THE INCIDENCE OF TAXES AND SPENDING IN SRI LANKA

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COMMITMENT TO EQUITY

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1. Introduction

During a surge of economic growth between 2002 and 2012—as Sri Lanka's gross domestic product (GDP) increased by an average of 6.2 percent per year—poverty in the country also declined dramatically. Between 2002 and 2012/13, the headcount poverty rate fell from 22.7 percent to 6.7 percent using national poverty lines (World Bank 2015).

Despite these gains, important development challenges remain, and the country has limited fiscal resources to address them. Although public spending, at 20–25 percent of GDP, is similar to other middle-income countries, this level of spending may not be fiscally sustainable because revenues have been systematically lower than spending and were decreasing. Sustained fiscal deficits of 7–8 percent annually during 2002–12 were driven by increases in public spending that have outpaced revenue growth, leading to significant accumulation of public debt. The government became committed to fiscal consolidation and managed to reduce public spending from 25 percent of GDP in 2009 to 19 percent by 2015, while reducing the budget deficit from 9.9 percent of GDP to 6.5 percent over the same period (World Bank 2015). Given the limited fiscal space, efficiency in spending is critical.

In this context, it is important to evaluate the effectiveness and efficiency of fiscal policy in addressing Sri Lanka's development challenges and accelerating poverty reduction. Specifically, we seek to answer three questions:

- How much redistribution and poverty reduction is accomplished through taxes, social transfers, and subsidies?

- How progressive are revenue collection and government spending?

- What individual impacts do taxes and transfer policies have on inequality and poverty, given the fiscal resources used?

The main contribution of this analysis is to provide systematic empirical evidence on the progressivity of the fiscal interventions. Although similar studies exist for other countries in the world, this study is the first comprehensive examination of Sri Lanka's fiscal instruments and their ability to redistribute income and reduce poverty. By using a harmonized methodology, this approach allows for comparative analytics with other countries in the region and the world.[1]

The analysis finds that, overall, taxes and social spending were redistributive and poverty-reducing in Sri Lanka in 2009/10, the latest year for which a household survey was available at the time of this analysis. In particular, we find that direct taxes provide a very small contribution to redistributive

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[1] This analysis applies the framework developed by the Commitment to Equity Institute (Lustig and Higgins 2013a). For more information, see the CEQ Institute website: http://www.commitmentoequity.org/.

efforts, while indirect taxes are regressive and unequalizing. On the spending side, direct transfers are absolutely progressive, making their marginal contribution both equalizing and poverty-reducing. However, given the country's relatively low revenue and limited fiscal space, overall social spending was small, leading to limited impacts. Although indirect subsidies are equalizing, they are not an efficient redistributive mechanism, because they benefit higher-income groups more than the bottom of the distribution. Among the in-kind transfers, education spending has the largest redistributive impact, in line with other developing-country studies. This is partly due to high enrollment rates in primary and secondary education.

The rest of the paper is organized as follows: The next section provides an overview of tax and social spending systems that were implemented by the government of Sri Lanka as of 2009. The paper then describes the data and assumptions used for each fiscal intervention in the analysis. This is followed by presentation of the redistributive and poverty impacts of Sri Lanka's tax and transfer system as a whole. The paper then discusses the impact of each of the fiscal interventions analyzed, including their progressivity and the marginal contributions to poverty and inequality reduction. The final section summarizes the findings and their policy implications.

2. Patterns of Taxes and Social Spending

Tables 9.1 and 9.2 show the breakdown of the major government tax revenue and public spending in 2009 and identify which taxes and transfers were included in the incidence analysis. The country generated total tax revenues amounting to about 12.8 percent of GDP in 2009, which continued to decline to 10.7 percent of GDP in 2014. Sri Lanka now has one of the lowest tax revenue-to-GDP ratios in the world (World Bank 2015).

Total general government spending in Sri Lanka (amounting to about 25 percent of GDP in 2009) is also lower than the average for emerging and developing economies (30 percent of GDP in 2009).[2] The overall fiscal deficit in 2009 amounted to 10 percent of GDP but has since been declining in an effort toward fiscal consolidation. Nonetheless, that revenues have not kept pace with economic growth and have barely kept pace with inflation in absolute terms is a continuing constraint on the budget.

Taxes and Fees

Tax collections in 2009 amounted to 12.8 percent of GDP, of which about 7.2 percent were indirect taxes and fees and the remaining 2.9 percent, direct taxes (table 1). The incidence analysis includes personal income, value added, and excise taxes, covering roughly half of tax revenue collection.

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[2] Spending data as a percentage of GDP from the World Economic Outlook database, International Monetary Fund, https://www.imf.org/external/pubs/ft/weo/2016/02/weodata/index.aspx.

Table 1 Composition of Taxes and Inclusion in Incidence Analysis, Sri Lanka, 2009
Share of GDP, percent

Revenue source	Total	Incidence analysis
Total revenue	14.5	6.1
Taxes	12.8	6.1
Direct taxes	2.9	0.6
Personal income tax	0.6	0.6
Corporate income tax[a]	1.4	n.a.
Tax on interest	0.9	n.a.
Indirect taxes	7.2	5.6
Value added tax	3.5	3.5
Excise taxes	2.0	2.0
Import duties	1.7	n.a.
Other taxes and fees	2.7	n.a.
Nontax revenues	1.7	n.a.

Sources: CBSL 2011.

Note: n.a. = not applicable (not included in incidence analysis). Total and incidence analysis percentages based on fiscal data. The difference between the second and third columns arises because the numerators in public accounts may differ from those obtained in the survey. The methodology does not necessarily force the two to be equal.

a. Excludes the withholding tax on Treasury Bill holdings of the Central Bank.

Personal Income Tax

Direct taxes include personal income taxes (PIT), corporate income tax, and tax on interest. Personal income is taxed on an incremental basis, with the first SL Rs 500,000 of taxable income being taxed at 4 percent and progressively increasing to a maximum of 35 percent. All taxpayers are required to pay their taxes by self-assessment on a current year basis in quarterly installments.

A pay-as-you-earn (PAYE) scheme applies to employment income: employers deduct taxes at the source. PAYE withholdings are calculated according to tables provided by the revenue authorities. Spouses are taxed separately and must file separate tax returns. Income received by one spouse for services rendered in any trade, business, profession, or vocation carried on or exercised by the other spouse, or by a partnership of which that spouse is a partner, is deemed to be income of that other spouse. In the past, contributions to approved provident or pension funds and donations to approved charities were tax-deductible up to either one-third of the individual's assessable income or SL Rs 75,000, whichever was lower. However, this relief was withdrawn in April 2011 such that neither charitable donations nor provident or pension fund contributions are tax-deductible.

