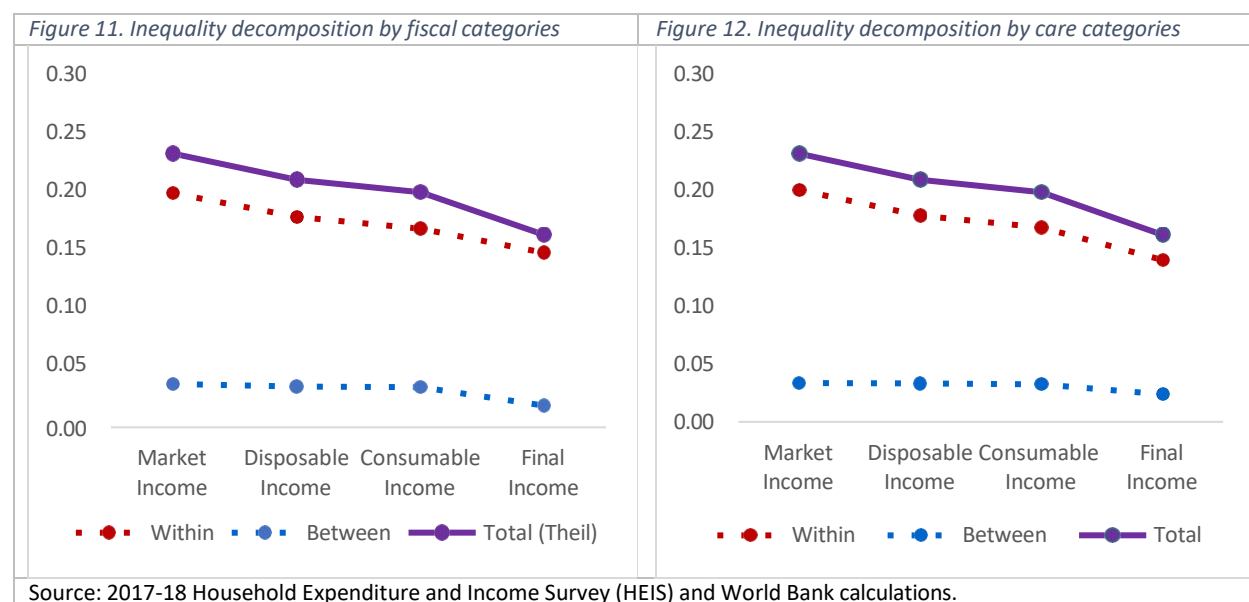
Table 7. Inequality changes between income concepts using the Gini or the Theil coefficients

	Gini	Theil
Market Income	0.35	0.23
Disposable Income	0.33	0.21
Consumable Income	0.33	0.20
Final Income	0.29	0.16

The overall Theil is 0.23 at market income and 0.16 at final income. We first decompose overall inequality into its between and within group components. Figure 11 and Figure 12 show these decompositions for the fiscal and care categories respectively. In both cases, the within group inequality component is the largest contributor to overall inequality. It represents between 84 and 90 percent of total income inequality across fiscal categories and between 85 and 87 percent for care categories. Thus, in both cases the evolution of this within component drives the evolution of total inequality.

Although the overall Theil is the same for both the fiscal and care categories, the evolution of the within and between components varies. Starting with the fiscal categories, the within component falls from 0.20 to 0.15 and the between component more than halves from 0.034 to 0.016, respectively between market and final incomes. This large relative drop in the between group component means that its contribution to total inequality decreases from 15 percent at market income to 10 percent at final income. The largest contributor to within-group inequality—the group with the highest inequality within its members—is the Workers, no Dependents group, with about 30 percent contribution to within-group inequality, followed closely by the Workers with Children group (Figure 13). On the other hand, the group of No Workers and Children in School is the one with lowest within-group inequality. The fall in inequality between the fiscal groups occurs entirely when moving from consumable to final income. This is especially the case for the Workers, no Dependents group, which starts being the group with the highest contribution to between-

group inequality at market income but falls behind the Pensioners group at final income (Figure 14, Figure 15). Not all the groups show a reduction in inequality; the two fiscal groups with children in school show an increase in their between-group inequality, even though they continue to have a negative contribution to between-group inequality (their average income is below the total average).



For care categories, the within component of the Theil starts at 0.20 at market income and ends at 0.14 in final income, while the between component fall is much smaller, from 0.03 to 0.02. Accordingly, the contribution of the between-group component to total inequality in the care categories falls only by 1 percentage point, from 14 to 13 percent. There is also one group that dominates in terms of its contribution to within-group inequality: Married Couple with Dependents, which represents about half of within-group inequality. This group also shows a large fall (from 0.10 to 0.07) in its within-group inequality when moving form market to final income (Figure 15). Across care groups, the No Dependents group has the highest contribution to between-group inequality for all income concepts, and it is the only group for which the between-group inequality falls through the fiscal system (Figure 16). The Married Couple with Dependents has a negative contribution to between-group inequality, even though it increases at final income.

