

# **Gender Equity in Taxation in Latin America and the Caribbean**

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## **Abstract**

The purpose of this paper is to calculate the impact of indirect and direct taxes on income and gender distribution for several countries in Latin America and the Caribbean, taking into account its structure and deductions. The aim is to establish the degree of progressivity of the tax system and the effect it generates on gender equity when analyzing household classifications. The results show that, although direct taxes are progressive and help reduce inequalities, and indirect taxes are regressive, the effect on gender disparities is not clear.

## **Síntesis del contenido**

El objetivo de este trabajo es calcular el impacto de los impuestos directos e indirectos sobre la distribución del ingreso y la equidad de género en América Latina y el Caribe. El objetivo es establecer el grado de progresividad del sistema tributario y el efecto que genera en la equidad al analizar clasificaciones de hogares. El resultado muestra que, pese a que los impuestos directos son progresivos y contribuyen a la reducción de la desigualdad, y los impuestos indirectos son regresivos, el efecto sobre las disparidades de género no es claro.

**Key words:** Taxes, inequality, gender

**JEL classification:** H2; I3; D3

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## 1. Introduction

In the last decade, many countries in Latin American and the Caribbean have undertaken a number of tax reforms— both on direct taxes and indirect taxes - which have partly helped to increase fiscal revenue as a percentage of GDP (ECLAC 2013). Other factors that contributed to the improvement in fiscal revenue include a favorable macroeconomic context, social policies that reduced inequality and raised private consumption, and an increase in commodity prices for countries that rely on natural resources (ECLAC 2013). Countries have taken varying levels of VAT reforms such as raising the rates, expanding the tax base by covering intermediate and end services, and reducing the number of goods and services that were previously exempt or zero-rated (ECLAC 2013). Reforms on the direct taxes comprise of changing the tax brackets and tax rates, expanding the tax base by incorporating capital income and dividends as taxable income, reducing deductions for certain expenses, and limiting exemptions (ECLAC 2013). However, tax reforms should be accompanied with an analysis of who bears the incidence of these taxes from a gender perspective.

Gender norms and values impact women's participation in the labor force, income, the question of who bears the burden of unpaid work, and ownership of assets, resulting in gender differences in consumption, income, employment, asset ownership, and women's vulnerability to poverty. Because of these gender differences, direct and indirect taxes are likely to have different implications for women and men. However, so far, very few empirical studies consider the impact of taxation on gender equity concerns and outcomes. The first systematic study on the gender dimensions of tax reforms and policies using expenditure data was conducted by Grown and Valodia (2010) in eight countries: Argentina, Mexico, South Africa, Ghana, Uganda, Morocco, India, and the United Kingdom. The study pioneered a methodology to evaluate the incidence of indirect and direct taxes on households that were classified according to gender considerations. Further, it developed a conceptual framework for evaluating the gender dimensions of taxation based on the Convention for the Elimination of All Forms of Discrimination Against Women (CEDAW) and the public finance literature, and a set of gender equity principles against which tax policies and reforms were assessed.

This study is a second phase of research conducted by Grown and Valodia (2010) by adapting the conceptual framework and building on the methodology for evaluating the incidence of indirect taxes. In this phase of the study, the methodology to assess the tax burden of direct taxes is newly developed as the first phase only studied hypothetical incidence on gendered households and it did not use real household income data. Consequently, this study applies a common methodology to analyze the gender dimensions of both direct and indirect tax policies and reforms using data from household surveys in six countries in Latin America and the Caribbean, namely Argentina (2013), Costa Rica (2013), Jamaica (2010), Mexico (2012), Peru (2012) and Uruguay (2006 for

expenditure survey, 2013 for household survey). Two of these countries, Argentina and Mexico, were included in the first phase, and therefore it is possible to compare and track the changes in incidence in indirect taxes from the first phase, while for the other four countries, it is the first of such study being conducted.

The study was carried out to address the following research questions:

1. Do prevailing tax systems impact differently on male and female taxpayers?
2. Are the differences due to specific provisions in tax legislation (explicit gender bias) or from current social arrangements, consumption patterns, and income that are different among men and women (implicit gender bias)?
3. Do the existence and magnitude of these biases depend on the type of tax (direct vs. indirect)?
4. To what extent tax policies can assist in reducing these biases?

The definitions of explicit and implicit biases developed are discussed in section 2.

The paper is organized as follows: Section 2 develops the conceptual framework for analyzing gender equity in taxation. The common methodology employed in analyzing the gender dimensions of tax incidence in direct and indirect taxes in the six countries are outlined in section 3. Findings from the incidence analysis of gender equity in direct taxes are discussed in section 4, and those of indirect taxes are provided in section 5. The summary of the policy simulations is presented in section 6. Section 7 concludes the chapter.

## **2. Conceptual Framework for Analyzing Gender Equity in Taxation**

### ***2.1 Gender Analysis***

Taxation systems have important implications for class and gender equity (Huber, 2005). The starting point of the argument is that effective tax collection is a necessary, though not sufficient, condition for the amelioration of gender-based poverty and inequality. Low aggregate tax collection has implications on gender equity because it prevents the establishment of programs that counteract market distribution of income, in which women are generally disadvantaged.

#### ***2.1.1. Equity in gender and taxation***

Tax systems are designed as a result of many economic, political, and social influences, and often reflect decision makers' values and attitudes on gender roles and responsibilities (Elson 2006, Stotsky 1997). It is therefore not surprising that gender bias is reflected in their structure. Stotsky (1997) argues that gender bias in taxation may be explicit or implicit. Explicit gender bias arises from treating women and men differently

in laws or regulations. It is easily identified from the language written in the laws or regulations, and is more often found in the personal income tax. Implicit gender bias arises from the differences in the way the tax system affects men and women's well being due to existing social norms about gender roles, and the gender differences in consumption, employment and ownership patterns. It can be found in any tax, and is harder to identify since a normative decision needs to be made about desirable social arrangements and outcomes.

Barnett and Grown (2004) outline four "stylized facts" about gender differences in economic activity that should be used for understanding the impact of taxation on men and women, and are likely to cause implicit gender biases. These are: a) gender differences in paid employment, including formal/informal employment, wages, and occupational segregation; b) women's work in the unpaid care economy; c) gender differences in consumption expenditure; and d) gender differences in property rights and asset ownership.

For example, under an individual income tax filing system, employment profiles for women make them less likely to bear a large share of direct tax burden if the system has progressive tax rates (Grown, 2010). Firstly, women enter and exit the labor force more frequently than do men, and they are more likely to be in part-time and seasonal jobs. Secondly, women's income is lower than men's. Thirdly, women predominantly work in informal employment, which often excludes them from the income tax net because they earn too little, or because they choose not file tax returns (Grown, 2010). However, under a joint filing income tax system, implicit gender bias can result because an increasing tax rate for secondary workers in the household (which are usually women) may discourage them from entering the labor market (Stotsky 1997). Further, the system of deductions and exemptions for professional expenses, mortgage interest payments, dividend payments are more likely to reduce the tax burdens of men than women because a higher proportion of men are employed in formal jobs, and own financial and physical property (Stotsky 1997).

Implicit biases can also exist in other taxes. For instance, under sales taxes, there may be differential rates applied to different commodities. If women are less likely to purchase of the types of goods subject to higher indirect taxes, such as necessities or personal products, the incidence of indirect taxes is lower than for men. This creates a certain implicit gender bias, according to Stotsky (1996). Similarly for taxes on international trade, since these taxes are also impersonal, rarely does one find explicit gender bias. But there are implicit biases built into the definition of the base, the structure of tax rates, and other features of the tax system (Stotsky, 2016).

Elson (2006) argues that, while Stotsky's definition of gender bias provides a useful framework, Stotsky's definition implies that tax systems that treat women and men differently as biased, while systems that treat them the same as non-biased. However, in

treating women and men the same, gender equality would not be achieved in the presence of discrimination against women and prevailing gender roles and responsibilities (Elson 2006). By applying the principles of the Convention for the Elimination of All Forms of Discrimination Against Women (CEDAW) in taxation, Elson (2006) therefore argues that different treatment for different groups is justified in order to overcome discrimination and achieve substantive equity. This calls for a justification to include the gender dimension in the analysis of tax incidence.

### *2.1.2. Efficiency in gender and taxation*

Although this study is concerned with equity, taxation affecting the decisions to enter the labor market implies that the efficiency side should also be addressed. One of the basic principles of optimal taxation is that the government should apply lower taxes to the goods that have a more elastic supply (inverse elasticity rule) (Ramsey 1927).

Since women's labor supply is more elastic than men's, optimal taxation theory suggests that tax rates on labor income should be lower for women than for men (Alesina and Ichino, 2007, Triest, 1990). However, when the income of the secondary earner (usually women) is added to that of the first earner (usually men) to file taxes jointly, it is not gender neutral. Joint filing of two incomes with a progressive taxation conflicts with optimal taxation: the secondary earner's income is taxed at a higher marginal rate, implying implicit gender bias. Consequently, one of the most straightforward effects on efficiency refers to the effects of joint taxation on labor supply. The choice of the taxable unit, whether by household or individual, also has implications on efficiency since it has an effect on the marginal tax rate of the unit and therefore the decision to work

The efficiency of Gender Based Taxation (GBT) hinges on different elasticities of the labor supply between men and women. If women's incomes are taxed at a lower rate than men's, then GBT provides substantial welfare, GDP and employment gains because it minimizes the aggregate social loss from labor market distortions (Alesina et. al., 2007). These results are confirmed by numerical simulations and are robust to perturbations in the modeling framework, and to extensions of the model that consider cross elasticities, heterogeneous households, and household production. Nevertheless, while this argument is well known in the academic literature, it is not taken seriously as a policy proposal (Alesina et. al., 2007).

### *2.1.3. Examples of studies on tax policies*

There are several studies that attempt to calculate the incidence of taxation on gender equity.

Grown and Valodia (2010) present case studies on eight advanced and developing countries (Argentina, Mexico, Morocco, Ghana, Uganda, India, South Africa and the

United Kingdom). It develops a harmonized analysis for direct taxes (Personal Income Tax) in which the statutory tax incidence is analyzed, and for indirect taxes, in which economic incidence is analyzed following the methodology discussed in this chapter. The studies examine the ways in which these taxes result in explicit and implicit biases. They find that explicit biases in direct taxes exist in Argentina, India, and Morocco, and implicit biases occur in all countries (Grown, 2010).

With regard to indirect taxes, the case studies in Grown and Valodia (2010) focus on the value-added tax, excises, and fuel taxes. The study classifies households into gender types according to household members' employment status, and the sex composition of the household. Grown and Komatsu (2010) show that the tax incidence of indirect taxes is generally greater for male-breadwinner households or dual-earner households than for female-breadwinner households and households, where no one is employed. For instance, male-breadwinner households face the largest burden of total indirect taxes, VAT and excises in Ghana, Mexico, South Africa and Uganda. Dual-earner households bear the heaviest incidence of VAT in Argentina, Mexico, Morocco and the United Kingdom. Looking at demerit goods, due to the gendered pattern of expenditure, tax incidence for alcohol and tobacco falls on male breadwinner households in all countries. However, when the incidence analysis is disaggregated by commodity, a more nuanced picture emerges. The study finds that implicit biases may exist in some commodities that meet basic needs and reduce women's unpaid work. Incidence of taxes on food is borne most heavily by the poorest female-breadwinner households in India, the United Kingdom, and South Africa, and incidence of children's clothing is borne by the poorest female-breadwinner households in Uganda, Ghana, and South Africa. Further, households with more women than men generally bear the largest incidence of utilities.

Lahey (2015) presents the results of an assessment into the taxation system of Alberta, Canada, with an emphasis on the impact of recent tax reforms on gender equity. Tax cuts ("detaxation") designed to permanently restructure the provincial revenue system have adversely affected women and low-income men in order to fund tax breaks for corporations and high-income individuals. This has brought about significant reductions in the level of progressivity in its taxation system. The report analyzes the impacts of compensatory measures, such as adding additional personal income tax rates and tax credits to make them more gender equitable. An increase of indirect taxes would worsen the inequities of Alberta taxation system.

Daniels (2008), using a standard benefit incidence analysis, assesses the impact of tariff reductions in South Africa in 1995, 2000, and 2004. The study finds that male-headed households bear a larger share of tariff incidence than female-headed households. For both male and female-headed households, the share of the tariff burden is greater than to their share of total expenditure.

Siddiqui (2009) introduces a gender dimension to a computable generalized equilibrium model to compute the impact of Pakistan's trade liberalization. The study finds that trade liberalization increases women's employment in unskilled jobs particularly due to the higher employment rate in the textile sector. However, in poor households, the gender income gap worsens, and women are more time poor than before trade liberalization.