Although this analysis includes PIT, it does not include the corporate income tax and taxes on interest because methods are not well developed enough to apportion the burden of these taxes across the relevant households.

Indirect Taxes

Among indirect taxes, the most important is the value added tax (VAT), making up about one-third of total revenue collection. The standard VAT in 2009 was 12 percent on goods and services. All goods and services are subject to VAT except for telecommunication services, educational services, locally manufactured briquettes and pallets using biomass wastes, locally developed software, and goods and services provided to foreign-funded infrastructure.

In addition, selective sales (or excise) taxes, including taxes on cigarettes, liquor, and motor vehicles, amounted to 2 percent of GDP in 2009. The tax rates vary by the type of product and were increased in 2012 (Sri Lanka, Ministry of Finance and Planning 2012). For purposes of this analysis using 2009 data, however, the 2009 tax rates were as follows:

- *Alcohol:* SL Rs 85 per bulk liter for malt, SL Rs 778 per proof liter for wine or liquor made out of any cereal, and SL Rs 1,063 per proof liter for foreign spirits

- *Tobacco:* SL Rs 4,000 per kilogram net weight for cigars and SL Rs 16,400 per 1,000 for cigarettes exceeding 84 millimeters in length

- *Motor vehicles:* 8 percent for hybrid motor vehicles with a vehicle cylinder capacity below 2,000 and 138 percent for diesel cars with a vehicle cylinder capacity above 2,500

- *Petroleum:* SL Rs 2.50 per liter of diesel and SL Rs 25 per liter of gasoline (Sri Lanka, Ministry of Finance and Planning 2010)

Gasoline and diesel prices have been set administratively since at least 1990—in the case of diesel, usually below the global benchmark diesel price.[3] The impact of fixing the price exceeded the impact of the excise, which means that there was a net subsidy. Although the implicit subsidy is not an explicit fiscal expenditure, it has led to losses at the state-owned petroleum importer and thus to capital infusions by the government, making it an effective fiscal burden (Sri Lanka, Ministry of Finance 2016, 172).[4] However, the analysis of the impact of taxes and spending only focuses on the incidence of the petroleum excise by the central government and does not take into account the impact of the implicit subsidy conferred by the gasoline importer.

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[3] Ceylon Petroleum Corporation, "Historical Prices," http://www.ceypetco.gov.lk/History.htm. Los Angeles spot price adjusted for transmission and distribution (T&D) cost. This analysis has been performed on diesel prices only.

[4] The analysis of the impact of taxes and spending only focuses on the incidence of the petroleum excise by the central government; it does not take into account the impact of the implicit subsidy conferred by the gasoline importer, because this information was not available at the time.

In addition to VAT and excise taxes, Sri Lanka charges import duties and fees at the border on imported goods. These amounted to 1.7 percent of GDP in 2009. Finally, other smaller taxes and levies jointly contributed less than 3 percent of GDP.[5]

Government Spending

Total government spending in 2009 amounted to about 25 percent of GDP in 2009 (table 2). Interest payments were 6.4 percent of GDP, highlighting the heavy debt burden that Sri Lanka carried at the time. Total primary spending was 18.5 percent of GDP, making up about one-third of primary spending, (6.5 percent of GDP) of which 3.4 percent of GDP was dedicated to in-kind transfers including health and education, and about 2 percent of GDP was spent on direct cash transfers. In addition, there were relatively large outlays for Public Service Pension Scheme, amounting to about 1.5 percent of GDP, while spending on contributory pensions amounted to 0.4 percent of GDP.

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[5] "Other taxes and fees" include the Nation Building Tax (an ad valorem 2 percent tax on the price of goods and services at the point of sale), the Ports and Airport Development Levy, the Stamp Duty, the Special Commodity Levy, the Regional Development Levy, the Cess Levy, and the Social Responsibility Levy. Note that in November 2009, customs duty, port levy, nation building tax, social responsibility levy, and value-added tax were replaced by a lower special commodity levy (Mukherji and Iyengar 2013).

Table 2 Composition of Government Spending and Inclusion in Incidence Analysis, Sri Lanka, 2009

Share of GDP, percent

Spending category	Total	Incidence analysis
Total government spending[a]	24.86	5.57
Primary government spending[b]	18.45	5.26
Social spending[c]	6.49	5.26
Total direct transfers	2.00	1.92
Cash transfers (excluding all pensions)	0.55	0.47
Samurdhi[d]	0.19	0.19
Assistance to Disabled Soldiers	0.20	0.20
Free textbooks[e]	0.05	0.05
Nutrition program[e]	0.05	n.a.
School uniforms[e]	0.03	0.03
Other cash transfers	0.03	n.a.
Noncontributory pensions (PSPS)[f]	1.45	1.45
Total in-kind transfers	3.44	3.34
Education	1.94	1.87
Health	1.48	1.48
Flood and drought relief	0.02	n.a.
Other social spending	1.06	n.a.
Contributory pensions[g]	0.35	0.31
Non-social spending	11.61	n.a.
Indirect subsidies	1.27	0.74
Fuel subsidies	0.16	n.a.
Fertilizer subsidy	0.56	0.56
Domestic water	0.03	0.03
Domestic electricity	0.15	0.15
Transport	0.33	n.a.
Other	0.05	n.a.
Other non-social spending	10.34	n.a.
Debt servicing	17.08	n.a.
Interest payments (foreign and domestic)	6.40	n.a.
Amortization payments	10.67	n.a.

Source: CBSL 2011.

Note: n.a. = not applicable (not included in the incidence analysis). The difference between second and third columns arises because not all of the expenditure elements in government accounts can be analyzed given the household survey data at hand.

a. Total government spending = primary government spending + interest payments. Amortization payments are accounted for separately (below the "interest payments" line), in line with standard government accounts.

b. Primary government spending = social spending with contributory pensions + non-social spending.

c. Social spending = current and capital expenditure on social services, including total cash transfers, total noncontributory pensions, total in-kind transfers, and other social spending. It excludes contributory pensions. "Other social spending" includes small social assistance programs not included in the household survey so were not included in the analysis.

d. The Samurdhi Poverty Alleviation Program is Sri Lanka's flagship cash transfer program, including eight subprograms.

e. Free textbooks and school uniforms are not included in education spending, which has been reduced by a corresponding amount to avoid double counting. Similarly, nutrition programs are not included in health spending.

f. PSPS = Public Service Pension Scheme. This figure also includes gratuity.

g. Contributory pensions include the Social Pension and Social Benefit scheme, the widows/widowers and orphans pension scheme, the public service provident fund, and the farmer's and fisherman's pension scheme.