Figure 13. Contribution to within group inequality by fiscal categories

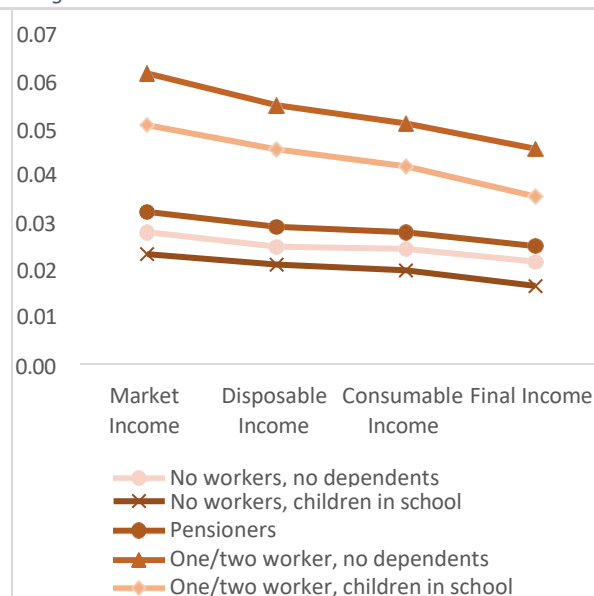
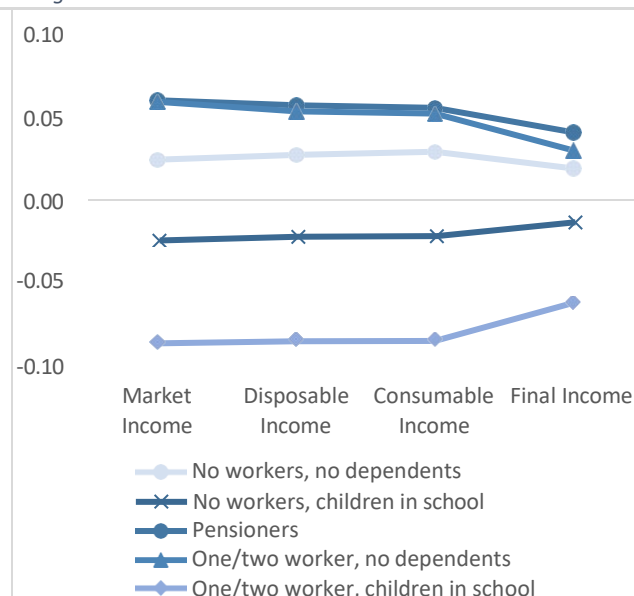


Figure 14. Contribution to between group inequality by fiscal categories



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Figure 15. Contribution to within group inequality by care categories

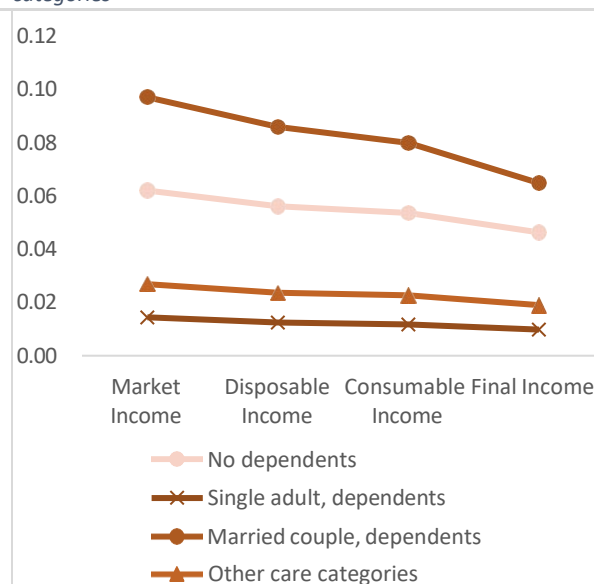
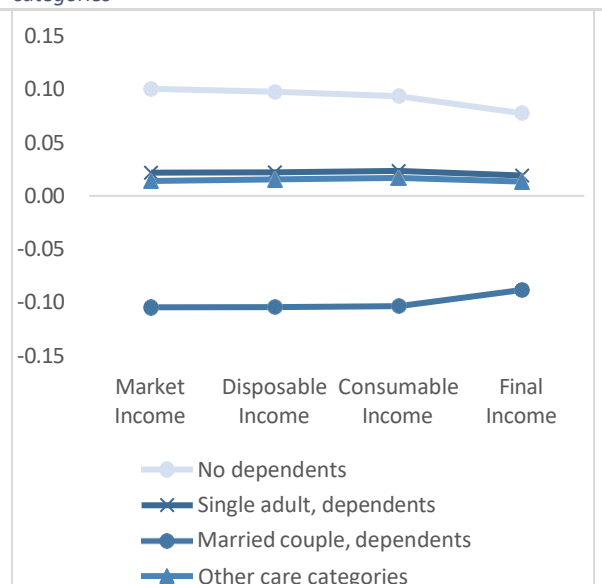


Figure 16. Contribution to between group inequality by care categories



Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

V. Conclusions

In this paper we analysed the impact of Jordan's main fiscal policies on poverty and inequality across household groups, applying an adaptation to the standard CEQ methodology to account for group-based inequality to data from the 2018 HEIS. We covered the key fiscal policies (as of 2018) included in the base fiscal incidence analysis of (Rodriguez and Wai-Poi 2021): personal income taxes, GST and SST (indirect

taxes), direct transfers from NAF, the bread subsidy compensation scheme, indirect subsidies to electricity and water and in-kind benefits for education and health.

Firstly, we derive household typologies based on their demographic characteristics, and the participation of men and women in household income. We find that using categories based on the gendered contribution to household income is insufficient to assess whether the fiscal system reduces gender poverty gaps because households where women are the main earners in Jordan are a small and selected group, often wealthier than other households. Instead, we focus on the fiscal and care categories, which provide a more nuanced view of household composition in Jordan.

We show that the receipt of in-kind benefits, primarily education, determines which fiscal or care groups have the largest net benefits from the fiscal system. When focusing only on cash benefits, the system is very close to neutral for all fiscal and care groups. In other words, no group is a significant net beneficiary or net contributor to the system. This contrasts with the findings in Rodriguez and Wai-Poi (2021), where much of the progressivity of the fiscal system, outside in-kind benefits, was driven by the poorest households having a more concentrated share of direct transfers compared to richer ones, especially relative to their incomes. Instead, across fiscal or care categories, direct transfers are more spread across all groups and thus do not have a sizeable impact on the net benefits received by one group over the other.

Our results also show that the fiscal system in Jordan is reducing within-group inequalities but has only a very small impact on inequalities across groups. This is the case for inequality across both fiscal and care categories. Further, most of the reduction happens between market and disposable income, that is, when direct taxes and transfers are added to the fiscal system. These findings reinforce those presented in Rodriguez and Wai-Poi (2021). There, it was shown that the direct fiscal instruments (direct transfers and direct taxes) were the most cost-effective in reducing overall vertical inequality. This overall impact is also reflected in inequality within the groups (which is akin to vertical inequality within each group), but they are not as effective in lowering disparities across groups. In particular, the fiscal system does almost nothing to bring down between-group inequalities, though they are very low at the outset. This, however, hides the fact that for some groups, the fiscal system helps to reduce their contribution to between-group inequality.