### **3. Methodology**

Household expenditure or income surveys are used to analyze the gender dimension of direct and indirect tax incidence in each country. Under indirect taxes, the methodology for calculating incidence of Value Added Tax (VAT), excise tax and fuel is discussed in section 3.4. In the current study, we develop a methodology to measure the gender dimension of direct taxes as this was not analyzed in the first phase due to lack of income data in some countries. The approach to analyzing incidence of personal income tax (PIT), social security contribution or payroll taxes is elaborated in section 3.3. But before these are discussed, we outline the methodological issues that apply to both taxes, namely the choice of the welfare indicator in section 3.1, and how households are classified into gender type households in section 3.2.

#### **3.1 Choice of welfare indicator and ordering of households by income or expenditure**

A study on the economic incidence of taxes takes into account of those who experience a reduction in their welfare resulting from the imposition of a tax. Therefore, the first step in an incidence study is to define the welfare indicator that ranks individuals or households.

Traditional studies order the unit of analysis (individuals or households) by their current household income. However, according to the life-cycle hypothesis and the permanent income hypothesis, while current income fluctuates overtime, expenditures are relatively more constant. Expenditures give a better picture of the households' long-term welfare because households engage in expenditure smoothing over time (Younger *et al.* 1999). Ranking through current income could lead to biased results if an individual is placed in a low-income level when she had only suffered a temporary negative shock. This bias is eliminated if individuals or households are ranked through permanent income.

Difficulties in estimating income profiles arise because results depend on the shape of the lifetime earnings profile (Fullerton and Rogers, 1991). This suggests that its best "proxy" variable, current consumption, should be used instead. Consequently, ranking individuals or households through current income or consumption should produce

different results, with the first one being less unequal than the second. In the literature on incidence analysis, both income and consumption have been used as the basic welfare indicator.

In order to account for tax incidence, two approaches have been used in the literature: accounting and behavioral approaches. The incidence analysis performed in this paper is the accounting approach, which ignores possible behavioral responses by agents to modify the amounts they actually pay. Accounting approaches are limited to first-round effects and do not consider second-round effects that behavioral approaches try to take into account. The difficulties in identifying the behavioral responses make it complicated to integrate it into the analysis (Sahn and Younger, 2003)

Additionally, it is known that there are two approaches to estimating the incidence effect of taxes: partial equilibrium and general equilibrium models. Although the first approach ignores second round effects that would arise after a change in taxes, and limits these effects to the market in which these tax changes occurred, a partial equilibrium model can be more easily computed.

This paper assesses equity in two aspects. Vertical equity conducts the analysis of taxes paid through different welfare levels, meanwhile horizontal equity analyzes whether tax system affects differently across different groups, mainly, as is this case, the gender dimension.

Taxes are levied on the "income sources" side and on the "uses" of this income, that is, on the consumption side. Total tax burden would combine the burden on both sides. Analyses of tax incidence are concerned with the share of taxes paid by different groups (Sahn and Younger, 2003). Consequently, it is necessary to have a variable that defines the groups, and an estimate of the taxes paid by each group, in a context in which "taxes paid" stands for the loss in income through income sources or uses mentioned before.

It is theoretically accepted that the statutory incidence of tax (those who have to transfer the tax to the government) is not the same as the economic incidence of the tax, i. e., those whose real purchasing power declines because of the tax. Typically, it is assumed that indirect taxes on goods are shifted entirely to consumers, a standard result if markets are competitive and the taxes apply to final sales (or value added) only (Sahn and Younger, 2003); that is, consumer's demand is inelastic. Tax burden generated from direct taxes, on the contrary, is shifted backwards on the income source, by means of reducing disposable income for income earners, meaning inelastic labor supply. Taxes, however, are not paid according to the letter of the law, both because of corruption and the fact that many transactions in developing countries occur in informal markets.

In some cases, taxes may not be directly observed in surveys so they may have to be assessed indirectly. According to Bourguignon and da Silva (2003), indirect methods involve applying official income tax schedules or imputing indirect taxes paid through



observed spending, which is consistent with the partial equilibrium literature. The most common source of this data is a household income and expenditure survey. So, instead of assigning the effective tax collection, the statutory rates on each of the expenditure items in the National Household Expenditure Survey are considered for indirect taxes.

The key variable for analyzing taxes borne by every quintile and household category is the tax burden. In order to account for the differences in income and consumption patterns, two welfare indicators have been considered: income and consumption. Typically, the incidence of direct taxes and transfers is calculated using income, and for the incidence of indirect taxes, some authors recommend using consumption (Lustig and Higgins, 2013). Tax burden is the ratio of taxes over income before taxes, in per capita terms, and taxes over consumption expenditure after taxes. Consequently, the tax ratios borne by each household are estimated.

The methodology for this study will consider two variables for the analysis: "tax as a percentage of per capita expenditure (post tax expenditure)", and "tax as a percentage of per capita income (previous to taxes)". The rationale for this classification is that income is more unequal than consumption, so it would be interesting to study the behavior of tax incidence considering both indicators of welfare. The presentation of results in both rankings of welfare indicator would enable a comparison of the same individuals across different classifications. In addition, this categorization should have different implications for the analysis on gender equity because of the intersection of gender and poverty.

For a survey with income and consumption data when income is being used as the measure of well-being, the estimation of direct taxes burden is calculated as:

$$\frac{\tau(x)}{x} = \frac{\sum_{j=1}^J w_j l_j \tau_j}{\sum_{j=1}^J w_j l_j}$$

Where w: hourly income, l: labor hours, and  $\tau$ : taxes on income

Therefore, a tax will be progressive if the aforementioned ratios increase when we consider higher welfare levels; on the contrary, taxes would be regressive if tax burden decreases with per capita income or consumption expenditure:

$$\frac{d \frac{\tau(x)}{x}}{dx} \geq 0$$

Where x stands for income.

The estimation of indirect tax burden is, when consumption is taken as a welfare indicator:

$$\frac{t(c)}{c} = \frac{\sum_{k=1}^K t_k c_k}{\sum_{k=1}^K c_k}$$

Where  $t$  is tax on consumption items, which are denoted with  $c$ .

When income is taken as a welfare indicator, the denominator should be replaced.

$$\frac{t(c)}{x} = \frac{\sum_{k=1}^K t_k c_k}{\sum_{j=1}^J w_j l_j}$$

As income is higher than consumption (and even more in this case, in which income before taxes is included), all tax burden figures should be lower when income is used as a welfare indicator than when consumption expenditure is used.

Income follows a more unequal distribution pattern than that of consumption expenditure; therefore, greater regressivity in indirect taxes (that is, taxes that fall on consumption) should be expected. This regressivity would however be mitigated when ordering individuals by per capita consumption expenditure rather than by per capita income.

Expenditure in this study includes consumption expenses reported at the household level, but excludes home-produced goods, remittances, donations, direct taxes, investments, pension contributions, savings, repayments on loans, gifts given to other households, net losses of self-employment and value of house for homeowners<sup>2</sup>. Per capita expenditure is calculated by dividing expenditure by the household size.<sup>3</sup>

For the ranking of households by per capita income, we estimate gross income, which includes labor and non-labor income of household members, including public pensions and public transfers.<sup>4</sup> For salaried workers, income reported in the household surveys is net income, which is income after social security contributions have been withheld. Therefore, we calculate gross income as follows:

$$\text{Gross income} = \text{net income} / (1 - \text{tax rate})$$

Where *tax rate* is the rate of contributions for employers and employees.

Per capita income is calculated by dividing gross income by the number of household members, and households are then ordered into quintiles.

### 3.2 Classification of households into gender type groups

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<sup>2</sup> A detailed list of expenditures is included in Annex 6.

<sup>3</sup> In the last study, there was a discussion about whether adult equivalence scales would be a better measure of welfare from a gender perspective. However, it was decided that per capita measure was less arbitrary than any equivalence scale method. See Grown and Komatsu (2010) for more details.

<sup>4</sup> Public transfers and pensions were included because of their importance especially for those whose only source of income is pension income. Otherwise, they would be paying taxes, while they earn no income. Note, however, that public transfers will be excluded for the calculation of income tax in section 3.4.

Given that household surveys only provide household level expenditure and not individual expenditure, it is not possible to conduct an intra-household analysis. Therefore, it is necessary to classify households into groups that serve as proxies for the underlying gender relationship (Grown 2010). Consistent with Grown and Valodia's (2010) study, households are categorized into two types of groups. The first group involves classifying households according to the members' employment status, which is a proxy for bargaining power. These are:

1. Male breadwinner households. At least one employed man and no employed woman in household.
2. Female breadwinner households. At least one employed woman and no employed man in household.
3. Dual earner households. At least one employed woman and man in household.
4. None-employed households. No one employed in household.

We hypothesize that a woman who is employed is likely to have greater decision-making power in allocating household expenditures than a woman who is not, which could result in consuming more goods that substitute for, or reduce women's workload (Grown and Komatsu 2010). We expect the tax incidence to reflect the differences in consumption bundles according to the employment patterns of household members.

In addition, households are grouped according to the proportion of women and men adult members of households, defined to be 18 or over. These are:

1. Male dominated households. More adult men than adult women.
2. Female dominated households. More adult women than adult men.
3. Equal number households. Same number of adult men as adult women.

Categorization of households into sex composition is a proxy for the gender relations that could impact the consumption patterns of women and men. For both household classifications, incidence was calculated for households with children and without children.

We do not analyze the incidence by whether the household is headed by a woman or a man because the definition of headship is not uniform across countries making it difficult to conduct a cross-country analysis.<sup>56</sup>

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<sup>5</sup>See Grown (2010) for a detailed discussion.

<sup>6</sup>The study for Mexico includes household income generation as an additional category. It classifies households according to the share of women and men in the household's total income. For instance, a household would be female maintained if women of the household contribute with 60 % or more of the monthly income.

### 3.3 Calculation of direct tax incidence

In the analysis of direct tax incidence, we consider PIT, social security contributions and other taxes related to income. Corporate income taxes are excluded because it is difficult to account for the amount of incidence borne by the capital owners or employers and how much is transferred to consumers through a higher price. Since the aim is to capture pre-tax income distribution, as income reported in household surveys usually includes public transfers, public transfers (monetary and non monetary) are excluded from reported income. It is assumed that Personal Income Tax and Social Security Contributions, both on the side of the employer and the employee, are borne by the employees (see discussion below). Although consistent with the literature, these are strong standard assumptions that imply that labor supply is perfectly inelastic.

Given that some of the countries in the study have a separate income tax from PIT for certain types of independent workers, these workers were separated from the calculation of PIT. These include Monotributo for Argentina and Uruguay, and self-employed taxpayers in Peru.

In calculating PIT, we first have to estimate taxable income. Since we need to have a pre-tax measure of income, public transfers are subtracted from gross income calculated in section 3.2, but public pensions are included. Relevant deductions and allowances from the tax code are applied to the amount of gross income over the minimum income threshold to obtain taxable income. Taxes paid are then estimated by using the tax rates on the taxable income according to its income tax bracket. PIT paid by individual members are summed up within the household and divided by the number of household members to obtain per capita tax. PIT Incidence is calculated by dividing per capita PIT by the income per capita. We assume that workers bear the full incidence of tax on labor so that economic incidence is the same as statutory incidence. This is equivalent to assuming that workers supply their labor perfectly inelastically (Younger *et al.*, 1996).

For social security contributions, we assume that the burden is borne entirely by employees through a reduced salary, so in the incidence analysis, we include both the contributions made by the employee and the employer. Argentina and Jamaica cases examine the incidence of payroll taxes, which include contributions to the pension fund and health insurance for Argentina, and National Housing Trust contributions, education tax, and employment training contribution in Jamaica. The method of deriving social security contribution (or payroll taxes) is to multiply gross income (excluding transfers) by the tax rates for the employers and employees, and then summing up the total.

Other taxes considered in the incidence analysis include Health taxes in Uruguay, Monotributo in Argentina and taxes for self-employed taxpayers in Peru.<sup>7</sup> Monotributo is

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<sup>7</sup> Uruguay does not consider the small taxpayer system in the incidence analysis because the percentage of taxpayers who use the system is very small.

a single tax system for small taxpayers (whose income does not exceed a certain threshold), who pay a fixed amount of taxes based on their income brackets (Rossignolo 2015). They are exempt from paying PIT and VAT, and sometimes exempt from social security contribution, but they are not entitled to any benefits available to other taxpayers. In Peru, there are three types of regimes for self-employed taxpayers - General regime, Special Tax Regime and Single Simplified Regime - who have the option to choose simplified systems that apply to PIT and VAT (Leon and Calderon 2015). The Simplified Regime in Peru is similar to the Monotributo in Argentina where taxpayers pay a fixed amount of taxes, but they are exempt from paying PIT and VAT.

We calculate tax incidence of PIT, social security contribution and other taxes by dividing taxes paid per capita by per capita gross income.