Direct Transfers and Noncontributory Pensions

Direct transfers include the flagship program, Samurdhi, and several smaller transfer programs as well as the noncontributory pension program, the Public Service Pension Scheme. Total spending on direct transfers amounts to 2 percent of GDP, as detailed below.

Noncontributory Pensions

The noncontributory Public Service Pensions Scheme (PSPS) is the largest pension scheme in operation for permanent public sector employees who have completed at least 10 years of service. The pension received by each employee depends on his or her last drawn salary and years of service. Employees in service for 10 years receive 40 percent of their final salary, while employees in service for more than 10 years receive 90 percent of their salary. Civil servants are eligible for a pension at the age of 55 (men) or 50 (women) or, at the latest, by the age of 60. Transfers are not adjusted for inflation over time.

Samurdhi Poverty Alleviation Program

The flagship cash transfer program in Sri Lanka is the Samurdhi Poverty Alleviation Program is a means-tested program, which revolves around poverty cushioning through eight subprograms including an income support scheme, an insurance scheme, and social development programs—collectively amounting to spending of about 0.2 percent of GDP in 2009. The Samurdhi subprograms include the following:

- *Income support:* an unconditional monthly cash transfer to women with children[6]

- *Social security fund:* cash transfers at important events, including the death of any household member, the birth of the first or second child, and during illness[7]

- *Nutrition food package program:* a monthly voucher that can be used for food purchases for a period of 20 months to both pregnant and lactating mothers

- *Nutrition allowance program:* a monthly voucher to lactating mothers of beneficiary families during the period of 12 months following birth[8]

- *Kerosene subsidy:* a monthly payment of SL Rs 100 to Samurdhi beneficiaries who lack electricity in their homes

- *Dry ration stamp:* stamps to purchase goods, issued to families displaced because of the Sri Lankan civil war that ended in 2009 in the north and east

- *Glass of Milk Program:* a stamp to provide a glass of milk per day for children aged 2–5 years of beneficiary households

- *Sipdora scholarship program:* SL Rs 500 per month to the children of Samurdhi beneficiaries (20 from each divisional secretariat) with the highest scores in the General Certificate of Education (Ordinary Level) examination.

A recent evaluation of Samurdhi found the program has a positive and significant impact on both short-run and long-run welfare of households, especially in the areas of consumption, education, and income (Thibbotuwawa et al. 2012). As for nutrition, however, the Samurdhi grants cover only about 10 percent of household expenditure and hence are unlikely to be effective in raising the nutrition standards of beneficiary households (Gunatilaka et al. 1997).

Other Direct Transfers

Other direct transfer programs include the following:

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[6] Households earning a monthly income of less than SL Rs 1,500 qualified for the program. Eligible families with six or more members receive SL Rs 1,500 a month (US$13.05 at the 2009 average exchange rate), while those with 3–5 members, 2 members, and 1 member receive SL Rs 900 (US$7.83), SL Rs 525 (US$4.57), and SL Rs 375 (US$3.26), respectively. Beneficiaries exit the program when household income increased to SL Rs 2,000 for a consecutive period of six months or when a household member found employment.

[7] Transfers for life events are as follows: SL Rs 10,000 (US$87 at the 2009 average exchange rate) at the death of any household member; SL Rs 5,000 (US$43.50) at the birth of the first baby and SL Rs 2,500 (US$21.75) at the birth of the second baby; and SL Rs 3,000 (US$26.10) is provided for 30 days at a rate of SL Rs 100 (US$0.87) per day during illness.

[8] The nutrition allowance is a monthly stamp aid of SL Rs 200 (US$1.74 at the 2009 average exchange rate) while the Nutrition Food Package monthly stamp (voucher) that can be used for food purchases of SL Rs 500 (US$4.35).

- *Assistance to Disabled Soldiers:* cash transfers to disabled soldiers and to the families of soldiers who passed away during the Sri Lankan Civil War

- *Transfers to schoolchildren:* cash transfers in the form of bursary and scholarship allowances to needy children, provision of free textbooks and uniforms, and spending on nutritional programs for children in underprivileged areas

- *Transfers to university students:* bursary payments to needy students

- *Poshana Manpetha Program:* fresh milk to children aged 2–5 years[9]

- *Transfers to internally displaced persons:* cash transfers to households displaced because of the Sri Lankan Civil War or the 2004 Indian Ocean tsunami disaster

- *Additional transfers:* cash and in-kind transfers, usually targeting vulnerable groups of the poorer sections of society (including expectant mothers, disabled people, handicapped students, and the elderly), and assistance programs provided through provincial councils

In-Kind Transfers

Spending on in-kind transfers, amounting to 3.5 percent of GDP in 2009, include spending on health, education, and flood and drought relief. Incidence analysis was undertaken for both health and education—the areas that cover the largest share of in-kind spending.

Education Spending

Sri Lanka provides free public education through the 13th grade.[10] Shortly after gaining independence from British rule in 1948, the government took extensive measures to make this provision accessible and compulsory for as many children as possible, regardless of income. As a result of this decades-long commitment to education, primary education attendance is essentially universal; secondary school attendance is also high by middle-income standards; and secondary completion rates saw a major increase between 2002 and 2013, reaching about 60 percent of the target population.

Education is provided mainly by the state, but private schools and privenas (religious institutions where monks receive general education) also provide education in Sri Lanka. All local schools in Sri Lanka prepare students for the Ordinary Level examination, which then qualifies them to sit for the Advanced Level examination. Obtaining the required z- score (calculated using test results of

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[9] The program falls under the purview of Ministry of Child Development and women's affairs.

[10] Note that in-kind education spending does not include uniforms, textbooks, and scholarships, all of which are considered part of direct transfers. The structure of the Sri Lankan education system consists of primary (grades 1–5), junior secondary (grades 6–9), senior secondary (grades 10–11), collegiate (grades 12–13), and tertiary education levels. It is legally mandatory for students to study until the senior secondary level.

students for that particular year) on this examination ensures that students are eligible to apply for free tertiary education at a Sri Lankan university (for which students are required to pay a small registration fee of about SL Rs 500 per semester).