These findings can help Jordan to think about how to use the fiscal system to promote gender equity goals. The country, even before the pandemic, had one of the lowest rates of female labour force participation in the world. While the country has set itself a target of raising this figure, the COVID-19 pandemic has only made the inclusion of women in the labour market a more pressing yet difficult issue. The fiscal space has become even tighter as the country has invested in emergency cash assistance on top of direct health expenditures needed to respond to the pandemic and while tax receipts and economic growth have fallen. Conditions in the labour market deteriorated, deterring even more women from engaging in economic activities. Unemployment rates, especially for women and young people, rose dramatically; women in the private sector were at a higher risk of both losing their jobs and not being able to return to work given specific constraints they face during economic shocks and subsequent shrinking of the job market. They are also likely the ones who bear the greatest responsibilities for childcare during school closures as well as family members who may fall sick. The results of this study show that while the fiscal system was more heavily benefiting households with children in school (fiscal categories) or with dependents (care categories), the overall net impacts, even for these households, were very small, especially once excluding in-kind benefits. More could be done to reward those households through the most cost-effective fiscal instruments (direct taxes and transfers) and in this way help to incentivise women to engage in economic activity and participate more fully in the economy.

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Annex I. The allocation of fiscal instruments in Jordan

Source: Rodriguez and Wai-Poi (2024)

Allocating direct taxes: Personal income tax (PIT)

We compare two methods to estimate the PIT paid by households. The first method simply takes self-reported information on PIT payments. The second method imputes the expected household PIT burden for the corresponding incomes using a recursive methodology (World Bank 2020b).¹⁸ This imputation works as follows: to start, we estimate the PIT that each household would pay under the statutory rates and the self-reported household incomes. A difficulty arises because the net-market income calculated from the survey is post-PIT, rendering an inaccurate estimate of the value of the tax paid. To solve this simultaneity problem between income and PIT, we calculate the household rate of statutory PIT and use it to estimate what the pre-PIT market income would be (net market income*). Then, we calculate the statutory PIT paid (in JOD) based on the pre-PIT market income.¹⁹

Both the direct measure and the imputation of PIT paid underestimate the government income receipts from PIT, although the underestimation is lower in the self-reported case. We use the self-reported PIT paid for those households who report it, and the estimated statutory PIT for households that should be paying PIT, but do not report doing so. Nonetheless, we are only able to identify about 24 percent of the government revenue figures (a gap of JOD 89 million²⁰), likely due to the richest households not appearing in the survey.²¹ We allocate the missing PIT to those households that we had found pay this tax in HEIS and the amount allocated is proportional to their income. We do not have disaggregated administrative records of PIT payers across the distribution to allocate missing taxpayers by decile or income level.

Allocating indirect taxes: General (GST) and special (SST) sales taxes

To estimate the impact of GST and SST we match the rates to the various expenditure categories in the household survey. If an item is not specifically listed in the GST codes annex, we use a rate that applies to similar items (for instance, guavas and pomegranates are not listed in the GST code but we assign them the tax rate applicable to other fruits). If no similar items appear in the tax code, we apply the general rate of 16 percent. Because the level of disaggregation in HEIS and the GST codes is not the same, there are a few occasions where two GST categories apply to one HEIS item. In this case, we divide household expenditures equally and apply each GST rate to each half. Taxes are only calculated for items that are part of the consumption aggregate except for purchases made outside of the country, which are not taxed nationally, housing rent (actual or imputed), for which we assume a zero GST rate. Because the flow-value of durable goods is included in the consumption aggregate to estimate poverty, we also estimate the value of the tax that would be paid for this value.

¹⁸ This mirrors the method used in Indonesia (Jellema, Wai-Poi and Afkar, 2017).

¹⁹ $PIT\ paid = (Net\ market\ income * PITrate) / (1 - PITrate)$; where $Net\ market\ income = disposable\ income - direct\ transfers$.

²⁰ This gap is estimated with respect to the scaled budget (as a share of private consumption).

²¹ This is a common problem in surveys around the world. For example, in an earlier HEIS, every household in West Amman, an affluent neighbourhood, refused to participate (Department of Statistics, Ministry of Planning and International Cooperation and World Bank, 2012).

The direct household burden of the tax is estimated by multiplying total household expenditures (excluding self-production and gifts²²) by the effective tax.²³ We make no further adjustments, for example, to account for informality or evasion. For items where GST and SST apply, we calculate each tax separately and add the totals. For GST-exempt items we calculate the indirect effect using an IO table uprated to 2016 and a cost-push model, where the higher producer prices will be pushed to consumers in the final sale price of the product. The amount of tax collected from GST and SST is scaled to match the effective tax rate in national accounts.²⁴

Allocating cash transfers from social assistance

In the first instance, we use the household self-reported information in HEIS about receiving NAF or cash assistance from the Ministry of Social Development (MoSD) to determine who is obtaining this benefit.²⁵ This identifies 77 percent of the households receiving NAF benefits in 2018 according to the administrative data. To assign the remaining beneficiaries from NAF, we use a simple prediction model based on household demographic characteristics²⁶ and designate those with a higher likelihood of receiving NAF as 'predicted beneficiaries' until we reach the levels reported in the administrative records.²⁷ The value of the transfer received corresponds to the household report of NAF or MoSD cash income²⁸ in HEIS for the directly identified households and for the predicted beneficiaries who reported MoSD cash income.²⁹ For the remaining predicted beneficiaries, the benefit is calculated as JOD 45 per person per month up to a maximum of JOD 180, which correspond to NAF's basic benefit.

HEIS does not inquire directly about income from the bread compensation scheme transfer as the scheme was introduced in the middle of the survey collection,³⁰ so it is not possible to follow a direct identification

²² For non-food items, it is not possible to discriminate between the expenditure corresponding to purchases, and the estimated value of non-purchased ones. If the entirety of the item was obtained as a gift, we do not calculate any tax. If a household obtained the item with a combination of methods (purchases and gifts), we calculate the tax on the full value as if it was all purchased.

²³ $Tax\ paid_k = (expenditure_k * tax\ rate_k) / (1 + tax\ rate_k)$.

²⁴ The effective tax rate is total tax collections over total private consumption.