There are several assumptions that were made in the calculation of PIT. First, some countries have deductions or tax credits for mortgage payments (see annex A3 for details). However, because information on mortgage payments is not available in the surveys, deductions on mortgage payments are not included in the calculations of PIT. Similarly, some countries have deductions or exemptions for professional expenses, but these expenses are not deducted from taxable income because of the difficulty in identifying who benefits from them in the income surveys. Given that men are more likely to own property and to be employed in professional jobs, they can benefit from deductions/exemptions for mortgage payments or professional expenses. However, this information is not always available. In the incidence analysis of PIT that follows, the exclusion of deductions and exemptions is likely to underestimate the implicit gender biases resulting from the gender differences in ownership of property and employment patterns.

There are variations in the treatment of deductions or tax credits for children and spouses in the calculation of PIT. In Uruguay, tax credits for dependent children are applied to the PIT of the household heads. In Costa Rica, tax credits available on a family basis (for a spouse and dependent children) are not applied because it is not clear who benefits from these from the surveys.

In most cases, it is assumed that there is no evasion of direct taxes (with the exception of informal workers), except for Uruguay. There, it is assumed that if individuals pay social security, they pay all direct taxes (such as PIT, health taxes), while if they do not pay social security, they also evade all other direct taxes. Corbacho, Cibils and Lora (2013) estimate that the evasion rate of Personal Income Tax stands at around 32 percent in Peru, close to 38 percent in Mexico, and about 50 percent in Argentina<sup>8</sup>. In Jamaica, it is estimated that 59 percent of the workforce are not registered and do not file taxes (Private Sector Working Group on Tax Reform 2012 as cited in Christie and

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<sup>8</sup> The estimation for evasion for PIT in Argentina cannot be disentangled from the calculation for evasion in corporate income tax because of lack of information.

Thakur,2015). The implication of tax evasion on incidence analysis is that it overestimates incidence for those who evade taxes. Mahon, Jr. (2012) argues that higher income earners are more likely to underreport incomes resulting in an overestimation of progressivity of income tax. Given that only individuals in the upper income levels are in the PIT tax net in many countries in Latin American (Corbacho, Cibils and Lora 2013) and there is a high level of evasion of PIT, and it does indeed imply that higher incomers are more likely to evade taxes.

An overestimation of incidence is also likely to be larger for workers in the informal sector than formal sector since the taxes are often withheld at source for those in the formal sector, while it is self-reporting for workers in theinformal sector. From a gender perspective, if women are more likely than men to work in the informal sector than the formal sector,then women’s income tax incidence would be overestimated. An exception is found in Jamaica, where a higher percentage of women are employed in the formal sector than men (Christie and Thakur,2015). In this case, the income tax incidence is likely overstated for men.

As for the incidence on social security contributions, the study analyzes static incidence of the taxes and does not take into account of who ultimately benefits from them. Accordingly, it does not take account of lifetime incidence, which has gender implications due to the differences in longevity between women and men (Barnett and Grown 2004).

### 3.4 Calculation of indirect tax incidence

In calculating consumption expenditure, household expenditure is standardized into monthly equivalents, and where relevant, prices are standardized to reflect the cost of living by locality. Consumption expenditureis classified into 34 items, shown in A6, consistent with Grown and Valodia (2010). These items have been designed to exhibit the gender characteristics of consumption behavior.

In order to calculate tax incidence, we have to estimate the amount of tax paid by matching the tax rates and prices on each expenditure item in the household expenditure survey. Following Grown and Valodia (2010), for a VAT with no other taxes affecting the tax base, tax paid for expenditures items reported in the household surveys are calculated as:

$$taxpaid_{ij} = rate_j * (expend_{ij} / (1 + \sum_j rate_j))$$

wheretaxpaid<sub>ij</sub>is the tax paid by household *i*by household*i* on item *j*, *rate<sub>j</sub>* is the tax rate on item *j* and *expend<sub>ij</sub>*is the reported expenditure for household *i*on item *j*.

VAT is a tax paid on the difference between what was paid at the time of purchase and the price that it was received. When the tax rates differed between the point of purchasing

and selling of the goods, especially in the case of tax exemptions for certain goods, an input-output table is used to estimate how much VAT is contained in the final price, or an estimation of the constitution of the production chain for every product.

If there is more than one ad valorem tax, such as a VAT and excises, and the taxes are sequential, for example, the excise rate is applied, and then the VAT is applied on the cost and the excise, then excise paid is calculated as:

$$\begin{aligned} \text{VAT paid} &= (\text{VAT paid}) * (\text{VAT base}) = (\text{VAT rate}) * (\text{expenditure} / (1 + \text{VAT rate})) \\ \text{excise paid} &= (\text{exc rate}) * (\text{exc base}) = (\text{exc rate}) * (\text{expend} / ((1 + \text{VAT rate})(1 + \text{exc rate}))) \end{aligned}$$

For a unit tax, the tax paid by household  $i$  on item  $j$  ( $\text{taxpaid}S_{ij}$ ) is:

$$\text{taxpaid}S_{ij} = (\text{expend}_{ij} / \text{price}_j) * \text{duty}_j$$

where  $\text{taxpaid}S_{ij}$  is the tax  $S$  paid by household  $i$  on item  $j$ ,  $\text{price}_j$  is the retail price of that item,  $\text{expend}_{ij}$  is the reported expenditure for household  $i$  on item  $j$ , and  $\text{duty}_j$  is the per unit duty on item  $j$ .

Incidence is estimated by dividing the taxes paid per capita by the welfare measure of per capita post-tax consumption or per capita gross income.

In all cases, consistent with other incidence studies, we assume that the burden of tax is passed on to the consumers through a higher price, as it was already mentioned. The only exception the calculation of the fuel tax incidence where incidence falls on consumers of fuel and on users of public transport. This was carried out by the use of an input output matrix, or if it is not available, a rule of thumb of 30 percent of whole tax was used (Grown and Valodia 2010, Younger *et al.*, 1996).

The incidence analysis also assumes that there is no evasion of indirect taxes. This analysis could result in an overestimation of the regressivity of indirect taxes. For example, in Uruguay, it is estimated that VAT tax evasion stood around 13 percent in 2012 (DGI 2013 as cited in Bucheli and Olivieri (2015)).

The study is a first order analysis of incidence and does not take into account of behavioral responses, lifecycle or general equilibrium effects of taxation. There could be gender effects of these. For example, raising taxes on alcohol or tobacco reduces household income, which could lead to a tighter budget for items that meet basic needs such as food, medical expenses and clothing. In terms of the lifecycle, women live longer than men, and therefore women face different needs than men (Stotsky 1997).

## 4 Direct taxes

### 4.1 *Explicit and implicit gender biases in direct tax systems*

Table 1 provides an overview of the explicit and implicit gender biases in direct taxes in the six countries in this study.<sup>9</sup> There is one instance of explicit gender bias in this study, and that is found in Argentina. The tax code stipulates that non-labor income from property jointly owned by a married couple has to be filed in the husband's tax returns, unless the wife is the sole owner, the assets have been legally separated, or the wife legally manages the property (Enriquez, Gherardi and Rossignolo 2010). This constitutes an explicit bias because women are treated as owners of joint property unless they can legally prove otherwise.

Implicit biases are found in all countries in the study. There are four examples of how the allocation of exemptions, deductions and tax credits in personal income tax (PIT) could cause an implicit gender bias due to the gender differences in employment, ownership of assets and social arrangements. First, deductions or exemptions for professional expenses, available in Argentina and Mexico, are more likely to benefit men as they predominate the category of professionals and formal workers. Jamaica exempts allowances related to housing, motor vehicle, telephone use, credit cards and stock option for employees, however, since women are more likely to be employed in the formal sector (Christie and Thakur, 2015), they are in a better position to benefit from these exemptions. Second, tax credits for a spouse would lower PIT incidence of a married couple discriminating against single parent households with an equivalent income in Costa Rica and Argentina. Since women are more likely to be single parents than men, this constitutes an implicit gender bias.<sup>10</sup> Third, interest or dividend payments are exempt from PIT in Argentina and Peru, and this could create an implicit gender bias because men are more likely to own financial assets than women. Fourth, tax credits for mortgage payments and real estate taxes can be applied in Uruguay and mortgage interest payments can be deducted in Mexico. These tend to benefit men more than women because they are more likely to own property.

The gender implications of the assignment of tax credits for children in this study are unclear. In Costa Rica, even though income tax follows individual filing system, tax credits for children are only assigned to a family of an amount ₡16,080 (44 international dollars) per child in 2013. If both parents are taxpayers, it is unclear who would claim the tax credit, and consequently the impact on incidence from a gender perspective is ambiguous. Similarly in Uruguay, a tax credit of 13 BPC per child (26 BPC in case of disabled child) is assigned to family. In a two-parent household, one parent can claim 100

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<sup>9</sup> An overview of the direct tax systems including whether the system is scheduler or global, the PIT filing unit, key deductions, tax credit and exemptions, and tax deductions/credits for dependent children and spouses are given in Annexes A1-A4.

<sup>10</sup> A third of all households are female headed in Costa Rica (Trejos, Mata and Oviedo 2015).



percent of the credit and 0 percent to the other, or 50 percent of the credit can be assigned to each parent. It is uncertain how this affects the incidence analysis by gender. In other countries, the assignment of tax deductions, exemptions or credits for children has been a source of explicit gender bias, where they are available to the husbands but not the wives in Morocco, Jordan and Zimbabwe (Barnett and Grown 2004, Grown 2010).

As we will see in the next section, the incidence analysis of direct taxes reveals that there are implicit gender biases in PIT in Jamaica.

All countries in the study follow an individual filing system, which are more gender-equitable than joint filing (Stotsky 1997, Grown 2010). However, the allocation of tax preferences, exemptions and deductions can cause implicit gender biases. These findings are consistent with those identified in Grown and Valodia (2010).<sup>11</sup>

Table 1: Types of explicit and implicit bias in direct taxes

	<i>Explicit bias</i>	<i>Implicit bias</i>
Allocation of non-labor income/ family business income	Income from joint property has to be filed in husband's tax returns. However, women could face a lower tax burden because income earned from property is filed by the husband (Argentina)	
Allocation of tax preferences, credits, exemptions and deductions		Professional exemptions and deductions benefit professionals and workers in formal employment – men more likely to be in this category (Argentina, Mexico) except for Jamaica. Tax credits or deductions for spouse – more likely to benefit two parent households (Argentina, Costa Rica <sup>12</sup> ). Tax credits for children – only available to one parent (Costa Rica, Uruguay). Exemptions for interest or dividend payments – men more likely to own financial assets (Argentina, Peru) Tax credits/deductions for mortgage payments and real estate taxes (Uruguay), deductions for mortgage interest payments (Mexico) - men more likely to own property
Tax burden		Female breadwinner households with

<sup>11</sup> For a detailed discussion on how the direct tax systems create explicit and gender biases in the previous study, please see Grown (2010) and Grown and Komatsu (2010).

<sup>12</sup> In the case of Costa Rica, the tax credit is available for a dependent spouse.

		children bear the largest burden (Jamaica)
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## ***4.2 Incidence analysis of direct taxes***

### ***4.2.1. Distribution of gender household types by per capita quintiles***

We want to examine how the gender household types are distributed by income and consumption because they have an implication on who bears the tax burden. An analysis of the distribution of households reveals that, when households are ranked by income, the share of female breadwinner households that belong to the poorest quintile is generally higher than that of male breadwinner or dual earner households.<sup>13</sup>

When ranked by consumption, however, male breadwinner households are more likely to belong to the poorest quintile than female breadwinner households in Mexico, Costa Rica and Uruguay. For Jamaica, the percentage of female breadwinner households in the poorest quintile is about the same as for male breadwinner and dual earner households. In Argentina and Peru, female breadwinner households' share in the poorest quintile is higher than male breadwinner households'.

However, when disaggregated by sex composition (and ranked by consumption), the share of female dominated households (where the number of adult women exceeds that of adult men) belonging to the poorest quintile is higher than that of male dominated or equal number households in all six countries.

The difference in the distribution of female breadwinner versus female dominated households arises because while female dominated households include employed and not employed women, female breadwinner households only include women who are employed. We find that the majority of the poorest none-employed households are female dominated. The share of female dominated households among the poorest none-employed households, by consumption distribution, ranges from 63 percent in Uruguay, 55 percent in Costa Rica and Jamaica, and 54 percent in Argentina. Therefore tax burden of the poorest none-employed households is of critical importance in terms of analyzing gender equity in taxation where poverty and gender intersect.

It should be noted that there is a sizable number of rich female breadwinner households in all countries. Ranked by consumption, the share of female breadwinner households in the richest quintile is 21 percent in Jamaica and Uruguay, 24 percent in Costa Rica, and 25 percent in Mexico and Peru, which is driven by the presence of highly educated women who have professional jobs.