In the tertiary education sphere, all universities in operation are state-held establishments, including one Open University run by the state. In addition, a few institutions not bearing the title "university" offer degrees for a fee; almost all of these institutions are affiliated with foreign universities. Sri Lanka has 14 conventional universities (excluding the Open University of Sri Lanka). Nearly 63 percent of students who sit for the Advanced Level examination are deemed eligible to enter these universities, but only around 16 percent of these students are admitted.

The government of Sri Lanka is the sole funder of education in public schools and universities in Sri Lanka. Although public education up to the first-degree level (college up through a bachelor's degree) has been state-funded for decades, public spending on education has amounted to less than 3 percent of the country's GDP between 2000 and 2010 and even less than 2 percent between 2010 and 2014. Despite public demand to increase public expenditure on education, these levels continue to be constrained in part by relatively low revenue collections.

Health Spending

Health care services in Sri Lanka are provided by both the public and private sectors. Public health care is provided to everyone free of charge, and citizens can access free medicine and health services at government hospitals and dispensaries around the country. The Killinochchi, Mannar, Vavauniya, and Mullativu districts in the Northern Province had the fewest government hospitals in 2007 compared with other provinces in the country.

Public health care services are managed by the Ministry of Health, Nutrition & Indigenous Medicine, which is the central body in control. The provincial Ministries of Health control health care services within the limits of each province. Beginning in the early 2000s, however, the Ministry of Health assumed centralized control of several provincial and district hospitals.

General government spending on health fell from 2 percent to 1.4 percent of GDP between 2006 and 2013. In 2009, government expenditure on health amounted to 1.5 percent of GDP, or 5.9 percent of total public expenditure. This is low relative to other middle-income countries, particularly given the rising costs of health care associated with the aging population in Sri Lanka (World Bank 2015). As a result, private expenditure on health care is very high, amounting to 56 percent of total expenditure on health in 2008. Almost 90 percent of private spending on health care is out-of-pocket spending, while only 10 percent comes from insurance schemes and other private sources.

Flood and Drought Relief

Finally, flood and drought relief includes assistance in the form of dry rations and financial assistance for flood and drought victims. Spending on this assistance constitutes a relatively small share of all social spending, amounting to only 0.02 percent of GDP in 2009.

Contributory Pensions

Contributory pension schemes have low coverage and are relatively small. These pensions, which are nontaxable, are the following:

- *Social Pension and Social Security Benefit Scheme:* Any person not entitled to a noncontributory government pension is eligible to enroll for this pension scheme. The monthly pension received by an individual depends on the age at enrollment. Members are required to make monthly contributions for a minimum number of years that vary according to the age of enrollment. The monthly pension upon retirement ranges from SL Rs 1,000 to SL Rs 8,000. Formerly known as the Pension Scheme for the Self-Employed (now expanded to cover all those who do not receive a government pension), this scheme has lower coverage than others because workers' reluctance to enroll (also seen in other pension schemes) due to their inability to pay a combined worker and employer contribution.

- *Widows/Widowers and Orphans Pension Scheme (W&OPS):* This scheme ensures that if government employees have been contributing to the W&OPS (4–7 percent of employee's wages in addition to PSPS contributions) during their time of employment, upon their demise, the pension benefits from the PSPS will be received by their dependents.

- *Public Service Provident Fund:* This fund was set up for the benefit of public sector employees who receive a monthly income but are not eligible for a noncontributory pension. Employees contribute 8 percent of their salary, while the government contributes 12 percent each month. The employee is entitled to withdraw the accumulated funds upon retirement.

- *Farmer's Pension Scheme and Fisherman's Pension Scheme:* In both schemes, the contributions are fixed according to the age at enrollment and range from SL Rs 260 (enrolled at age 18) to SL Rs 1,380 (enrolled at age 59). Depending on the enrollment age, retired farmers and fishermen receive a monthly pension between SL Rs 1,000 and SL Rs 4,167. The farming community makes up 25–30 percent of the workforce, and the fishing community comprises of 1 percent of the workforce.

One of the main problems arising in these pension schemes is low, ineffective coverage. However, the schemes set up for the informal sector collectively cover approximately 80 percent of the sector, which is high for South Asia (Gaminiratne 2004).

Indirect Subsidies

The government of Sri Lanka provides price subsidies on key commodities to targeted households to reduce the cost of living. The following subsidies were provided in 2011/12:

- *Fertilizer:* Subsidized rates for fertilizer have been available since 1962 intermittently. The subsidy was not given during 1990–94 but was reintroduced in 1995 for all three types of fertilizer (nitrogen, phosphorus, and potassium). From 1997 to 2005, the subsidy was limited to urea. Since 2005, the subsidy was again extended to cover all three main types of fertilizer according to a fixed price scheme: it started with subsidies to paddy cultivation and tea plantations in 2005 but has extended to all crops since 2011. The government has borne an increasing share of fertilizer cost in the form of subsidies. In 2011, the government subsidies for urea, triple superphospate, and muriate of potash were 85 percent, 86 percent, and 90 percent of total fertilizer cost per 50 kilograms, respectively.

- *Petroleum:* The government provides fuel subsidies to households that lack access to electricity as well as for fishing boats. In 2009, fuel subsidy expenditures amounted to 0.16 percent of GDP.

- *Electricity:* Consumers pay subsidized prices for electricity according to their level of consumption. The gross electricity subsidy is spread out among household consumption, industries, hotels, street lighting, government hospitals, schools, and religious places. Of these, household consumption and industries received the largest share of subsidies, amounting to 50 percent and 42 percent of total electricity subsidies, respectively. Domestic electricity subsidies amounted to 0.15 percent of GDP in 2009.

- *Water:* Households can receive a subsidized rate for water depending on their consumption level. Of the households with access to pipe-borne water and consumption of 25 units, 89 percent receive water at subsidized prices. Domestic water subsidies amounted to 0.03 percent of GDP in 2009.

- *Transport:* The government provides reduced railway fares and bus transport facilities through season tickets for schoolchildren. In 2009, the Ceylon Transport Board (CTB) and the Ceylon Government Railway (CGR) incurred operational losses that translated into a subsidy amounting to 0.33 percent of GDP (SL Rs 15.6 per kilometer for CTB and SL Rs 0.54 per kilometer for CGR) (Sri Lanka, Ministry of Finance and Planning 2009, 58).

3. Data and Assumptions

Data

The main data source used throughout this analysis is the Household Income and Expenditure Survey (HIES), produced by the Department of Census Statistics between July 2009 and June 2010. The survey has national coverage and is representative at the provincial level, collecting data on all household members as well as on household assets, including cultivated land.