²⁵ We identified beneficiaries as those who reported receiving incomes from NAF or from the MoSD, which are asked about separately in HEIS. Because MoSD operates NAF some NAF beneficiaries may consider income from NAF as MoSD payments. Moreover, MoSD did not operate other significant programs at the time.

²⁶ Governorate; rural/urban location; number of income earners; whether the household receives income from agriculture or livestock family businesses; number of elderly household members and children; whether there is a household member with a disability; household size; an indicator for female-headed households; an indicator for whether the household reports receiving cash income from the Ministry of Social Development.

²⁷ As the administrative number of beneficiaries is believed to be accurate (that is, there is no leakage in the system), the missing beneficiaries are imputed. This is a standard approach within CEQ. However, imputation can influence results when the gap between directly identified beneficiaries in the survey and administrative numbers is wide (although not the case here). See forthcoming technical note by Phadera, Rodriguez and Wai-Poi.

²⁸ Capped at JOD 200, NAF's maximum benefit (the maximum is 180 but some households can receive a top-up, up to JOD 200).

²⁹ This is possible as income questions are asked separately from social assistance questions in HEIS.

³⁰ Analysis of HEIS indicates that households were reporting this compensation transfer as part of 'other MoSD government transfers' received, as there was a sharp spike in households reporting such transfers for households interviewed in the third quarter of survey collection (starting in February 2018; the compensation was introduced in January 2018). Nonetheless, the amounts reported in HEIS for this "other MoSD" transfer were significantly higher than the bread compensations should be, and consequently we preferred to simulate the transfer amount according to the administrative procedures.

method in this case. According to government figures, the bread compensation transfer reached 5.2 million Jordanian households, which corresponds to 75 percent of the households in the census. We allocate the bread compensation transfer to the poorest 75 percent of households in HEIS (ranked on their per capita expenditure), making sure to include NAF beneficiaries.³¹ We adjust the benefit levels of NAF and the bread compensation transfer to match the administrative figures in the budget.

For smaller direct cash or near-cash transfer programmes (Zakat fund and other non-identified programmes), we use direct identification to determine whether a household received the benefit and to determine the magnitude of the amount received. This also applies to other unidentified social-security dues.

Allocating indirect subsidies: Water and electricity

To estimate the subsidy received per household we estimate first the quantity used based on the household reported expenditure for the utility,³² and then matching the subsidy corresponding to this quantity. Of the households, 18 percent and 14 percent do not report expenditures on water and electricity bills, respectively. We impute the estimated utility consumption for those households based on a simple model that includes household size, location and housing infrastructure characteristics. Although the bills might not be paid directly,³³ the households still use electricity and water and so benefit from the subsidies, thus, we add the estimated un-paid bill to the total subsidy received.

We use a cost-push model to determine the indirect tax or subsidy that consumers pay through the industrial tariffs.³⁴ For the electricity industrial and commercial tariffs, if there is an explicit tariff rate that applies to a particular sector listed in the IO table, we take this rate. For sectors where two tariffs could plausibly apply, we use a weighted average of the two, where the weight is the share of electricity consumption in the sector. For industrial sectors without a specific tariff, we average the rates that apply to small, medium and large industries, weighted by share of electricity consumption for each size of firms. We apply the single water industrial tariff rate, which is marginally above the cost of production, to estimate the indirect household burden of industrial cross-subsidisation of water tariffs.

Allocating in-kind benefits: Education

The monetary value of public education is given by the unit cost per level of education (pre-school, basic, secondary, vocational, higher education) calculated from administrative budget data. This is a *government cost* approach, in which the use-value to in-kind benefits is given by the average cost of service provision per beneficiary. This represents what the household would have to pay to use the service at the government's cost. Budget information is taken from the Ministry of Education and the Ministry of Higher Education.³⁵ The estimated cost per beneficiary includes capital expenditure of JOD 50 million, which is allocated to each education level depending on the share of the budget spent in each level. Benefits are

³¹ For a programme reaching such a large proportion of the population, there is little value in trying to simulate the exact targeting as most of the bottom half of the distribution will receive it.

³² Electricity figures include a preliminary adjustment to match the share of households in each consumption block reported in administrative data.

³³ Some cost might be included in the monthly rent, or the service might be provided as part of employer-supplied housing, for instance.

³⁴ Electricity and water inputs to the production of final goods and services means consumers pay higher or lower prices depending on whether the utility tariffs to the producers are higher or lower than the cost of production. The difference is an implicit or indirect tax or subsidy.

³⁵ The administrative data includes non-Jordanian students. Syrian children are mostly integrated into Jordanian schools (Abu-Ghaida, 2016).

assigned to households who have members attending a government school, as reported in HEIS. We present benefits net of user fees, which are the self-reported household expenditures in education services in government facilities. This means that fees are treated as a tax paid to the public provision system on the service acquired.

Allocating in-kind benefits: Health

To estimate the monetary value of health services we also follow a government cost approach and allocate benefits to those that *use* public health services. The unit cost for inpatient and outpatient services is estimated with the sectoral budget from BOOST. To determine the number of users, we take inpatient and outpatient usage rates from the 2017 Demographic and Health Survey (DHS)³⁶ and apply these to the 2015 Census Jordanian population. Although the budget data may include the cost of providing health services to non-Jordanian households, including refugees, this share may be declining since 2014 when health subsidies for refugees were substantially reduced (Conway *et al.*, forthcoming).³⁷ This means that our calculations are an upper end estimate as costs per person where the total number of users includes non-Jordanians and refugees are lower. Because HEIS does not have information on the use of health care services, we randomly allocate the usage rates from the DHS to households in HEIS. Use rates vary by insurance status,³⁸ location (urban or rural), and socioeconomic status, when possible,³⁹ and apply specific usage rates for these breakdowns. We also adjust for differences in household size between each household allocated to receive health benefits and the national average, as well as between all the households that are allocated to receive health services (inpatient or outpatient) and the national average. The estimate of the value of in-kind benefits is limited by the information available. For instance, a limitation of this approach is that we are unable to capture differences in the value of simple and complex healthcare interventions and services, nor to fully account for other variations in healthcare use patterns of different types of households.