It is also important to note that there is a high rate of female headship, where 36 percent and 47 percent of all households are female headed in Costa Rica and Jamaica,

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<sup>13</sup> See Grown (2010) on a discussion on whether the proper unit of taxation should be the household or the individual from a gender perspective.

respectively.<sup>14</sup> Female heads of households have to play a dual role of being the sole provider of income and caretaker of the household. Female-headed and female breadwinner households are more likely to consist of a single parent with children but no partner, whereas male type households are more likely to consist of a partner and children. This is an important distinction from a gender perspective because while male breadwinner households benefit from a partner who provide home produced goods and services including care work that are tax-free, female breadwinner households often have to outsource these services in the private market which are taxed (Nelson 1996, Elson 2006).

Dual earner households are generally concentrated in the richer quintiles. For example, in Costa Rica and Uruguay, 53 percent and 43 percent of dual earner households belong to the top two quintiles, respectively. For Argentina, Jamaica and Mexico, it is just under 40 percent. An exception is found in Peru where dual earner households tend to be overrepresented in the lower quintiles - 43 percent of dual earner households belong to the poorest two quintiles.

#### ***4.2.2 Progressivity of direct taxes – vertical equity***

Direct taxes include personal income tax (PIT), social security contribution and other direct taxes, where relevant, and the average of all these taxes are referred to as total direct taxes. The incidence of direct taxes calculates tax per capita as a percentage of income per capita, and the households are ordered and clustered into per capita income quintiles.

PIT is highly progressive, where the tax burden increases across the income distribution in all six countries. However, while it is progressive, the PIT has limited distributive effects because of the small tax net of the PIT, the significant number of exemptions and deductions, low direct taxes to GDP ratio, and high levels of evasion in Latin America (CEPAL 2013, Corbacho *et al.*, 2013, Lustig, Pessino and Scott, 2014). Due to these reasons, Corbacho *et al.*, (2013) estimate that only about 3 to 4 percent of the population actually pays PIT in Peru and Argentina, while it stands at 14 percent for Uruguay.

The minimum income exemption threshold for PIT is high in some of the countries in the study. Accordingly, in Argentina and Costa Rica, only the upper income quintiles bear the PIT burden. It is estimated that in Costa Rica, less than 20 percent of the salaried persons and pensioners earn an income above the threshold (Trejos, Mata and Oviedo 2015), while it is about 30 percent in Argentina (Rossignolo 2015). In Peru, the minimum labor income needed to reach the exemption threshold is about 1.4 times the level of GDP per capita as seen in Table 2. For Jamaica, the PIT threshold is currently just above the

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<sup>14</sup>27 percent of households are headed by women in Peru, while the figure is 14 percent for Argentina.

GDP per capita (Christie and Thakur 2015), whereas for Uruguay, the threshold is about 77 percent of per capita GDP.

Table 2: Number of times per capita GDP needed to reach minimum income exemption threshold

<b>Country</b>	<b>Income for Minimum exemption threshold</b>
Argentina (2013)	0.32
Costa Rica (2013)	1.69
Jamaica (2012)	1.04
Mexico (2012) <sup>a</sup>	na
Peru (2013)	1.43
Uruguay (2013)	0.77

Sources: Authors' calculations based on Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>a</sup>Mexico does not have a minimum income threshold for PIT.

The tax burden of the PIT is small in magnitude compared to that of social security contributions. For example in Uruguay, the PIT tax burden is 1.5 percent of gross income in contrast to 9.6 percent for social security contributions incidence (Bucheli and Olivieri 2015).<sup>15</sup> In Peru, the PIT tax burden is only 0.2 percent compared to 13.1 percent for social security contributions' tax burden (Leon and Calderon 2015).

Table 3: Estimated Tax burden (tax as a percentage of income)

<b>Country</b>	<b>PIT</b>	<b>Social Security Contributions</b>
Argentina	2.1	15.9
Costa Rica	0.9	13.4
Jamaica	4.6	13.2
Mexico	4.6	9.9
Peru	0.2	13.1
Uruguay	1.5	9.6

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

Total direct taxes (an average of PIT, social security contributions and other direct taxes) are progressive in Argentina, Costa Rica, Jamaica, Mexico and Uruguay driven by the progressivity of PIT, but the degree of progressivity is reduced by the regressivity or proportionality of social security contributions. In Peru, there is regressivity in total direct

<sup>15</sup> However, it should be noted that Uruguay has almost doubled the proportion of PIT as a share of total revenue since the 2007 PIT reforms (Bucheli and Olivieri 2015).

taxes found at the top two quintiles, where the fourth quintile bears a larger burden than quintile five, and this is due to the regressivity of the social security contribution in the upper quintiles. Due to the limited size of the PIT burden, the progressivity of PIT cannot compensate for the regressivity of the social security contributions, making the overall system regressive.

Social security contribution or payroll taxes are proportional across lower income quintiles and regressive in the upper quintiles in Costa Rica, Jamaica, Mexico and Uruguay due to the cap in contributions for richer taxpayers. Payroll taxes are progressive in Argentina. In terms of other taxes, Monotributo in Argentina is moderately regressive, and health taxes in Uruguay are progressive but there is regressivity at the top quintiles. In Peru, taxes for self-employed taxpayers are progressive.

#### ***4.2.3 Direct tax incidence across gender household types***

When disaggregated by household employment status, dual earners generally face the highest burden of direct taxes, as shown in table 4. Exceptions are found in Mexico where male breadwinner households bear the largest burden, and in Jamaica where female breadwinner households face the heaviest burden. Further, in Jamaica, dual earner households bear a lower burden than female or male breadwinner households, and this is because the PIT income exemption threshold (below which tax is exempt) is assigned to an employed person on an individual basis. Two households with the same income face a different burden because the dual earner households have more employed persons than male or female breadwinner households, and therefore a larger proportion of their income is exempted for dual earner households than single earner households (Christie and Thakur, 2015). In addition, in Jamaica, the household size of female breadwinner households is larger with more dependents than male breadwinner households, and therefore at the same per capita income, the exemption available on a per capita basis is larger for the male breadwinner households (Christie and Thakur, 2015).

In Peru, the magnitude of the PIT incidence is very small at less than 1 percent, and none-employed households bear the largest incidence. This is because a higher share of income of none-employed households consists of non-labor income by renting out equipment, property, real estate or land than other household types, even in the poorer quintiles (Leon and Calderon 2015). While there is a high minimum exemption threshold for labor income of US \$ 9,550 per year, no such exemption threshold exists for capital income. Therefore, it discriminates against non-labor income earners as they would have to start paying PIT from the first dollar they earn.

Similar to the employment status, when disaggregated by sex composition of the household, incidence of direct taxes falls most heavily on equal number households, with the exception for Jamaica and Peru where PIT burden is borne by female dominated households, and Mexico where the incidence of PIT is borne more heavily by male dominated households.

Incidence of social security contributions or payroll taxes is borne by dual earner households in all countries.

Table 4: Which household type bears the highest incidence of direct taxes?

<b>Incidence falls most heavily on</b>	<i>Total direct taxes</i>	<i>PIT</i>	<i>Social security contributions or payroll taxes*</i>	<i>Other taxes</i>
<b>By employment status</b>				
i. Male breadwinner households	Mexico	Mexico		
ii. Female breadwinner households	Jamaica	Jamaica		
iii. Dual earner households	Argentina, Costa Rica, Peru, Uruguay	Argentina, Costa Rica, Uruguay	Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay	Argentina, Peru, Uruguay
iv. None-employed		Peru		
<b>By household sex composition</b>				
i. Male dominated	Mexico, Peru	Mexico	Jamaica, Mexico, Peru	Argentina, Peru
ii. Female dominated		Jamaica, Peru		
iii. Equal numbers	Argentina, Costa Rica, Jamaica, Uruguay	Argentina, Costa Rica, Uruguay	Argentina, Costa Rica, Uruguay	Uruguay

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

\*For Argentina and Jamaica, payroll taxes are considered which include mandatory payments to health insurance, pension funds and employment funds.

The country papers disaggregate the incidence analysis by per capita income quintiles and by whether the household has children. Table 5 provides a summary of who bears the largest incidence when disaggregating by household type, per capita income quintile and presence of children.

Table 5: Which household type, by quintile and presence of children, bears the highest incidence of direct taxes?

	<i>Per capita income quintile</i>		<i>Social security contributions or payroll taxes<sup>a</sup></i>		
	<i>Total direct taxes</i>	<i>PIT</i>	<i>Social security contributions or payroll taxes<sup>a</sup></i>	<i>Other taxes</i>	

i. Male breadwinner	Quintile 4-5	Argentina (with children), Mexico (with children), Uruguay (with children)	Argentina (with children), Costa Rica (with children), Mexico (with children), Uruguay (with children)	Argentina (with children),	Uruguay (with children)
	Quintile 2-3	Peru (with children)		Mexico (with children), Peru (with children)	
	Quintile 1			Jamaica <sup>b</sup>	
ii. Female breadwinner	Quintile 4-5	Costa Rica (with children), Jamaica (with children)	Jamaica (with children)	Costa Rica (with children)	
	Quintile 2-3				
	Quintile 1			Jamaica <sup>b</sup>	
iii. Dual earner households	Quintile 4-5	Uruguay (with children)		Uruguay (with children)	Peru (with children), Uruguay (with children)
	Quintile 2-3				
	Quintile 1			Jamaica <sup>b</sup>	Argentina (without children)
iv. None-employed	Quintile 4-5		Peru (with children)		
	Quintile 2-3				
	Quintile 1				

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>a</sup>For Argentina and Jamaica, it is the payroll taxes.

<sup>b</sup>In Jamaica, incidence of payroll taxes is borne by the lowest quintile male breadwinner, female breadwinner and dual earner households.

Total direct tax incidence falls on male breadwinner households with children at the top quintile in Argentina, Mexico and Uruguay. Dual earners with children at the richest quintile also bear a similar burden as male breadwinner households in Uruguay. In Peru, incidence falls on male breadwinner households with children in the third quintile<sup>16</sup>. An exception is found in Costa Rica and Jamaica, where female breadwinner households with children at the top quintile bear the heaviest burden of total direct taxes. The explanation for Jamaica was discussed above, but in Costa Rica, the results are driven by the significance of social security contributions over PIT (with an average tax burden of 13

<sup>16</sup> The regressivity of direct taxes in Peru is driven by the regressivity of social security contributions.

percent for social security contribution compared to only 0.85 percent for PIT), and the fact that the richest female breadwinner households with children bear the largest social security contributions incidence (Trejos, Mata and Oviedo 2015). This is due to the presence of highly qualified women at the top quintile with formal sector jobs, whose income per capita is higher than other households, and who consequently pay higher social security contributions.

For the PIT incidence, male breadwinner households with children at the richest quintile bear the largest burden in Argentina, Costa Rica, Mexico and Uruguay. Female breadwinner households with children in the top quintile face the highest incidence in Jamaica. Only in Peru, do the none-employed households with children in the fifth quintile face the largest PIT burden, however, their tax burden is only 1.6 percent of gross income.

For social security contribution or payroll tax incidence, male breadwinner households with children at the richest quintile bear the largest incidence in Argentina, and those in the second or third quintile in Mexico and Peru. Incidence falls on dual earners with children in the fourth quintile in Uruguay. In Jamaica, payroll taxes are regressive, and incidence falls on the poorest male breadwinner, female breadwinner and dual earner households equally.

#### ***4.2.4 Implications for gender equity of direct taxes***

What are the implications for gender equity of direct taxes? One instance of explicit gender biases is found in the treatment of non-labor income arising from joint property in Argentina where it has to be filed in the husband's tax returns unless the wife can legally prove otherwise.

In all countries, implicit gender biases can arise from deductions or exemptions for professional expenses, interest payments, dividends, mortgage interest payments and real estate taxes. They are more likely to benefit male taxpayers because of the gender difference in employment and asset ownership patterns, and social arrangements. Recommendations to broaden the PIT tax base by reducing or limiting deductions for professional expenses, interest payments or mortgage interest payments, or assigning dividend payments and capital gains as taxable income would help reduce implicit gender biases and are in line with the gender equity objectives.

In the incidence analysis, because the burden of direct taxes falls more heavily on male breadwinner households in the top quintile in Argentina and Mexico, and it falls on male breadwinner and dual earner households at the richest quintile equally in Uruguay, we can conclude that direct taxes are not implicitly gender biased in the rate structure since it does not reinforce existing gender roles and inequalities in Argentina, Mexico and Uruguay. In Peru, incidence falls on male breadwinner households, but it is the middle quintile that bears the heaviest burden, hence the system is not vertically equitable.



What about the case for Jamaica and Costa Rica? In Jamaica, female breadwinner households bear a larger burden than male breadwinner households and dual earners and almost half of all households are female headed in Jamaica (Christie and Thakur,2015). Since most female-headed households comprise of a single parent with no partner, they often have to outsource domestic work including childcare, whereas a male-breadwinner households comprise of a male parent with a spouse who produce home produced goods and services that are tax free. Due to the differences in social arrangements between women and men, direct taxes reinforce or exacerbate existing gender inequalities, and therefore there are implicit gender biases in direct taxes in Jamaica.