The survey contains information on consumption and self-consumption, fringe benefits, imputed rents, remittances, direct taxes, and contributions to social security. Although it also includes data on pensions, it does not differentiate between the contributory and noncontributory programs. It also identifies households benefiting from the Samurdhi program, disability relief payments, food transfers, and the use of public education. Finally, although HIES provides information on the use of health facilities, it does not differentiate between public and private facilities.

Assumptions

To carry out the incidence analysis, we construct the income concepts described in Inchauste and Lustig (2017), starting from the official aggregate of households' per capita consumption in the 2009/10 HIES. We count as "disposable income" a household's total reported consumption.

Market Income

To create "market income," we subtract from "disposable income" direct monetary transfers and near-cash transfers and add direct taxes. Regarding the transfers, the 2009/10 HIES directly identifies Samurdhi beneficiary households and reports disability or relief payments to disabled soldiers, assistance to internally displaced persons, flood and drought relief, and public assistance through provincial councils. We also impute the value of free textbooks and school uniforms.

The CEQ framework (Lustig and Higgins 2013b) distinguishes between contributory and noncontributory pensions because, in some countries, contributory pensions are funded by the household's own (prior) savings in the form of social security contributions rather than by general government revenues. Separating these concepts out in the case of Sri Lanka was challenging because the HIES questionnaire does not explicitly identify beneficiaries as having contributory pensions as opposed to noncontributory pensions. However, the questionnaire gathers detailed information about "social groups" to which individual household members belong that would entitle them to certain benefits. Among these is a set of "pensioner" individual characteristics to impute the likely beneficiaries of each type of pension.

Given the characteristics of the pension system in Sri Lanka, we assume that both the PSPS and contributory pensions come closest to being a savings plan in which a share of income is

accumulated during active years.[11] Therefore, pensions are treated as part of lifetime earnings and included as part of market income (the pretax, pretransfer income on which the incidence analysis is based).

As for direct taxes, the HIES does not ask about taxes paid, so we must simulate these values. We assume that formal sector employees and self-employed workers pay statutory PIT rates and mandatory retirement savings in the social security system where appropriate. We do not distinguish between formal and informal employment.

Consumable Income

To calculate "consumable income," we return to our "disposable income" measure, subtract indirect taxes paid, and add indirect subsidies.

The VAT system in Sri Lanka has three rates: some goods and services have a zero tax rate, others a standard tax rate (12 percent), and some a luxury tax rate (20 percent). However, the goods belonging to each category can be directly identified in the 2009/10 HIES. Although there is likely some informality (for example, purchases in rural areas and informal markets are more likely not to pay VAT), it is impossible to know from the HIES whether a household bought something from a firm that pays VAT. Further, in a standard competitive model, prices at firms that do not pay VAT would be the same as those at VAT-paying firms, with the benefits of nonpayment going to the firms' owners rather than the customers. Households suffer the incidence of the tax regardless of the tax status of the seller, though not all the benefits go to the fisc; some are captured by small-business owners. As such, we use an effective tax rate (rather than the statutory tax rate), which is applied to all households.[12]

Excise duties are the most complicated of the indirect taxes in Sri Lanka, with different rates depending on the type of product. These values were imputed by proportionately dividing the petroleum, tobacco, and alcohol excise taxes collected by the government according to the percentage of petroleum, tobacco, and alcohol expenditure share by market income deciles from the survey.

For indirect subsidies, we can identify and estimate water, electricity, and fertilizer subsidies as follows:

- *Water subsidies:* Based on the domestic tariff structure, we estimate total units consumed by households in HIES because the HIES survey provides the total amount of the water bill, not units consumed. We then compare this to the total cost per unit of water produced to estimate

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[11] Contributory pensions include the Social Pension and Social Benefit scheme; the Widows, Widowers, and Orphans Pension scheme, the Public Service Provident Fund, and the Farmer's and Fisherman's Pension scheme.

[12] The effective tax rate is defined as total VAT collections divided by taxable consumption. In this case, the effective tax rate for luxuries is taken to be 20 percent and, for basic goods, 7 percent (based on the effective tax rate for manufactured goods).

the amount of water subsidies per household. We calculate water subsidies separately for Samurdhi recipients and non-Samurdhi recipients and then aggregate these to get a total value.

- *Electricity subsidies:* Similarly, based on the domestic tariff structure from the Ceylon Electricity Board, we estimate total units consumed by households in HIES because the HIES survey provides the total amount of the electricity bill, not units consumed. We then apply the total cost per unit of electricity produced and estimate the amount of water subsidies.

- *Fertilizer subsidies:* We first identified eligible households in the HIES, because the fertilizer subsidy is only given to paddy farmers not exceeding 4.942 acres. Using the total land area identified in the survey as the eligibility criterion for the subsidy, we worked out the unit cost of subsidy received by an acre of cultivated, subsidy-eligible land and distributed the total subsidy to eligible households accordingly.

Final Income

To calculate "final income," we add to "consumable income" the in-kind transfers associated with public provision of education and health care. We did not subtract copayments or fees from these values. Both schools and health care facilities manage their own budgets. The state supports these institutions with transfers based on the numbers of students and types of school, the numbers of patients and types of facilities and procedures, and so on.

For schooling, we use information from the Ministry of Education for each type of school and divide by the number of students in those schools, at a national level. For health, we distinguish between inpatient and outpatient services according to information in the survey. The total annualized health benefit received by an individual (unit cost) is estimated as the total public expenditure for a health care service divided by the total number of individuals receiving that service according to the HIES. Then the total annualized benefit of health care services for the population is estimated by summing over all individuals in the country.

4. Overall Impact of Fiscal Policy on Poverty and Inequality

In what follows, we report the results of this analysis. It is important to note that in the results presented here, both contributory pensions and the (noncontributory) pensions to longtime civil servants are included in market (prefiscal) income. Essentially, this implies that pensions are treated as deferred income.

The net impact of fiscal policy is equalizing and poverty-reducing, with the poorest deciles receiving more benefits relative to their market income than what they pay out (figure 1). This result occurs primarily from the impact of spending on in-kind transfers in the form of education, given that spending per pupil is a relatively large share of the market incomes of the poorest deciles. As a

result, household income, once taxes and transfers have been taken into account ("final income"), is slightly better distributed than before the influence of fiscal policy.

When focusing on the net cash position of households (consumable income), the results show that all but the bottom 30 percent were net payers to the government.