These benefits should be net of user fees. However, anyone covered by health insurance is unlikely to have to make such payments, and even those uninsured pay minimal fees when visiting a public hospital. The uninsured pay 20 percent of the cost for the service and thus we assume that the benefit they receive is 80 percent of the total. We also deduct any insurance premium paid for households who use health services and report making such payments.⁴⁰ As with in-kind education benefits, we also present quality-adjusted health benefits using information from the S-HDI (D'Souza, Gatti and Kraay, 2019). We adjust health benefits to account for the income quintile gradient in under-five stunting rates.

³⁶ Tables 16.1 and 16.3

³⁷ In November 2014, Syrians who were registered with UNHCR stopped receiving free access to Ministry of Health primary healthcare centers and hospitals. Syrians were since required to pay as much as non-insured Jordanian citizens, or approximately 35-60 percent of costs. In February 2018, the GoJ once again cut health subsidies to Syrians and costs increased to 80 percent (Conway *et al.*, forthcoming).

³⁸ Uninsured, Ministry of Health, Royal Medical Services or University Hospital, private insurance or others. These insurance categories are matched in DHS and HEIS.

³⁹ Socioeconomic status is proxied by wealth quintiles in DHS and by expenditure per capita quintiles in HEIS. For inpatient care, we do not disaggregate by socioeconomic status as the number of observations would be too low.

⁴⁰ We assign 95 percent of the insurance premium as a cost to inpatient benefits and 5 percent as a cost for outpatient benefits. These percentages are based on the share of the inpatient/outpatient government expenditure.

Annex II. Care categories in Jordan

No Dependents (*No Dep*): The sub-groups of this category vary significantly demographically but are nonetheless classified together as their lack of dependents is the most salient characteristic from a time use and care responsibility perspective. Moreover, they have other common characteristics (Table 8). They tend to be richer than average (green shaded); most of them are a married couple or unmarried adults living together (rather than a single adult, blue shaded); the primary woman is less likely to be working than the national average (yellow shaded); and they are more likely to have a second adult women in the household who is also more likely to be working (orange shaded).

Table 8. Selected characteristics of No Dep. households (%)

	Population (%)	Additional woman (%)	FLFP (%)	MLFP (%)	FLFP+ (%)	MLFP+ (%)	Decile
<i>National</i>	100	41	16	62	9	23	6.3
<i>No Dependents</i>	26	55	11	43	19	41	7.8
One man, no dependents	1	0	0	80	0	0	9.3
One woman, no dependents	1	0	23	0	0	0	9.2
Married adults, no dependents	6	0	18	64	0	0	8.9
Married adults, other adults, no dependents	14	69	9	46	26	60	7.4
2+ adults, none married, no dependents	5	97	11	17	27	51	7.5

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Single Adults with Dependents (*Single*): Single men and single women with dependents are combined because the time use implications for a single parent are similar. In addition (Table 9), both groups are richer than average (perhaps because only wealthier singletons with dependents can afford to live apart from other family, especially single females in Jordan; green shaded); are generally single women rather than single men (blue shaded); single women with a dependent are far more likely to work than the national average, particularly if the child is over 5 years (yellow shaded); and are more likely to have a senior as a dependent rather than a child (orange shaded).

Table 9. Selected characteristics of Single households (%)

	Population (%)	Additional woman (%)	FLFP (%)	MLFP (%)	FLFP+ (%)	MLFP+ (%)	Decile
<i>National</i>	100	41	16	62	9	23	6.3

<i>One man, 1+ dependents</i>	1	0	3	72	0	4	7.9
One man, 1+ children (may include seniors)	0	0	0	69	0	4	5.5
One man, 1+ children (any age 0-5)	0	0	0	49	0	0	5.6
One man, 1+ children (only age 6-14)	0	0	0	74	0	6	5.4
One man, 1+ seniors, no children	1	0	4	72	0	4	8.4
<i>One woman, 1+ dependents</i>	4	0	52	4	1	0	7.8
One woman, 1+ children (may include seniors)	1	0	36	1	1	0	6.1
One woman, 1+ children (any age 0-5)	1	0	27	2	0	0	5.7
One woman, 1+ children (only age 6-14)	1	0	44	0	1	0	6.6
One woman, 1+ seniors, no children	3	0	60	6	2	0	8.5

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Married Couples with Dependents (Married) and Married Couples with 1+ Other Adult(s) and Dependents (Married+): Married couples with dependents are put into a separate category from married couples with dependents as well as another adult because (Table 10): they are both substantial subgroups within the population at around 31 percent each (green shaded); Married have younger children while Married+ have older children (blue shaded); Married are more likely to work (men and women) than the national average while Married+ are closer to the average (yellow shaded); both groups are poorer than average (orange shaded); and the additional adult(s) in Married+ may be both a source of additional care responsibilities and care sharing which they are not for Married.

Table 10. Selected characteristics of Married and Married+ households (%)

	Population (%)	Additional woman (%)	FLFP (%)	MLFP (%)	FLFP+ (%)	MLFP+ (%)	Decile
<i>National</i>	100	41	16	62	9	23	6.3
<i>Married adult, 1+ dependents</i>	31	0	20	93	0	0	5.5
Married adult, 1+ children, no seniors	31	0	20	93	0	0	5.5
Married adult, 1+ children (any age 0-5)	27	0	20	94	0	0	5.5

Married adult, 1+ children (only age 6-14)	4	0	21	86	0	0	5.8
Married adult, 1+ seniors, no children	0	0	5	73	0	0	7.0
Married adult, 1+ children, 1+ seniors	27	73	16	75	13	41	5.2
<i>Married adult, other adults, 1+ dependents</i>	27	73	16	75	13	41	5.2
Married adult, other adults, 1+ children, no seniors	9	75	18	81	12	33	4.4
Married adult, other adults, 1+ children (any age 0-5)	18	73	16	72	13	44	5.5
Married adult, other adults, 1+ children (only age 6-14)	0	63	17	64	29	53	6.5
Married adult, other adults, 1+ seniors, no children	31	0	20	93	0	0	5.5
Married adult, other adults, 1+ children, 1+ seniors	31	0	20	93	0	0	5.5

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Other: The remaining two subgroups – unmarried adults living together with dependents and households consisting only of dependents (seniors or seniors and children) are obviously quite different from each other but are both characterised by having dependents and having very low rates of working (Table 11, green shaded). The unmarried adults subcategory is of average income (blue shaded) and almost all have a second adult women (yellow shaded). The all dependents subcategory is richer than average and can afford not to work has most have pension income (blue shaded), have no working age adult and include at least one senior, with some being a combination of seniors and children.