In Costa Rica, female breadwinner households with children at the richest quintile face the largest burden of total direct taxes, followed by dual earners and by male breadwinner households. The result is driven by the incidence of social security contributions, which are larger than that of PIT. Women at the highest quintile are more likely to hold formal sector jobs and earn a higher income, leading to a larger contribution to social security than men. It is difficult to assess the gender equity implications in Costa Rica. On the one hand, the direct tax system is implicitly gender biased because a third of all households are female headed in Costa Rica. They have to rely on outsourcing housework by purchasing goods and services, which are tax-bearing, unlike male breadwinner households. However, this analysis takes a static point of view. If we were to consider the lifecycle effects of incidence, social security contribution results in higher benefits at a later stage in life, and women at the highest quintile are more likely to benefit from pension benefits than men. Further, in the poorer quintiles, female breadwinner households with children bear a lower tax burden than male breadwinner or dual earner households. Therefore there is little evidence of gender bias in the Costa Rica's direct tax rate structure.

## 5. Indirect taxes

There is a wide range in the general VAT rates established in the six countries, as presented in Table 6. Uruguay and Argentina set the highest general rate at 22 and 21 percent, respectively. Costa Rica has the lowest rate (for sales tax) at 13 percent, while the rates for Jamaica, Peru and Mexico range between 16 and 18 percent.

Table 6: General VAT rate

Country	General VAT rate
Argentina	21
Costa Rica	13
Jamaica	16.5
Mexico	16
Peru <sup>1</sup>	18
Uruguay	22

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>1</sup> Peru includes 2 percent of municipal tax.

Countries also have varying levels of VAT exemptions, zero-rating and reduced rates as provided in Table 7, which affect its progressivity. Mexico has the most extensive list with exemptions for medical and educational services, books and passenger transportation, and zero-rating for food, medicine, exports and agricultural and fishing services. In Costa Rica and Jamaica, exemptions are applied to medicine and education services. As for certain basic food items, Costa Rica and Jamaica give exemptions, while Argentina and Uruguay set lower rates. In addition, in Uruguay, meat cuts, milk, kerosene, and gasoline are zero-rated. Peru provides the least VAT exemptions by only zero-rating exports.

Table 7: VAT zero-rating and exemptions

	Argentina	Costa Rica	Jamaica	Mexico	Peru	Uruguay
Zero-rating	Exports		Certain agricultural produce, good supplied for airline's operations, Goods for approved research and development	Exports, all food (except yogurt and fruit juice), medicine, drinking water, wholesale trade of gold and silver, fishing and agricultural services	Exports	Milk, meat cuts, water, housing rent, kerosene, gasoline, books and culture and education.
Exemptions	Books, brochures, milk without additives	Basic food, agricultural inputs, medicine, books, professional services	Fruit and vegetables, basic food items, medicine, medical and educational services, school uniforms, solar water heaters, fertilizers and insecticide	Medical and education services, non-profit activities, books and magazines, residential and land buildings, passenger transportation, lottery		
Reduced rate	Bread with wheat flour not previously packaged, meat, fruits and vegetables	Electricity	Tourism and related services			Basis food, bread, medicine, medical services, tourism and public transportation

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

### **5.1.1 Indirect taxes - Vertical equity**

Recent studies have shown VAT to be regressive against income, but mildly regressive and at times, progressive in terms of consumption (Bird and Gendron 2007, Corbacho *et al.*, 2013). Our study is generally consistent with these findings. Table 8 presents the progressivity of indirect taxes when consumption is used as a welfare measure in the left columns and when incidence is measured as a percentage of income in right hand side columns.

When incidence is calculated as tax over consumption, VAT is progressive in Costa Rica, Jamaica and Mexico (in Table 8). In these countries, the size of VAT incidence (as a percentage of consumption) is smaller than others ranging from 5 to 8 percent as seen in Table 9. It is proportional in Uruguay and regressive in Argentina. Incidence is U-shaped in Peru where it is regressive between the two poorest quintiles, but is progressive between quintiles 3 and 5. In these countries, the VAT incidence is larger at 12 percent, 13 percent and 14 percent in Uruguay, Peru and Argentina, respectively.

Total indirect taxes (which is an average of VAT, excise tax and fuel taxes) are progressive in Costa Rica, Jamaica and Mexico, while it is proportional across quintiles in Argentina and Uruguay.<sup>17</sup> In Peru, it is U-shaped like the VAT. The progressivity of indirect taxes is driven by the progressivity of VAT and fuel tax in Jamaica, and by the progressivity of the VAT (or sales tax) and excise tax in Costa Rica. Excise tax is proportional in Peru, and is proportional for the lower three quintiles and progressive for the top two quintiles in Jamaica. In Argentina and Uruguay, excise tax is regressive. Fuel tax is progressive in all countries, except for Costa Rica where it is proportional.

When incidence is measured as a percentage of income, total indirect taxes, VAT, and excise tax are regressive in all countries, except for Jamaica, where it is proportional. Fuel taxes are proportional in Argentina, Jamaica and Uruguay and are regressive in Costa Rica and Peru. It is therefore clear that indirect taxes become more regressive when income is used as a welfare measure consistent with previous studies.

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<sup>17</sup> In Argentina, the analysis includes provincial turnover tax, which is an important source of revenue for subnational governments.

Table 8: Progressivity/regressivity of indirect taxes

	Using consumption as welfare measure				Using income as welfare measure			
	<i>Total indirect taxes</i>	<i>VAT</i>	<i>Excise tax</i>	<i>Fuel tax</i>	<i>Total indirect taxes</i>	<i>VAT</i>	<i>Excise tax</i>	<i>Fuel tax</i>
Progressive	Costa Rica, Jamaica, Mexico	Costa Rica, Jamaica, Mexico	Costa Rica	Argentina, Jamaica, Uruguay, Peru <sup>d</sup>				
Proportional	Argentina, Uruguay	Uruguay	Jamaica <sup>b</sup> , Mexico <sup>c</sup> , Peru	Costa Rica	Jamaica	Jamaica	Jamaica, Mexico <sup>c</sup>	Argentina, Jamaica, Uruguay
Regressive	Peru <sup>a</sup>	Argentina, Peru <sup>a</sup>	Argentina, Uruguay		Argentina, Costa Rica, Mexico, Peru, Uruguay	Argentina, Costa Rica, Mexico, Peru, Uruguay	Argentina, Costa Rica, Peru, Uruguay	Costa Rica, Peru

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>a</sup>In Peru, incidence of total indirect taxes and VAT is U-shaped. They are mildly progressive in quintiles 3, 4 and 5, and are regressive between quintiles 1 and 2.

<sup>b</sup>In Jamaica, excise taxes are proportional for the first three quintiles and are progressive at quintiles 4 and 5.

<sup>c</sup>In Mexico, the middle quintile bears the largest burden of excise tax.

<sup>d</sup>In Peru, fuel tax is regressive in the first 2 quintiles.

Table 9: Incidence of VAT as a percentage of consumption

<b>Country</b>	<b>VAT incidence</b>
Argentina	13.9
Costa Rica	5.6
Jamaica	6.1
Mexico	8.4
Peru	13.1
Uruguay	12.4

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo, Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

Table 10: Incidence of total indirect taxes by household type

	Using consumption as welfare measure				Using income as welfare measure			
Incidence falls most heavily on	Total indirect taxes	VAT	Excise tax	Fuel tax	Total indirect taxes	VAT	Excise tax	Fuel tax
<b>By household employment</b>								
i. Male breadwinner households	Argentina, Jamaica, Peru, Uruguay	Argentina, Jamaica, Uruguay	Argentina, Jamaica, Mexico, Peru, Uruguay	Costa Rica, Peru	Jamaica	Jamaica	Argentina, Jamaica, Peru, Uruguay	Peru
ii. Female breadwinner households		Peru			Peru, Uruguay	Peru		Jamaica
iii. Dual earner households	Argentina, Costa Rica, Uruguay	Costa Rica, Uruguay	Costa Rica, Uruguay	Argentina, Costa Rica, Jamaica, Uruguay				Argentina, Jamaica, Uruguay
iv. None-employed households	Mexico	Mexico			Argentina, Costa Rica, Mexico, Uruguay	Argentina, Costa Rica, Mexico, Uruguay	Costa Rica, Mexico	Costa Rica
	Using consumption as welfare measure				Using income as welfare measure			
Incidence falls most heavily on	Total taxes	VAT	Excise tax	Fuel tax	Total taxes	VAT	Excise tax	Fuel tax
<b>By sex composition</b>								
i. Male dominated households	Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay	Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay*	Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay	Argentina, Costa Rica, Peru	Jamaica	Jamaica	Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay	Argentina
ii. Female dominated households		Peru, Uruguay*			Argentina, Costa Rica, Uruguay	Argentina, Costa Rica, Uruguay		Costa Rica
iii. Equal number households	Uruguay	Mexico, Uruguay*		Jamaica, Uruguay	Mexico, Peru	Mexico, Peru		Jamaica, Peru, Uruguay

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

When a country is repeated twice in the table, it indicates that the incidence is the same between the two households types. For example, total indirect tax incidence is borne equally by male breadwinner households and dual earner households in Argentina, Peru and Uruguay.

\* For Uruguay, VAT incidence falls equally on male dominated, female dominated and equal number households.

### ***5.1.2 Indirect tax incidence by gender household types***

Table 10 presents a summary of which gender household type bears the largest burden of indirect taxes using consumption as a welfare measure in columns on the left and using income as a welfare measure in the columns on the right.

When consumption is used as a welfare measure, male type households or dual earner households bear the largest incidence of total indirect taxes. Tax burden falls on male breadwinner households in Jamaica and Peru, and it falls equally on male breadwinner and dual earner households in Argentina and Uruguay. Dual earner households bear the largest burden in Costa Rica. In Mexico, a quarter of none-employed households belong to the richest quintiles, and indirect tax burden falls most heavily on none-employed households due to the progressivity of these taxes. When disaggregated by sex composition of households, indirect tax burden falls on male dominated households for all countries and equal number households in Uruguay. These results are generally consistent with the findings of Grown and Valodia (2010).<sup>18</sup> These incidence patterns are similar for VAT and excise taxes, except in Peru where VAT incidence falls on female breadwinner households due to the regressivity of VAT. For fuel tax, incidence generally falls on dual earner households, except in Costa Rica and Peru where it falls on male breadwinner households.

When income is used as a welfare variable, total indirect taxes are regressive, and female breadwinner, female dominated and none-employed households generally face the highest indirect tax burden because these household types are, by and large, distributed in the lower income quintiles. None-employed households in Argentina, Costa Rica, Mexico, and Uruguay and female breadwinner households in Peru and Uruguay face the heaviest total indirect tax burden.<sup>19</sup> Disaggregating households by sex composition, incidence is borne by female dominated households in Argentina, Costa Rica, and Uruguay, and equal number households in Mexico and Peru. Only in Jamaica, do the male type households bear the heaviest total indirect tax incidence, and unlike in other countries, indirect taxes are proportional. VAT incidence exhibits a similar pattern as total indirect taxes, while that of excise tax incidence is different. Excise tax incidence falls on male breadwinner households in Argentina, Jamaica, Peru and Uruguay, and by sex composition, excise tax burden falls on male dominated households in all countries. This is because goods that are excise bearing, such as alcohol and tobacco, are disproportionately consumed by men.

The gendered pattern and regressivity of indirect taxes become more apparent when incidence analysis is disaggregated by quintiles and presence of children as presented in Table 11. When using consumption as a welfare variable, male breadwinner or dual earner households continue to bear the burden of total indirect taxes, but the question of which quintile bears the largest burden depends on the progressivity of the tax. Incidence of total indirect taxes falls on the

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<sup>18</sup> Grown and Valodia (2010) used consumption as a welfare measure but did not analyze income as a welfare measure due to the lack of income data in some of the countries in the study.

<sup>19</sup> In Uruguay, female breadwinner households and none-employed households bear the largest burden of indirect taxes.

richest male breadwinner households without children in Costa Rica, Mexico and Peru, with children in Jamaica and richest dual earners with children in Costa Rica.<sup>20</sup> These are the countries in which total indirect taxes are found to be progressive by consumption. It falls on the male breadwinner households without children in middle quintile in Argentina, while the poorest dual earner households without children bear the largest burden in Uruguay. In these two countries, indirect taxes are proportional. VAT incidence shows a similar pattern, except in two cases. The poorest none-employed households without children in Argentina and the richest female breadwinner without children in Peru bear the largest VAT incidence.

When income is used as a welfare variable, total indirect tax incidence becomes more regressive and it falls on the poorest female breadwinner households without children in Uruguay, and the poorest none-employed households without children in Argentina, Costa Rica and Peru. In Jamaica, dual earner households in the middle quintiles without children bear the largest burden.