Figure 1 Incidence of Taxes and Transfers, by Income Concept and Decile, in Sri Lanka, 2009/10
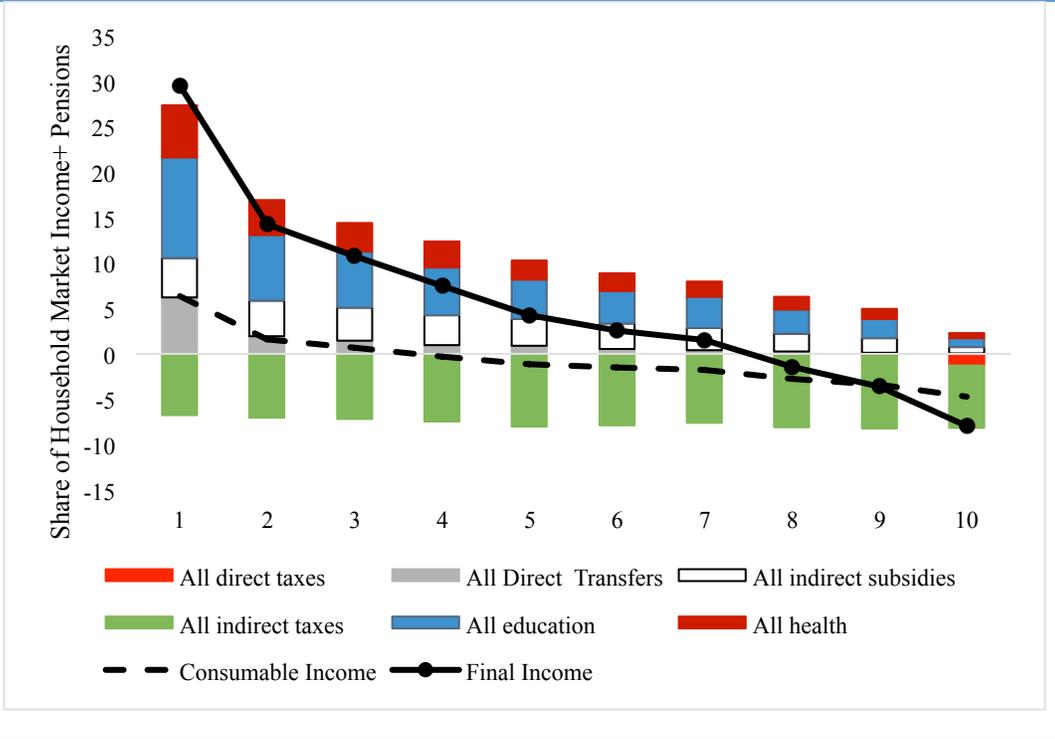
Source: Based on 2009/10 Household Income and Expenditure Survey (HIES) data.

Note: "Market income" comprises pretax wages, salaries, income earned from capital assets (rent, interest, or dividends), and private transfers. Here, both contributory and noncontributory pensions are included in market income. "Consumable income" = market income – direct and indirect taxes + direct cash transfers + indirect subsidies. "Final income" = consumable income + in-kind transfers.

Impact on Inequality

Fiscal policy makes a substantial contribution to reducing market-income inequality in Sri Lanka (table 9.3), reducing the market-income Gini coefficient from 0.372 to 0.344 when all taxes (PIT, payroll taxes, VAT, excise taxes, and the fuel levy) and transfers (cash transfers and the monetized value of education and health) are taken into account. If one excludes the monetized value of education and health services, the Gini coefficient still falls from the initial level of 0.372 for market income to 0.360 for consumable income (that is, after taxes and cash transfers).

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How did Sri Lanka compare in terms of fiscal redistribution relative to other middle-income countries at the end of 2010? As shown in table 9.3, the reduction in the consumable-income Gini relative to the market-income Gini was lower in Sri Lanka than in the other countries included in our sample that have similar GDP per capita. (For comparisons of all the CEQ sample countries in terms of fiscal redistribution, see Inchauste and Lustig (2017).) These relatively small changes in inequality are partly related to the smaller size of government in Sri Lanka than in other middle-income countries. More important, however, is the fact that the kinds of taxes and transfers that could make the biggest difference were relatively small.

Impact on Poverty

When using the US$2.50-per-day international per capita poverty line, the incidence of poverty before taxes and transfers in Sri Lanka was 9.8 percent in 2010, but this rate declined to 8.9 percent after the impact of direct and indirect taxes and transfers (table 9.3).[13] Following convention, this analysis refrains from calculating poverty rates after in-kind transfers because households may not be aware of the actual amount spent on their behalf and may not value this spending as much as they would value a direct cash transfer. As a result, the analysis does not assume that this spending improves their welfare by a corresponding amount. Regardless of the poverty line being used, the analysis shows that taxes and transfers slightly reduce the incidence of poverty (table 9.3).

Table 9.3 Inequality and Poverty Indicators in Sri Lanka, by Income Concept, 2010

Indicator type	Market income[a]	Disposable income[b]	Consumable income[c]	Final income[d]
Inequality indicators				
Gini coefficient[e]	0.3719	0.3646	0.3598	0.3435
Theil index[f]	0.2863	0.2743	0.2690	0.2473
90/10 ratio[g]	4.4892	4.3521	4.2414	3.9180
Headcount poverty indicators				
National poverty line (%)[h]	9.6	8.7	9.6	n.a.
Food poverty line (%)	2.3	1.9	2.0	n.a.
US$1.25 per day 2005 PPP (%)	0.7	0.3	0.4	n.a.
US$2.50 per day 2005 PPP (%)	9.8	8.5	8.9	n.a.
US$4.00 per day 2005 PPP (%)	35.9	34.6	35.7	n.a.

Source: Based on 2009/10 Household Income and Expenditure Survey (HIES) data.

Note: n.a. = not applicable (not included in the analysis). PPP = purchasing power parity.