Table 11. Selected characteristics of Other households (%)

	Population (%)	Additional woman (%)	FLFP (%)	MLFP (%)	FLFP+ (%)	MLFP+ (%)	Decile
<i>National</i>	100	41	16	62	9	23	6.3
<i>2+ unmarried adult, 1+ dependents</i>	7	93	9	10	8	22	6.2
2+ unmarried adult, 1+ children, no seniors	3	98	16	9	13	38	5.2
2+ unmarried adult, 1+ children (any age 0-5)	1	99	13	6	15	30	4.7

2+ unmarried adult, 1+ children (only age 6-14)	2	97	17	11	11	42	5.5
2+ unmarried adult, 1+ seniors, no children	3	88	2	11	5	6	7.2
2+ unmarried adult, 1+ children, 1+ seniors	4	0	1	4	0	0	8.8
<i>All Dependents</i>	7	93	9	10	8	22	6.2

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Annex III. Fiscal categories in Jordan

No Workers, No School or Pension (No Demog.): Households with no workers and no household workers earning a pension or enrolled in public school are quite different from both households with workers with neither public school nor a pension and households with no workers but receiving these benefits, and so stand alone as a category (Table 12). Compared to those other households, households with no workers and no school or pension are the following: less educated (orange), older (blue), and smaller (yellow). Compared to other households with no school or pension but at least one worker in the head of household couple, they are also more likely to have other adult men and women in the household working (grey).

Table 12. Selected characteristics of no demog. households (%)

	Population (%)	MLFP+ (%)	FLFP+ (%)	Decile	HH Size	HOH Age	HOH Educ.	Spouse Educ.
<i>National:</i>	100	26	12	6.3	4.8	50	11.4	11.8
<i>Two workers:</i>	11	11	7	6.8	5.1	42	13.0	14.3
School children	4	11	5	5.7	6.0	43	12.6	13.7
Pensioners	1	24	19	8.4	3.9	53	12.0	13.1
Both	1	29	8	6.0	6.5	48	11.6	13.6
Neither	4	4	7	8.0	4.1	38	14.0	15.1
<i>One worker:</i>	55	22	8	5.9	5.2	44	11.6	11.8
School children	23	23	6	4.7	6.2	44	11.2	11.3
Pensioners	3	36	22	8.0	4.2	57	12.2	12.0
Both	7	40	12	5.6	6.5	50	11.3	11.6
Neither	22	12	7	6.9	4.0	40	12.1	12.3
<i>No workers:</i>	34	38	21	6.9	4.1	62	10.5	10.4
School children	5	43	16	5.0	5.5	53	10.0	9.7
Pensioners	9	40	27	8.0	3.7	67	11.5	10.5
Both	7	44	16	5.7	6.1	56	11.5	11.3
Neither	14	32	22	7.6	2.9	66	9.3	9.4

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

No Workers, School Children (Children): Among households with no workers households with school children and households with both school children and pensioners are quite similar and so are grouped together (Table 13). Compared to other no worker households, households with school children are the following:

more likely to have other male household workers and less likely to have other female household workers (grey), larger (yellow), and younger (blue).

Table 13. Selected characteristics of Children Only households (%)

	Population (%)	MLFP+ (%)	FLFP+ (%)	Decile	HH Size	HOH Age	HOH Educ.	Spouse Educ.
<i>National:</i>	100	26	12	6.3	4.8	50	11.4	11.8
<i>No workers:</i>	34	38	21	6.9	4.1	62	10.5	10.4
School children	5	43	16	5.0	5.5	53	10.0	9.7
Pensioners	9	40	27	8.0	3.7	67	11.5	10.5
Both	7	44	16	5.7	6.1	56	11.5	11.3
Neither	14	32	22	7.6	2.9	66	9.3	9.4

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Pensioners: Households with any number of workers but only pensioners (no children in school) look quite different than other households and so are grouped together (Table 14). Compared to households with school children or with school children and pensioners, those with just pensioners (regardless of number of workers) are the following: richer (green shaded); older (blue shaded); smaller (yellow shaded); and more likely to have another adult woman working (orange shaded).

Table 14. Selected characteristics of Pensioner households (%)

	Population (%)	MLFP+ (%)	FLFP+ (%)	Decile	HH Size	HOH Age
<i>National:</i>	100	26	12	6.3	4.8	50
<i>Two workers:</i>	11	11	7	6.8	5.1	42
School children	4	11	5	5.7	6.0	43
Pensioners	1	24	19	8.4	3.9	53
Both	1	29	8	6.0	6.5	48
<i>One worker:</i>	55	22	8	5.9	5.2	44
School children	23	23	6	4.7	6.2	44
Pensioners	3	36	22	8.0	4.2	57
Both	7	40	12	5.6	6.5	50
<i>No workers:</i>	34	38	21	6.9	4.1	62

School children	5	43	16	5.0	5.5	53
Pensioners	9	40	27	8.0	3.7	67
Both	7	44	16	5.7	6.1	56

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Workers with No Dependents (Workers Only) and Workers with School Children (Workers and Children): Households with one or two workers and no dependents look quite different from the same households with dependents (mainly school children, there are few households with pensioners, Table 15). Compared to working households with school children, they are the following: richer (green shaded); younger (blue shaded); smaller (yellow shaded); more educated (orange shaded); and less likely to have another adult working (grey shaded).

Table 15. Selected characteristics of Workers Only households (%)

	Mean (%)	Other earner (%)	MLFP+ (%)	FLFP+ (%)	Decile	HH Size	HOH Age	HOH Educ.	Spouse Educ.
<i>National:</i>	100	34	26	12	6.3	4.8	50	11.4	11.8
<i>Two workers:</i>	11	16	11	7	6.8	5.1	42	13.0	14.3
School children	4	15	11	5	5.7	6.0	43	12.6	13.7
Pensioners	1	34	24	19	8.4	3.9	53	12.0	13.1
Both	1	32	29	8	6.0	6.5	48	11.6	13.6
Neither	4	9	4	7	8.0	4.1	38	14.0	15.1
<i>One worker:</i>	55	26	22	8	5.9	5.2	44	11.6	11.8
School children	23	26	23	6	4.7	6.2	44	11.2	11.3
Pensioners	3	49	36	22	8.0	4.2	57	12.2	12.0
Both	7	45	40	12	5.6	6.5	50	11.3	11.6
Neither	22	17	12	7	6.9	4.0	40	12.1	12.3

Source: 2017-18 Household Expenditure and Income Survey (HEIS) and World Bank calculations.