Consistent with the findings in Grown and Valodia (2010), incidence is generally more heavily borne by households without children, than those with children. This could be because households with children are more likely to spend a higher proportion of their expenditure or income on necessities on goods that improve children's welfare such as food, children's clothing, medicine and education, and many of these goods are exempted, zero-rated or carry reduced rates in most countries (except for Peru). In contrast, households without children may spend a higher percentage of their expenditure or income on recreation or demerit goods such as alcohol and tobacco, which carry higher tax rates.

However, as we will see in the following section, further insights into the gender pattern of taxes can be found by disaggregating incidence by commodity.

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<sup>20</sup> For Costa Rica, the incidence falls on the richest male breadwinner without children and dual earner households with children equally.



Table 11: Which household employment type, by quintile and presence of children, bears the highest indirect tax incidence?  
Households without children bear incidence except those with an asterisk (\*), where those with children bear incidence

	Quintiles	Using consumption as welfare measure				Using income as welfare measure			
		Total taxes	VAT	Excise tax	Fuel tax	Total taxes	VAT	Excise tax	Fuel tax
i. Male breadwinner households	Quintile 4-5	Costa Rica, Jamaica*, Mexico, Peru	Costa Rica, Jamaica, Mexico	Peru	Costa Rica, Peru, Uruguay*		Jamaica		
	Quintile 2-3	Argentina		Jamaica, Mexico				Jamaica	
	Quintile 1								
ii. Female breadwinner households	Quintile 4-5		Peru						
	Quintile 2-3								Jamaica
	Quintile 1					Uruguay	Uruguay	Peru	Peru
iii. Dual earner households	Quintile 4-5	Costa Rica*	Costa Rica*	Costa Rica	Argentina, Jamaica*				
	Quintile 2-3					Jamaica			
	Quintile 1	Uruguay	Uruguay	Argentina, Uruguay					
iv. None-employed households	Quintile 4-5					Mexico*	Mexico*		Uruguay*
	Quintile 2-3							Mexico	
	Quintile 1		Argentina			Argentina, Costa Rica, Peru*	Argentina, Costa Rica, Peru*	Argentina, Costa Rica, Uruguay	Argentina, Costa Rica

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

### ***5.1.3 Incidence by commodity***

Following the methodology by Grown and Valodia (2010), the commodities were disaggregated into groups to examine the following issues (Grown and Komatsu 2010). First, since women are expected to prepare and produce food due to social norms, goods that are basic necessities, which are used in the poverty line calculations, are highlighted in the analysis. Second, we give attention to children's goods, such as children's clothing, due to women's socially ascribed roles in caring for children. Third, goods and services that reduce women's workload and time are particularly relevant in the gender analysis. These include basic processed foods (as opposed to basic unprocessed foods), meals out, water and energy services (such as utilities), fuel for household use, medical care and public and private transport. Last, goods that are considered leisure goods and demerit goods with negative externalities, such as alcohol, tobacco and fuel for transport, are important as these goods are often consumed by men.

Table 12 presents which household employment type by quintile bears the largest burden of tax by commodity types.<sup>21</sup> Tax incidence uses consumption as a welfare measure and the discussions focus on household employment type, unless otherwise indicated.<sup>22</sup>

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<sup>21</sup> Incidence of commodities by sex composition is shown in annex A5.

<sup>22</sup> The results using income as a welfare measure were carried out by country papers and are available upon request.

Table 12: Which household employment type, by quintile, bears the highest tax incidence of on selected commodities?  
(Using consumption as welfare measure)

<b>Incidence falls most heavily on</b>	<b>Per capita consumption quintile</b>	<i>Food subtotal</i>	<i>Food- Basic unprocessed<sup>a</sup></i>	<i>Food- Basic processed</i>	<i>Meals out</i>	<i>Children's clothing</i>	<i>Housing water electricity gas subtotal</i>	<i>Fuel for household use</i>	<i>Personal care subtotal</i>
i. Male breadwinner	Quintile 4-5				Costa Rica, Jamaica				
	Quintile 2-3								
	Quintile 1					Costa Rica			Jamaica, Mexico
ii. Female breadwinner	Quintile 4-5								Costa Rica
	Quintile 2-3	Peru				Argentina			
	Quintile 1	Jamaica, Uruguay	Uruguay	Peru		Uruguay		Mexico, Peru	
iii. Dual earner households	Quintile 4-5				Argentina, Uruguay				
	Quintile 2-3								
	Quintile 1					Jamaica, Mexico, Peru			
iv. None-employed	Quintile 4-5	Costa Rica <sup>b</sup>		Costa Rica <sup>b</sup>	Mexico, Peru		Jamaica, Mexico		Peru
	Quintile 2-3	Costa Rica <sup>b</sup> , Mexico	Costa Rica Peru	Argentina, Costa Rica <sup>b</sup> , Jamaica					
	Quintile 1	Argentina	Argentina	Jamaica, Uruguay			Argentina, Costa Rica, Peru, Uruguay	Jamaica, Uruguay	Argentina, Jamaica, Peru, Uruguay

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>a</sup>Mexico distinguishes between basic and non-basic food. Incidence of non-basic food falls on none-employed households in the middle quintile.

<sup>b</sup>In Costa Rica, incidence of food subtotal and food – basic processed falls on the third and fourth quintiles.

Table 12 (Continued): Which household employment type, by quintile, bears the highest tax incidence of on selected commodities?  
(Using consumption as welfare measure)

<b>Incidence falls most heavily on</b>	<b>Per capita consumption quintile</b>	<b>Domestic and household services</b>	<b>Medical services<sup>c</sup></b>	<b>Collective forms of transport</b>	<b>Private Transport</b>	<b>Fuel and lubricants</b>	<b>Recreation</b>	<b>Alcohol subtotal</b>	<b>Tobacco</b>
i. Male breadwinner	Quintile 4-5				Peru	Costa Rica, Mexico, Peru, Uruguay	Jamaica, Peru	Costa Rica, Mexico, Peru, Uruguay	
	Quintile 2-3	Jamaica						Jamaica	Mexico
	Quintile 1								Argentina, Peru, Uruguay
ii. Female breadwinner	Quintile 4-5		Peru	Jamaica					Jamaica
	Quintile 2-3			Costa Rica, Uruguay					
	Quintile 1			Argentina		Jamaica <sup>a</sup>			
iii. Dual earner households	Quintile 4-5				Argentina, Costa Rica, Peru, Uruguay	Argentina	Argentina, Costa Rica, Mexico, Uruguay		
	Quintile 2-3							Argentina	
	Quintile 1			Costa Rica, Mexico, Peru					Argentina, Costa Rica
iv. None-employed	Quintile 4-5	Argentina, Mexico, Peru, Uruguay	Argentina, Mexico, Uruguay		Jamaica, Mexico				
	Quintile 2-3								
	Quintile 1								

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

<sup>a</sup>In Jamaica, fuel for transport incidence is small.

<sup>c</sup>Incidence is small in Costa Rica and Jamaica, where medical services are exempted.

### *Tax on Food Expenditure*

The analysis reveals that tax on food expenditure is regressive even when consumption is used as a welfare measure, and they generally fall on the poorer female breadwinner or none-employed households. In Jamaica, Peru and Uruguay, poorer female breadwinner households bear incidence of food, while it is borne by the poorest none-employed households in Argentina, half of whom (44 percent) are female dominated. None-employed households in the middle quintile disproportionately bear food tax burden in Costa Rica and Mexico. The results change little by disaggregating basic food into processed and unprocessed – incidence tends to fall on the poorer none-employed or female breadwinner households.

Since the size of food tax incidence varies by country, and by the household type and quintile, Table 13 presents the incidence of food tax (as a percentage of consumption) that the group with the largest burden faces. Incidence is the smallest in Mexico (less than 1 percent) where there is a wide range of zero-rating on basic and non-basic food. This is followed by Costa Rica and Jamaica at around 1 percent; basic food is exempted in both countries. The largest burden is found in Argentina where the poorest none-employed households face a tax incidence of 10.9 percent. Similarly, incidence in Peru and Uruguay is large for the poorest female breadwinner households at 6 percent and 4.1 percent, respectively.

Table 13: Incidence of tax on food (as a percentage of per capita consumption) borne by the group with the largest tax burden

Country	Argentina	Costa Rica	Jamaica	Mexico	Peru	Uruguay
<b>Group with the largest tax burden</b>	Poorest none-employed	3 <sup>rd</sup> quintile none-employed	Poorest female breadwinner	3 <sup>rd</sup> quintile none-employed	2 <sup>nd</sup> quintile female breadwinner	Poorest female breadwinner
<b>Incidence of food tax</b>	10.9	1.2	1.0	0.4	6.0	4.1

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

### *Tax on expenditure on meals out*

Richer households are more likely to take meals out and the richest dual earners bear the highest incidence of tax on expenditure on meals out in Argentina and Uruguay. Since women and men work in these households, they are more likely to outsource cooking as it saves time. Richer male breadwinner households in Costa Rica and Jamaica, and richer none-employed households in Mexico and Peru bear the incidence of meals out. By sex composition, the richest male dominated households bear incidence of meals out in all countries.

### *Tax on children’s clothing expenditure*

Tax on children’s clothing expenditure exhibits a regressive pattern, although the incidence is generally small, ranging from 0.1 percent in Costa Rica to 1 percent of consumption in Argentina. It is disproportionately borne by poorer female breadwinner households in Argentina and Uruguay and the poorest dual earner households in Jamaica, Mexico and Peru. It falls on the poorest male breadwinner households in Costa Rica. When women are engaged in paid work and purchasing children’s clothing saves women’s time.

### *Tax on expenditure on housing, water, gas, electricity, and fuel for household use*

Access to water, gas and electricity have important implications for women’s workload and time because women are socially assigned the role of providing water and sources of energy in the household. Female type households generally bear the largest tax incidence on housing and utilities for water, gas and electricity, although there are differences in the progressivity of these taxes. They are regressive in Argentina, Costa Rica, Peru and Uruguay, and the poorest female dominated households and poorest none-employed households (majority of whom are female dominated) disproportionately bear the burden. The size of the incidence faced by the poorest none-employed households varies from 3.7 percent of consumption in Uruguay to 1.5 percent in Costa Rica (Table 14).

Table 14: Incidence of tax on housing and utilities expenditure (as a percentage of consumption) borne by the group with the largest tax burden

<b>Country</b>	<b>Argentina</b>	<b>Costa Rica</b>	<b>Jamaica</b>	<b>Mexico</b>	<b>Peru</b>	<b>Uruguay</b>
<b>Group with the largest tax burden</b>	Poorest none-employed	Poorest none-employed	4th quintile none-employed	4th quintile none-employed	Poorest none-employed	Poorest none-employed
<b>Tax on housing and utilities</b>	2.9	1.5	1.4	1.6	2.3	3.7

Source: Argentina: Rossignolo (2015), Costa Rica: Trejos, Mata and Oviedo (2015), Jamaica: Christie and Thakur (2015), Mexico: Cota Gonzalez and Rossignolo (2015), Peru: Leon and Calderon (2015), and Uruguay: Bucheli and Olivieri (2015).

In Jamaica and Mexico, incidence of housing and utilities falls on the richer none-employed and female dominated households, and the poorer female type households seem to opt for a cheaper source of energy, namely fuel for household use. Incidence of tax on fuel for household use falls on the poorer female dominated households in both countries. These results suggest that in Argentina, Costa Rica and Uruguay, poor female type households pay tax on housing and utilities (water, gas, electricity) despite their high costs as they save more time and reduce workload, while in Jamaica and Mexico, they are only affordable by richer households. Instead, poor female type households use cheaper sources of fuel for household use.

### ***Tax on personal care items***

Like food, personal care items are basic necessities and incidence is borne generally by female type households. Incidence of tax on personal care goods is borne by the poorest non-employed and female dominated households in Argentina, Peru and Uruguay, and on the richest female breadwinner households in Costa Rica. It falls on the poorest male breadwinner households in Jamaica and Mexico.

### ***Tax on domestic and household services and tax on medical services***

Domestic and household services serve as important substitutes for women's unpaid work. Incidence of tax for these services falls on the richest non-employed households in Argentina, Mexico, Peru and Uruguay, while it falls on the middle quintile male breadwinner households in Jamaica. Incidence on medical expenses falls on the richest non-employed households in Argentina, Mexico and Uruguay and the richest female breadwinner households in Peru. By sex composition, incidence is borne by the richest female dominated households in Argentina, Peru and Uruguay and the richest equal number households in Mexico.<sup>23</sup>

### ***Tax on transportation***

Incidence of transportation exhibits a gendered pattern. Incidence of collective forms of transportation is borne by the female breadwinner households with varying degrees of regressivity - on the fourth quintile in Jamaica, the middle quintiles in Costa Rica and Uruguay, and the poorest in Argentina. It is borne by the poorest dual earner households in Costa Rica, Mexico and Peru.<sup>24</sup> When disaggregated by sex composition, the gender pattern becomes more apparent. Female dominated households in the poorest to middle quintiles bear the heaviest incidence in all countries. In contrast, incidence of tax on private transport is borne by the richest dual earner households in Argentina, Costa Rica, Peru and Uruguay, the richest male breadwinner households in Peru, and the richest non-employed in Jamaica and Mexico. The burden of fuel for transport falls on richest male breadwinner or dual earner households. An exception is Jamaica, where incidence of fuel for transport falls on the poorest female breadwinner households due to the cascading effects of fuel in public transport. Access to private transportation saves time, and for women in dual earner households, this is particularly important as they have to engage in paid work and to take care of domestic chores. Poorer women in female type households have no choice but to use public transportation.