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[13] Typically, Sri Lanka measures welfare using a household consumption aggregate. This welfare measure is what we describe as "disposable income," as it corresponds to household consumption on goods and services paid for from sources that include public transfers and are after direct tax payments. Thus, the headcount rate for disposable income using the national poverty line is 8.7 percent, coinciding with the official headcount rate for 2009/10.

a. "Market income" comprises pretax wages, salaries, income earned from capital assets (rent, interest, or dividends), and private transfers. Here, both contributory and noncontributory pensions are included in market income.

b. "Disposable income" = market income – personal income taxes and social security contributions + direct cash transfers.

c. "Consumable income" = disposable income – indirect (sales and excise) taxes + indirect subsidies.

d. "Final income" = consumable income + in-kind transfers for education and health care. Poverty rates are not calculated by final income because households may not be aware of the amounts spent on their behalf and may not value this spending as much as a direct cash transfer. Hence, the analysis does not assume that this spending improves their welfare by a corresponding amount.

e. The Gini coefficient measures the equality of income distribution, ranging from zero (perfect equality) to one (maximal inequality).

f. The Theil index, a measurement of economic inequality and other economic phenomena, is a member of the family of generalized entropy inequality measures (Theil 1967).

g. The 90/10 ratio measures how the relatively rich fare compare with the relatively poor. It is calculated as the average income of those in the 90th percentile divided by the average income of those in the 10th percentile (Lustig and Higgins 2013b).

h. The national poverty line in 2010 was defined by the value that affords consumption of a minimal nutritional intake (2,030 kilocalories) per day per adult.

However, some people are made worse off by the fiscal system. The fiscal transition matrix (table 4) measures the share of households that have moved into different income groups after taxes and direct transfers (not including in-kind health and education).[14] What is clear is that despite the improvement in the poverty headcount with the intervention of fiscal policy, as much as 8 percent of households that were above the US$2.50-a-day poverty line before fiscal intervention become poor in cash terms. This is because the benefits delivered through direct transfers and indirect subsidies are not enough to compensate for the indirect taxes being paid by these households.

Table 4 Fiscal Transitions in Sri Lanka, 2009/10
percentage

Market income[a] group (y, US$)	Consumable income[b] group (y, US$)						Horizontal sum	Share of population
	y < 1.25	1.25 ≤ y < 2.50	2.50 ≤ y < 4.00	4.00 ≤ y < 10.00	10.00 ≤ y < 50.00	50.00 ≤ y		
y < 1.25	81	18	1	0	0	0	100	5
1.25 ≤ y < 2.50	2	95	3	0	0	0	100	34
2.50 ≤ y < 4.00	0	8	91	1	0	0	100	31
4.00 ≤ y < 10.00	0	0	9	90	0	0	100	26
10.00 ≤ y < 50.00	0	0	0	11	89	0	100	4
50.00 ≤ y	0	0	0	0	16	84	100	0

[14] The fiscal transition matrix, for analysis within the CEQ framework, was introduced in Higgins and Lustig (2016).

Source: Based on 2009/10 Household Income and Expenditure Survey (HIES) data.

Note: The transition matrix measures the share of households that moved into different income groups after taxes and direct transfers are taken into account (not including in-kind health and education). All income groups stated in terms of U.S. dollars per person per day (in 2005 PPP terms). Shaded cells show the percentage of each market-income group that remained in the same income category when defined by consumable income (after taxes, transfers, and subsidies).

a. "Market income" comprises pretax wages, salaries, income earned from capital assets (rent, interest, or dividends), and private transfers. In this analysis, both contributory and noncontributory pensions are included in market income.

b. "Consumable income" = market income – direct and indirect taxes + direct cash transfers + indirect subsidies.

5. Progressivity, Marginal Contributions, and Pro-Poorness of Taxes and Transfers

As shown above, the combined effect of taxes and social spending in Sri Lanka is equalizing and poverty-reducing. Still to be assessed, however, are *which* components of the fiscal system are equalizing, *which* ones are unequalizing, and to what extent?

As discussed in Lustig (2018) and summarized in the Inchauste and Lustig (2017), in a world with more than one fiscal intervention, standard progressivity measures (such as Kakwani coefficients)[15] are insufficient to determine whether a particular intervention exercises an equalizing or unequalizing force. As a result, to measure the contribution of a particular fiscal intervention (or combinations of them), we have opted to use the marginal contributions.

Recall that the marginal contribution to the redistributive effect of a particular fiscal intervention is measured as the difference in the Gini for the income concept without that intervention and the Gini with the intervention. For example, if one wants to calculate the marginal contribution of VAT to the observed change from the market-income Gini to the consumable-income Gini, one must take the difference between the Gini coefficient of consumable income with and without the VAT. If the VAT is equalizing (unequalizing), this difference shall be positive (negative).

The marginal contributions of each individual fiscal intervention are analyzed here within conventional broad categories such as direct taxes, direct transfers, indirect taxes, education, and health (table 5). The marginal contributions are shown for the "cash" portion of the fiscal system (cash transfers, direct taxes, and indirect taxes and subsidies) as well as for the noncash portion (in-kind education and health benefits). The results show that although direct taxes and transfers are progressive and equalizing, indirect taxes are unequalizing. As described in detail below, both indirect subsidies and in-kind transfers are also equalizing, with the relative impact of in-kind transfers in the form of education being most important.

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[15] Kakwani coefficients are calculated by subtracting an intervention's concentration coefficient from the market-income Gini; progressive interventions have positive Kakwani coefficients, and regressive ones have negative coefficients (Kakwani 1977).

Taxes

Our findings show that direct taxes are progressive and equalizing. The PIT burden is highest for the top decile, while the bottom 50 percent of the income distribution pays little or nothing. As a result, the wealthiest 20 percent of households contribute 95 percent of all PIT, with the top income decile contributing 87 percent of the total alone. In contrast, the fifth through eighth deciles jointly contribute only 5 percent of the total. Although PIT is progressive (with a Kakwani coefficient of 0.546), total revenue collection was only 0.6 percent of GDP, and it makes up less than 0.5 percent of household market income (table 5), so that its redistributive effect is limited (having a marginal contribution to redistribution of 0.004).

In contrast, we find that indirect taxes are slightly regressive, unequalizing, and poverty-increasing. In particular, the VAT has a negative marginal contribution to the redistributive effort (table 5), implying that it is unequalizing, because it taxes a higher share of the pretax income of the poorest deciles. This is because VAT taxes everyone the same amount on the purchase of goods or services, regardless of household income. Moreover, on its own, VAT has a poverty-increasing effect, raising the US$2.50 per day PPP poverty headcount rate by 2 percentage points (table 5).

The same is true for excise taxes: excises on tobacco are slightly regressive and unequalizing, and all excises are poverty-increasing. Note that the purpose of alcohol and tobacco excise taxes is to reduce the consumption of these goods because, in the long run, poor households could end up being poorer due to poor health. As such, the short-term redistributive efforts need to be weighed against longer-term human development objectives.