Annex IV. Additional figures fiscal incidence analysis

Figure 17. Inequality Change between Income Concepts (Gini)

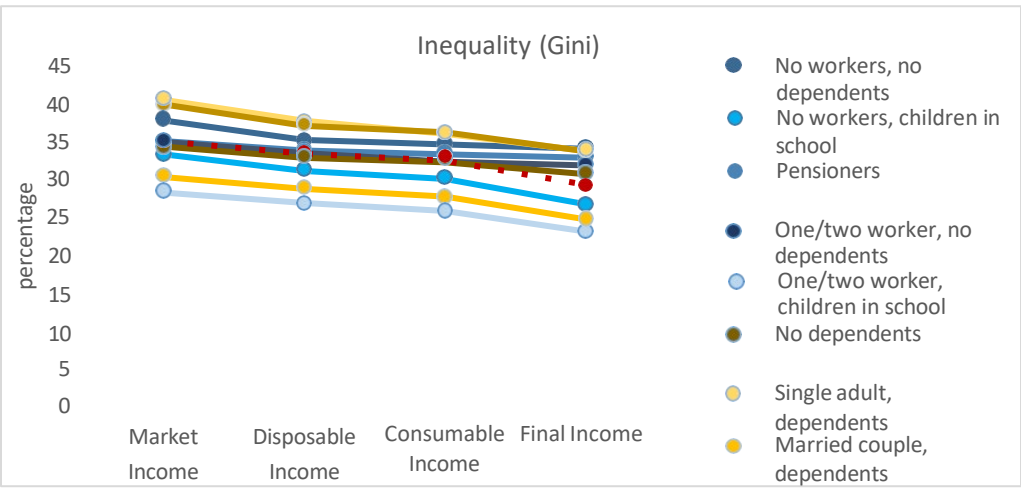


Figure 18. Payments of Taxes by Fiscal and Care categories (Million JOD)

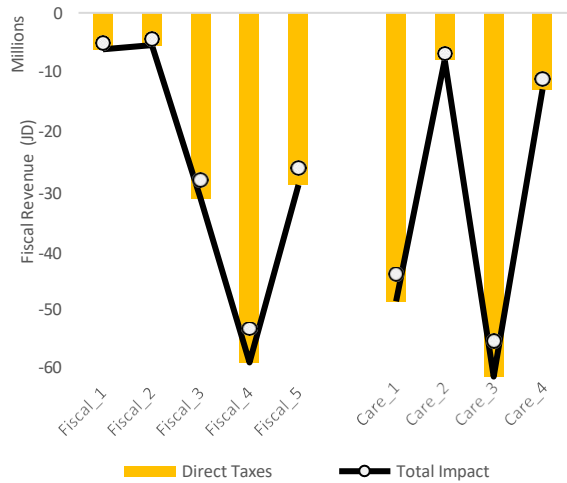


Figure 19. Payments of Taxes by Fiscal and Care categories (Percent of Market Income)

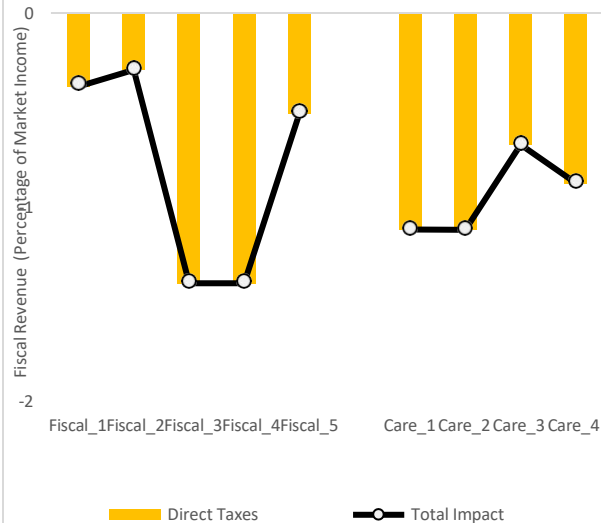


Figure 20. Payments of Taxes by Fiscal and Care categories (Million JOD)

Figure 21. Payments of Taxes by Fiscal and Care categories (Percent of Market Income)

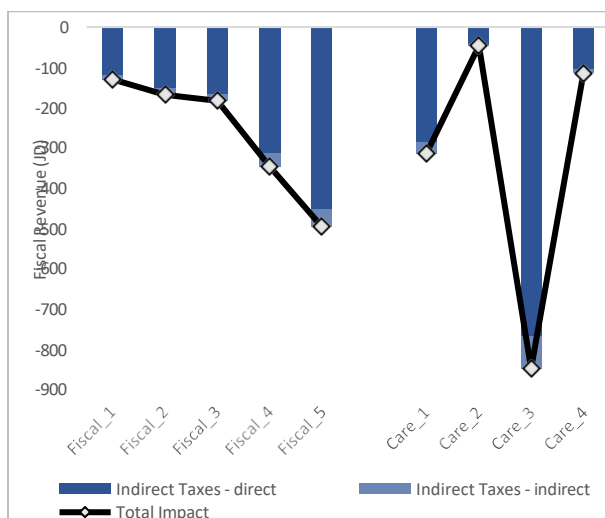


Figure 22. Benefits of Public Spending by Fiscal and Care categories (Million JOD)