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<sup>23</sup>In Costa Rica and Jamaica, incidence is negligible due to the exemptions on medicine and medical services.

<sup>24</sup> In Costa Rica, incidence is equally borne by the poorest dual earner and female breadwinner households in the 2<sup>nd</sup> quintile.

### ***Tax on alcohol and tobacco***

As expected, for tax on alcohol and tobacco, male breadwinner households bear the highest incidence with varying levels of regressivity - the richest in Costa Rica, Mexico, Peru and Uruguay, the middle quintile in Jamaica, and the poorest in Peru. It is borne by the middle dual earner households in Argentina. Tobacco is generally more regressive, so tax burden on tobacco falls on the poorest male breadwinner households in Argentina, Peru and Uruguay and the poorest dual earner households in Argentina and Costa Rica. Male breadwinner households in the middle quintile bear the incidence in Mexico. Jamaica is an exception, where the tobacco incidence falls on the richest female breadwinner households. Tax burden of recreation falls mostly on the richest dual earner households, except in Jamaica and Peru, where it is borne by the richest male breadwinner households.

These results suggest that implicit gender biases in indirect taxes may be present in goods that reinforce existing gender inequalities, particularly for those that meet basic needs, reduce women's workloads and save women's time spent in unpaid work. Poor female type households are generally found to bear a larger incidence of food, housing and utilities, personal care items and public transportation. Rich female type households or none-employed households generally bear a larger burden of medical services and domestic and household services. Incidence of private transportation, fuel for transportation and meals out generally fall on rich dual earner and male breadwinner households. Tax on alcohol and tobacco is borne by male type households with varying degrees of regressivity.



## 6. Policy Simulation

The country papers estimate the impact of changes in the direct and indirect tax systems on gender equity and vertical equity. Where possible, when changes proposed result in loss of revenue, other changes are proposed to compensate for the revenue loss. Exceptions are found in cases where the simulations are conducted for actual reforms that were recently implemented, or are under discussion in the country.

It should be noted that these simulations are a theoretical exercise. Any policy recommendations for tax reform would have to be accompanied with efforts to improve administrative capacity and logistical arrangements to collect taxes. Further, because it is a partial equilibrium framework, it does not take into account of behavioral response to tax changes.

### 6.1 Direct taxes

In direct taxes, the consequences of broadening the PIT tax base are examined in Costa Rica, while those of reducing the tax base are discussed in Argentina. The Peru paper reviews recent changes in direct taxes, which include changing the PIT tax brackets and increasing the tax rate on dividend income. The Uruguay paper assesses the impact of increasing the size of tax credits for children.

The Costa Rica paper simulates the change from a scheduler to a global income tax system, while maintaining individual filing (Trejos, Mata and Oviedo 2015). In the simulation, income from labor, profits from business and capital income are taxed under one global system, instead of each facing its own rules and rates. The authors find that it reduces the PIT exemption threshold and increases the tax rates especially at higher income brackets. The simulation increases the population in the tax net because of the lowering of the minimum exemption threshold but the threshold is sufficiently high enough so that the poorest households do not pay PIT. The second and third quintiles, which were previously exempt from PIT, now have to pay tax. The tax burden rises for quintiles between two and five and the percentage increase in tax burden is higher along the upper income quintiles. As a result, it increases the degree of PIT progressivity significantly. There was no change in the household type that bore the highest burden with the dual earner households continuing to bear the largest burden of direct taxes. Female breadwinner households experience the largest percentage increase in PIT burden even though they face the least incidence after the simulation (except for none-employed households) at 3.6 percent of gross income.

The Argentina paper simulates the effects of the direct tax reforms the government carried out in 2013 (Rossignolo 2015). These include increasing the deductions for PIT, increasing the tax brackets for the *Monotributo*, increasing payments for social security contributions for independent workers and raising the maximum income threshold for

social security contributions for formal workers. These changes reduce the overall PIT burden (about 10-15 percent drop in tax burden for the richest quintile depending on household type) and reduce the size of the population in the PIT tax net to be even smaller than the base scenario. PIT incidence is consequently borne almost entirely by the top two quintiles. Female breadwinner households experience the largest overall drop in tax burden by more than 9 percent (except for the none-employed households whose tax burdens are very small at base scenario). Male breadwinner households with children in the richest quintile continue to bear the largest burden, and they face the least drop in PIT burden due to they earn the most. Because of the changes in social security contributions, the fourth quintile sees a rise in tax burden, while the richest benefit from a drop in incidence. The overall system of direct taxes becomes less progressive.

The Peru paper simulates the effects of recently implemented direct tax reforms. The first is on labor income, which is to increase the number of the tax brackets from 3 brackets to 5 brackets, and to reduce the level of income needed to reach the maximum tax bracket. The second is to increase the marginal tax rate for dividend income from 4.1 percent to 6.8 percent. The authors find that these changes have negligible effects on income distribution and gender equity.

The Uruguay paper increases the amount of tax credits for each child in PIT, which are available only for labor income earners and on a household basis (Bucheli and Olivieri 2015). Although the tax credits can be claimed 100 percent by one spouse, or 50 percent for each spouse, the paper assumes that only the heads of household claim the credits. The simulation reveals that the tax burden falls across quintiles, benefitting the middle quintiles the most. This is because the poorest quintiles tend to fall below the PIT tax net while for richer quintiles, labor income is not as important (Bucheli and Olivieri 2015). The overall difference in tax burden is statistically significant, but the magnitude of the decrease is small at only 0.05 percent. By household employment status, male breadwinner and dual earner households are more likely to benefit from this change than female breadwinner households since they earn a higher percentage of tax bearing sources of income.

## **6.2 Indirect taxes**

In the simulation of indirect taxes, four countries (Costa Rica, Jamaica, Mexico and Uruguay) examine the impact of broadening the tax base through removing exemption or zero-rating of VAT, while Argentina cuts rates and introduces new exemptions in order to reduce the regressivity of the system. Even though the main principles of the simulations are similar between the first four countries since it increases the VAT tax base, the effects on both vertical equity and gender equity are quite different as we will see below.

The Jamaica paper simulates the removal of exemptions on currently VAT exempted goods (such as basic food and medicine) by applying the standard VAT rate (of 16.5 percent) in the first scenario, and by reducing overall VAT rate by two percent in the second scenario (Christie and Thakur 2015). These simulations are chosen because these reforms are currently under discussion in Jamaica. The overall progressivity of VAT disappears and it becomes proportional to mildly regressive with the biggest increase in incidence felt by the poor. Female type households, whether by employment type or sex composition, across all quintiles experience the largest increase.

The Costa Rica paper also removes the sales tax exemptions (except for health and education), but maintains the same level of tax rate of 13 percent (Trejos, Mata and Oviedo 2015). As was seen in Jamaica, the simulation shows that the progressivity of sales tax (by consumption) disappears and it becomes proportional. The poorest quintile and the none-employed households experience the largest tax burden increase. By sex composition, female dominated households are subject to the biggest percentage increase in tax burden. However, male breadwinner households without children and dual earner households with children in the richest quintile continue to bear the largest tax burden. Similarly, the heaviest burden remains to be borne by male dominated households without children.

The Mexico paper removes the zero-rating on food and exemptions on medicine and applies the standard VAT rate of 16 percent in three stages: 1) in the first stage, on non-basic food items such as pizzas, carnitas, T-bone steaks, shrimps, salmon and capers; 2) in the second stage, on non-basic food and medicine; and 3) in the third stage, on non-basic food, medicine and basic food (Cota Gonzalez and Rossignolo, 2015). The result of the simulation in each stage causes the VAT to become more regressive especially in the third scenario when the zero-rating is removed from basic food. The first quintile experiences the largest hike in VAT burden. However, the difference in the VAT burden between female and male breadwinner households remains almost the same in every stage of the simulation.

Similar to Jamaica, the Uruguay paper removes VAT zero-rating and reduces the standard VAT rate by about 9 percent (from 23 percent to 14.3 percent) and applies it to all products and services (Bucheli and Olivieri 2015). However, Uruguay's results stand in contrast to previous three countries. The simulation shows that tax burden for the richest quintile increases while it falls for the lower quintiles, benefitting the middle quintiles the most. The rich experience a tax burden increase because of the removal of zero-rating on education and gasoline and the rate hike on medicine and medical services. By household employment status, tax burden increases for none-employed households, but it falls for male breadwinner and dual earner households, and it remains the same for female breadwinner households. For none-employed households, the middle quintiles experience an increase in tax burden due to their heavy consumption of medical services, which are currently set at a reduced rate. The Uruguay results reveal that zero-rating and

reduced rates currently benefits the rich significantly more than the poor. This is likely because while the poor spend a higher percentage of VAT on income, the rich consume more of all goods – a phenomenon Corbacho, Cibils and Lora (2013; 169) term “errors in inclusion”. It is hard for a tax to distinguish between what the poor consume from that of the rich.

Argentina’s simulation is different from the above four countries in that it attempts to reduce the regressivity of the system by cutting rates and introducing new exemptions, while at the same time maintaining revenue neutrality (Rossignolo 2015). It does so by cutting tax rates for food items that constituted a high proportion of the poor’s consumption bundle, and introduces exemptions for a selected food basket that are considered a minimum diet, public transportation and children’s clothing due to the regressivity of these taxes. In order to compensate for the loss in revenue, it increases excise taxes on demerit goods and luxury goods such as household appliances, luxury items (cars and boats), electronic goods, tobacco and alcohol. The simulation causes a more progressive indirect tax system - from a regressive to a proportional system using consumption as welfare measure. While it reduces the tax incidence for female type households, it increases the burden for other household types and male breadwinner households continue to bear the highest burden.

## **7. Conclusions and Recommendations**

In this section, we discuss the tax policy recommendations that have been made by other authors against the findings of this study from a gender perspective. The policy recommendations are restricted to issues that were specifically analyzed in the proceeding sections and are therefore not an exhaustive review of tax policies.

### **7.1 Direct taxes**

The size of the population who pay PIT is small in Latin America due to the high minimum exempt income threshold, existence of deductions and exemptions, and the prevalence of tax evasion (Corbacho *et al.*, 2013, ECLAC 2013, Lustig *et al.*, 2014). The distributive power of the PIT is severely hampered because PIT is paid by a small number of taxpayers who pay a small proportion of their income (Corbacho *et al.*, 2013). Capital income (including dividends) is often excluded from the taxable income creating a bias against labor, and reducing the tax base (Corbacho *et al.*, 2013, ECLAC 2013).

#### **1. Broadening the PIT base – limiting deductions and exemptions for capital income**

Corbacho *et al.*, (2013) recommend the broadening of the tax base by limiting deductions for expenses that increase with income (such as deductions for interest on mortgage payments) and assigning currently exempt incomes (such as interest payments, dividends and capital gains) as taxable income.

Implicit gender biases may be present in the treatment of deductions, tax credits and exemptions for professional expenses, mortgage interest payments, real estate taxes, interest payments and dividends due to the gender differences in ownership of physical and financial assets, employment patterns and social arrangements. These tend to benefit higher income earners and wealthier taxpayers who are more likely to be men. The recommendations to broaden the PIT base are likely to reduce implicit gender biases and increase the PIT progressivity, and are therefore consistent with gender equity objectives.

## **2. Reducing the PIT minimum exempt income threshold**

Given the high levels of PIT exempt income threshold in some countries, Corbacho *et al.*, (2013) recommend that the threshold be reduced to a level below the per capita income. For example, Costa Rica's personal exemption threshold for PIT is almost twice the level of GDP (Corbacho *et al.*, 2013). Hence, the Costa Rica paper simulated the effects of reducing the personal threshold income from 1.6 times the GDP per capita in 2013 to 0.6 times GDP per capita, and moving from a scheduler to a global system where income from labor, capital and profits would be taxed under one schedule of rates. Under the simulation, the richest quintile experienced the largest tax burden increase, but the middle quintile households, who were previously exempt, would have to pay PIT due to the lowering of the threshold. Even though female breadwinner households experienced the largest percentage increase in PIT burden, the average tax burden of PIT was the lowest at 3.6 percent of gross income.

In general, given that women workers tend to predominate in lower to middle quintiles, the reduction in the threshold would likely cause more women to disproportionately fall in the tax net. The Jamaica case shows that the exemption threshold could also affect gender equality at the higher end of the income distribution. The income threshold was considered to be the main reason for female breadwinner households in the higher quintiles to disproportionately bear the PIT burden because they consisted of larger households with more dependents than male breadwinner households. The Jamaica example therefore illustrates that it is not sufficient to analyze tax reforms from a vertical equity point of view because social and cultural factors that drive household composition can also affect gender equity at the higher end of the income distribution. Therefore, any change in exemption threshold should be undertaken by assessing its potential impact on both vertical equity and gender equity.

## **3. Introducing exemptions/tax credits for children**

Due to the gender biases arising from direct taxes in Jamaica, Christie and Thakur (2015) recommend an introduction of exemptions for children. The exemptions are expected to reduce the disproportionate tax burden faced by female breadwinners in richer households because they tend to live in households with more dependent children than male breadwinner households. Further analysis is needed to assess how the exemptions for children would affect vertical equity. For example, in Uruguay, the increase in tax credits for children (available only for labor income) in the simulation benefitted: 1) male breadwinner and dual earners; and 2) the middle-income quintiles the most because labor income was more important for male and dual earners than female breadwinners, and for middle-income quintiles than the poorest and richest quintiles. Therefore, exemptions for children may produce unexpected results in terms of gender and vertical equity depending on the composition and income distribution of the households.

## 7.2 Indirect taxes

The advantages of VAT include revenue generation, ease of administration and compliance, and efficiency because it does not have a cascading effect on taxes, neutrality with respect to savings and investments, and non-discriminatory on imports versus domestic products (Corbacho *et al.*, 2013, Ebrillet *et al.*, 2001, IMF 2010). In order for VAT to achieve these goals, the standard recommendations for VAT are to broaden the tax base by applying a uniform rate, limiting the number of exemptions or reduced rates on goods and services and confining the use of zero-rating to exports (Corbacho *et al.*, 2013, Ebrillet *et al.*, 2001 and IMF 2010).<sup>25</sup> Although the IMF (2011) does not rule out the possibility of exemptions for certain items, they argue that there is generally a more widespread use of exemptions than are advisable (Ebrillet *et al.*, 2001). While VAT could be regressive, or at times mildly progressive with respect to consumption, the distributional impacts of exemptions or reduced rates are limited because while the poor spend proportionately more on exempted goods, the rich spend an absolutely more (Corbacho *et al.*, 2013, Ebrillet *et al.*, 2001, IMF 2010). This was found to be the case in the simulation in Uruguay, where the rich experienced the biggest rise in tax burdens from the removal of exemptions or raising rates on education, health and gasoline. Hence, the rich at present benefit from exemptions and zero-rating of VAT much more than the poor in Uruguay. To attain the equity objectives, the IMF and others propose that the VAT be used to raise revenue to implement expenditure programs targeting the poor (Corbacho *et al.*, 2013, Ebrillet *et al.*, 2001, IMF 2010).

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<sup>25</sup> VAT zero-rating refers to cases where sales are not taxed, but taxes on inputs are refunded, whereas in exemptions, sales are not taxed and taxes on inputs cannot be refunded (IMF 2010). IMF recommends that zero-rating only be applied for exports because of the difficulty in administering refunds (IMF 2010).

In a study on benefit-tax incidence, Lustig, Pessino and Scott (2014) examine the effects of direct and indirect taxes, cash and in-kind transfers on inequality and poverty in six Latin America countries, four of which coincide with ours (namely Argentina<sup>26</sup>, Mexico, Peru and Uruguay). They find that while direct transfers in Argentina and Uruguay are found to significantly reduce inequality and poverty, redistributive effects of transfers are smaller in Mexico and Peru owing partly to the smaller share of social spending to GDP. Bolivia's direct transfers' share of GDP is large (which is five times that of Peru's) but their inequality and poverty reduction effects are limited because they are weakly targeted to the poor. In light of these findings, Lustig *et al.*, (2014) propose that Mexico and Peru need to raise more revenue to further reduce poverty, while for Bolivia, it is recommended to have better targeting of transfers.

Raising enough revenue and ensuring that the spending instruments actually target the poor are important in increasing the progressivity of the system. As discussed above, there is significant room to improve revenue collection especially on direct taxes. However, our study found that there were implicit gender biases in indirect taxes for goods that meet basic needs and reduce women's workload, most notably for food and housing and utilities which carry a sizable tax burden in some countries. Argentina's simulation illustrated that it was possible to reduce the regressivity of VAT in a revenue neutral way by reducing taxes on regressive items while increasing taxes on luxury and demerit goods, and ensuring that implicit gender biases were decreased. Therefore, it is recommended that countries explore ways to raise revenue while taking into account of the distributive effects on vertical and gender equity.

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<sup>26</sup> Although the mentioned study for Argentina only considers the benefit side.

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**Annex**  
**Direct Taxes:**

**A1. Schedular versus Global Tax systems**

<b>Tax systems</b>	<b>Countries</b>
Schedular	Costa Rica, Peru, Uruguay, Jamaica,
Global	Argentina (with schedular elements), Mexico

**A2. Filing system**

<b>Filing system</b>	<b>Countries</b>
Individual filing	Argentina, Jamaica, Mexico, Costa Rica
Joint filing	Uruguay <sup>1</sup>

<sup>1</sup>Very few couples choose to file jointly.

**A3. Key deductions, tax credits and exemptions in PIT – exclude deductions on spouses and children**

<b>Countries</b>	<b>Deductions/tax credits</b>	<b>Exemptions</b>
Argentina	Deductions only available to self-employed (high-income) workers and workers in formal employment. Deductions for interest on debt, premiums for life insurance, gifts to certain institutions.	Minimum threshold annual income of less than AR\$15,000 (for self-employed and wage earners) Incomes from labor-related awards and seniority compensation, but excludes damages to women dismissed for pregnancy Interest payments or dividends from financial institutions or governments.
Costa Rica	None	Minimum threshold annual income of less than 714,000 colones.
Jamaica	Deductions for compulsory contributions to National Insurance Scheme, National Housing Trust, Human Employment Resource Training fund and pension schemes. Business expenses.	Minimum exemption threshold annual income of J\$1,000,272 (since July 1, 2016). Threshold increases by J\$80,000 for persons over 65 years old and by J\$80,000 for pensioners. Employment related meals, uniforms, housing, motor vehicles, telephone use, credit cards and stock options for employees.
Mexico	Deductions for professional expenses, goods and raw materials for businesses. Medical and funeral costs, charitable donations, mortgage interest payments. Medical insurance payments, contribution to retirement fund, school transportation (if compulsory).	Overtime pay, social security payments, insurance indemnities or compensation, work-related travel expenses. Pensions, educational scholarship, severance payments, inheritance, income from agricultural activities, forestry and fisheries (up to 660,000 pesos pa.), royalties. Work benefits (day care, sports, etc.) if provided by employer.
Peru		Interest payment or dividends from

		financial institutions or governments. Pension income
Uruguay	Tax credits for mortgage payments, social security contributions, real estate taxes, rent and bad debts.	Minimum exemption thresholds for annual labor income of 84BPC for individual filing, 96BPC for couples earning less than 12 months of minimum wage and 168BPC for couples earning more than 12 months minimum wage. Minimum exemption thresholds for annual pension income of 96BPC.

#### A4. Deductions/tax credit for spouses and dependent children

<b>Countries</b>	<b>Spouse</b>	<b>Dependent children</b>
Argentina	Deductions for financially dependent spouse provided they do not earn individual income over a certain threshold. Maximum deductions: AR \$14,400 per year	Family deductions for dependent children or parents, provided they do not have individual income of over AR\$9,000. Maximum deductions: AR\$ 7,200 per year per child
Costa Rica	Tax credit of 24,000 colones for spouse	Tax credit of 16,080 colones per child assigned to only one parent
Jamaica	None	None
Mexico	None	None
Peru	None	None
Uruguay	None	Tax credit of 13BPC per child (26 BPC for disabled child) assigned 100% to one parent and 0% to other parent, or 50% to both parents.

Table A5: Which household sex composition type, by quintile, bears the highest tax incidence on selected commodities?  
(Using consumption as welfare measure)

<b>Incidence falls most heavily on</b>	<b>Quintile</b>	<b>Food subtotal</b>	<b>Food- Basic unprocessed*</b>	<b>Food- Basic processed</b>	<b>Meals out</b>	<b>Children's clothing</b>	<b>Housing water electricity gas subtotal</b>	<b>Fuel for household use</b>	<b>Personal care subtotal</b>
i. Male dominated	Quintile 4-5				Argentina, Costa Rica, Jamaica, Mexico, Peru, Uruguay				
	Quintile 2-3							Argentina	
	Quintile 1	Argentina, Jamaica, Uruguay	Argentina, Uruguay	Argentina, Jamaica, Uruguay		Mexico		Uruguay	Jamaica
ii. Female dominated	Quintile 4-5			Costa Rica			Jamaica, Mexico, Peru		Costa Rica, Peru
	Quintile 2-3		Peru						
	Quintile 1					Costa Rica	Argentina, Costa Rica, Uruguay	Jamaica, Mexico	Argentina, Mexico, Uruguay
iii. Equal numbers	Quintile 4-5	Mexico		Costa Rica		Jamaica			
	Quintile 2-3	Costa Rica, Peru	Costa Rica, Peru			Argentina			
	Quintile 1		Argentina	Peru		Peru, Uruguay	Argentina	Peru	

Table A5 (continued): Which household sex composition type, by quintile, bears the highest tax incidence on selected commodities?  
(Using consumption as welfare measure)

<b>Incidence falls most heavily on</b>	<b>Quintile</b>	<b>Domestic and household services</b>	<b>Medical expenses*</b>	<b>Collective forms of transport</b>	<b>Private Transport</b>	<b>Fuel and lubricants</b>	<b>Recreation</b>	<b>Alcohol subtotal</b>	<b>Tobacco</b>
i. Male dominated	Quintile 4-5	Jamaica			Costa Rica, Jamaica, Peru	Argentina, Costa Rica, Mexico, Peru	Jamaica, Peru	Costa Rica, Mexico, Peru, Uruguay	Jamaica
	Quintile 2-3							Jamaica	Argentina, Costa Rica, Mexico, Uruguay
	Quintile 1							Argentina	Peru
ii. Female dominated	Quintile 4-5	Mexico, Uruguay	Argentina, Peru, Uruguay		Mexico		Argentina		
	Quintile 2-3			Costa Rica, Uruguay					
	Quintile 1			Argentina, Jamaica, Mexico, Peru					
iii. Equal numbers	Quintile 4-5	Argentina, Peru	Mexico		Argentina, Peru, Uruguay	Jamaica, Uruguay	Costa Rica, Mexico, Uruguay		
	Quintile 2-3	Jamaica							
	Quintile 1								

## **Annex A6**

### Classification of consumption expenditure into categories

Consumption expenditures are classified by subgroups. For the subgroups, the COICOP classification has been regrouped into 34 items. Every country classification of consumption expenditures, available in the survey, should be reclassified into these items. These items have been designed in order to express gender characteristics in consumption behavior.

The items are:

#### **Food:**

- Basic unprocessed: Staple grains/cereals (rice, wheat), milk, eggs, key vegetables (best to use those goods used to calculate your country's poverty line)
- Basic processed foods, e.g., cooking oil
- Sugar/confectionary

**Meals out** (if available separately, any non-alcoholic and alcoholic drinks part of meals-out to be included in the corresponding drinks category) (this category would include all meals-out, making no distinction between meals eaten during the break of work and those eaten in other occasions)

#### **Non-alcoholic beverages**

#### **Alcoholic beverages – Beer**

#### **Alcoholic beverages – Spirits**

#### **Alcoholic beverages – Wine**

#### **Tobacco**

#### **Clothing and Footwear (for adults and for children, separately)**

#### **Housing, Water, Electricity, Gas** (this would also include house insurance)

#### **Other Fuels (for household use)**

#### **Furnishings, Household Equipment and Routine Maintenance of the House**

#### **Domestic Services and Household Services**

#### **Health**

#### **Transport: Collective forms of transport**

#### **Transport: flights**

**Private transport**, e.g., cars (this would also include all transport costs spent while on holiday; it will also include vehicle insurance)

#### **School Transport**

#### **Fuels and Lubricants (for transport use)**

#### **Communication**

#### **Recreation and Culture**

#### **Education**

**Personal Care: Necessities for personal hygiene:** in general (soap, sanitary towels, toothpaste)

**Personal Care: Baby products (nappies)**

**Personal Care: Other**

#### **Gambling**

**Miscellaneous Goods and Services** (would also include 1) legal and other professional fees, 2) funeral/wedding expenses, 3) tribal levies, 4) guns and 5) membership fees to trade unions, staff/professional associations, art, health, sport and social clubs/associations 6) pocket money and other transfers within the household as long as the money does not get double counted)