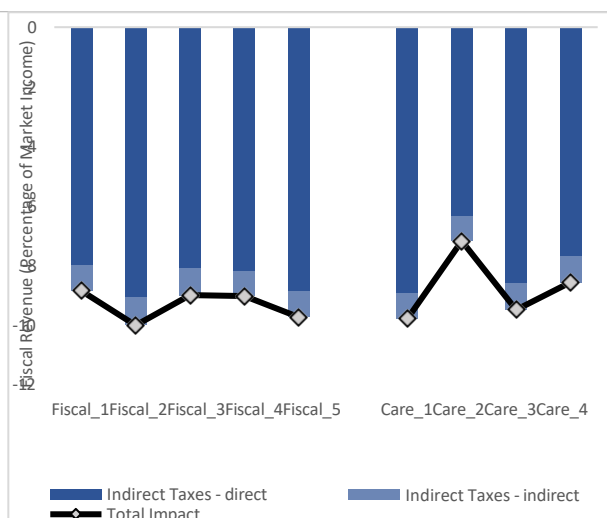


Figure 23. Benefits of Public Spending by Fiscal and Care categories (Percent of Market Income)

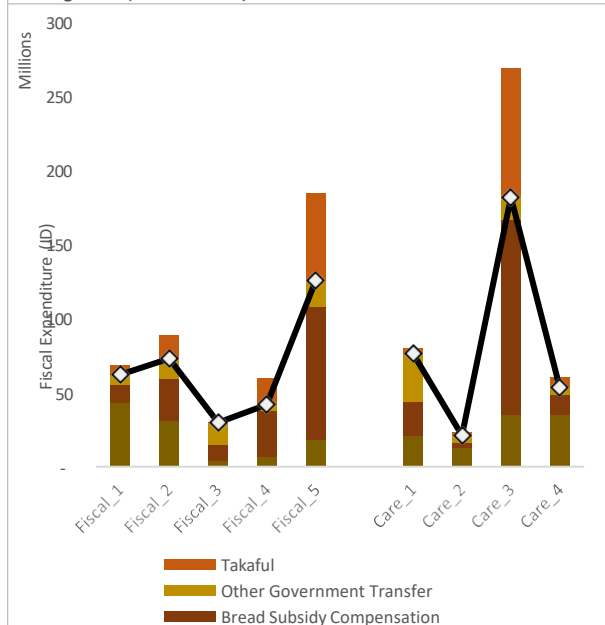


Figure 24. Benefits of Public Spending by Fiscal and Care categories (Million JOD)

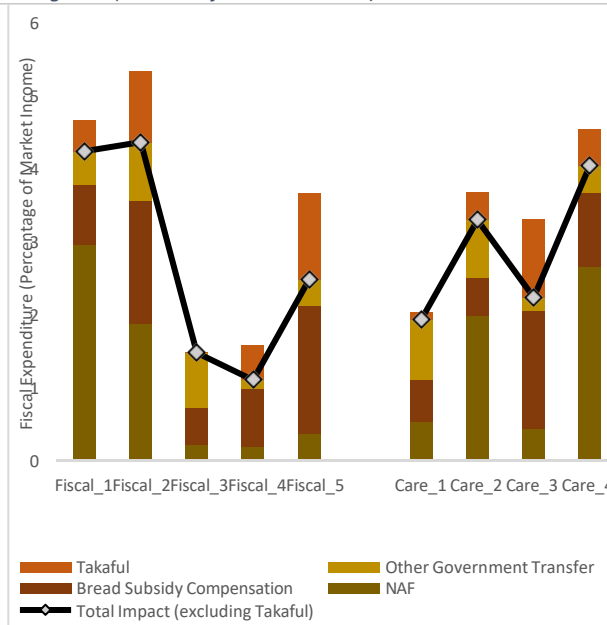


Figure 25. Benefits of Public Spending by Fiscal and Care categories (Percent of Market Income)

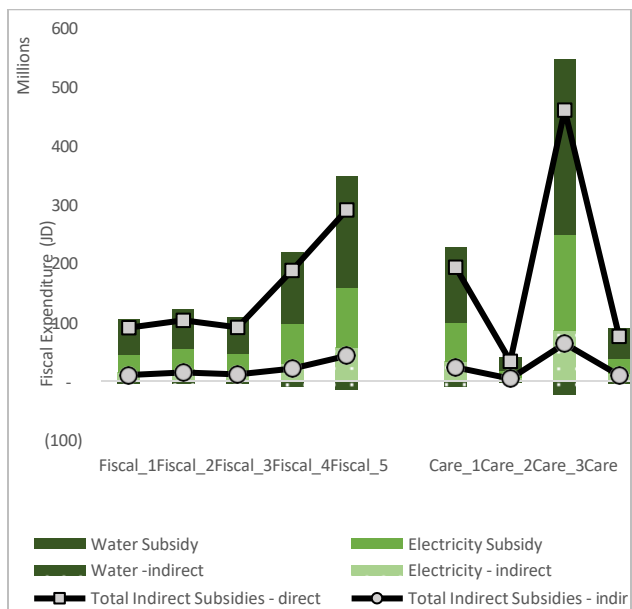


Figure 26. Benefits of Public Spending by Fiscal and Care categories (Million JOD)

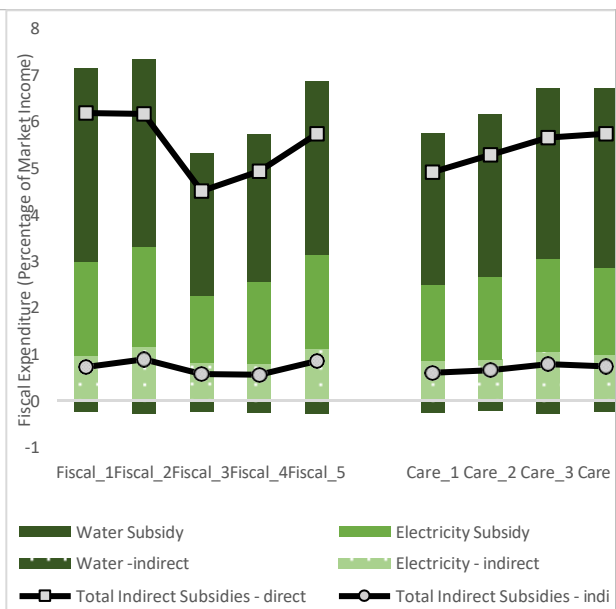


Figure 27. Benefits of Public Spending by Fiscal and Care categories (Percent of Market Income)