By contrast, the petroleum excise by itself reduces inequality (as the richer households consume more gasoline) but still increases the burden on the poor. However, this does not take into account the fact that richer households also benefit disproportionately from the implicit subsidy on petroleum due to the fixing of retail prices below global market prices. In 2009, this implicit subsidy exceeded the petroleum excise. As noted before, this analysis does not take into account this implicit subsidy.

Table 5 Marginal Contribution of Taxes and Transfers to Inequality and Poverty Reduction in Sri Lanka, 2009/10

Type of fiscal intervention	Size[a] (%)	Concentration coefficient[b]	Kakwani coefficient[c]	Marginal contribution[d]	
				Redistributive effect[e] (change, Gini points)	Poverty reduction effect[f] (headcount change, pp)
Total from market to consumable income				**0.0074**	**0.0126**
Direct taxes and contributions					
Personal income tax	0.45	0.9171	0.5458	0.0025	0.0000
Contributory pensions	0.55	0.6597	0.2884	0.0017	−0.0004
Direct transfers	0.63	−0.3859	0.7572	0.0044	0.0088
Samurdhi payment[g]	0.40	−0.4163	0.7876	0.0031	0.0062
Disability payment	0.11	−0.6061	0.9775	0.0008	0.0014
Free textbooks	0.07	−0.0801	0.4514	0.0003	0.0007
Free uniforms	0.04	−0.0801	0.4514	0.0002	0.0005
Indirect taxes and subsidies					
Indirect subsidies	2.03	0.0658	0.3056	0.0057	0.0127
Water subsidy	0.28	0.1873	0.1840	0.0005	0.0011
Electricity subsidy	0.89	0.0672	0.3041	0.0026	0.0053
Fertilizer subsidy	0.86	0.0245	0.3468	0.0025	0.0050
Indirect taxes	7.42	0.3650	−0.0063	−0.0003	−0.0220
VAT	4.40	0.3258	−0.0456	−0.0016	−0.0172
Tobacco excise	1.20	0.3438	−0.0275	−0.0008	−0.0029
Liquor excise	0.91	0.4094	0.0381	0.0000	−0.0022
Petroleum excise[h]	0.90	0.5391	0.1678	0.0016	−0.0009
Total from market to final income				**0.0278**	**0.0278**
Direct taxes	0.00	0.0000	0.5458	0.0025	0.0000
Direct transfers	0.63	−0.3859	0.7572	0.0041	0.0066
Indirect subsidies	2.03%	0.0658	0.3056	0.0051	0.0087
Indirect taxes	7.42	0.3650	−0.0063	0.0006	−0.0122
In-kind transfers	4.84	0.0480	0.3916	0.0163	0.0358
Education	3.18	−0.0179	0.3892	0.0105	0.0233
All except tertiary	2.65	−0.0801	0.4514	0.0108	0.0227
Tertiary	0.53	0.2937	0.0776	−0.0003	0.0003
Health	1.65	−0.0250	0.3963	0.0056	0.0112

Source: Based on 2009/10 Household Income and Expenditure Survey (HIES) data.

Note: pp = percentage points. VAT = value added tax. "Market income" comprises pretax wages, salaries, income earned from capital assets (rent, interest, or dividends), and private transfers. Here, both contributory and noncontributory pensions are included in market income. "Consumable income" = market income – direct and indirect taxes + direct cash transfers + indirect subsidies. "Final income" = consumable income + in-kind transfers for education and health care.

a. "Size" refers to the ratio of the amount collected or spent divided by total market income.

b. The concentration coefficient, also called a quasi-Gini, is a measure of the proportion of total program benefits (of a particular program or aggregate category) received by the poorest p percent of the population. Spending is considered regressive whenever the concentration coefficient is higher than the Gini for market income.

c. The Kakwani coefficient is calculated by subtracting the concentration coefficient from the market-income Gini; progressive interventions have positive Kakwani coefficients, and regressive ones have negative coefficients (Kakwani 1977).

d. The "marginal contribution" equals the difference between the Gini coefficient of the relevant ending income concept without the intervention in question and the Gini coefficient of the relevant ending income concept (which, of course, includes that intervention). By definition, the sum of the marginal contributions does not fulfill the adding-up principle, so it will not be equal to the redistributive effect unless by coincidence.

e. The "redistributive effect" equals the difference between the market-income Gini and the relevant ending income concept Gini. The change is measured in Gini points.

f. The "poverty reduction effect" is based on the poverty headcount index using the poverty line of US$2.50 per day in 2005 purchasing power parity (PPP).

g. The Samurdhi Poverty Alleviation Program is Sri Lanka's flagship cash transfer program and includes eight subprograms.

h. Estimates only take into account the impact of the petroleum excise tax. The impact on poverty and inequality of the implicit petroleum subsidy (from the fixing of retail prices below global market prices) likely had the opposite effect, given that the implicit subsidy exceeded the petroleum excise, from which richer households benefit disproportionately.

Government Spending

Ideally, the slightly progressive nature of taxes would be complemented by social spending that would magnify the progressivity of fiscal policy. However, given the very low revenue collections and the associated concerns for fiscal sustainability, there is little room for spending in general in Sri Lanka. Indeed, low revenue collection has led to continued efforts to reduce the deficit through spending cuts. Unfortunately, this has included cuts to social spending that is progressive and equalizing.

Direct Transfers

In particular, spending on direct transfers has fallen from 0.87 percent of GDP in 2001 to less than 0.5 percent of GDP in 2012. Total expenditures on Samurdhi —Sri Lanka's flagship antipoverty program—fell from 0.87 percent to 0.14 percent of GDP between 2001 and 2012 (figure 2). Indeed, if the size of the Samurdhi program had not declined but had instead remained unchanged from

2002 to 2009/10, poverty would have been 1.5 percentage points lower, leading to about a 10 percent greater reduction in poverty (Ceriani, Inchauste, and Olivieri 2015).

Consistent with this result, we find that Samurdhi is both progressive and pro-poor, benefiting the poorest deciles more than the top deciles in relation to their market income but also in per capita terms.[16] Indeed, 27 percent of all Samurdhi spending benefits the bottom decile, and up to 70 percent of total Samurdhi spending benefits the bottom 40 percent of the distribution. However, total spending on Samurdhi is small, amounting to only 3.5 percent of the poorest decile's market income. In addition, not only is spending on the transfer small, but its targeting could be much more effective to make it even more progressive and have a much greater poverty impact. (Thirty percent of Samurdhi spending benefits households in the top 60 percent of the market income distribution, none of which are classified as poor.)

Figure 2 Share of GDP Spent on Samurdhi and Other Direct Transfers in Sri Lanka, 2000–12
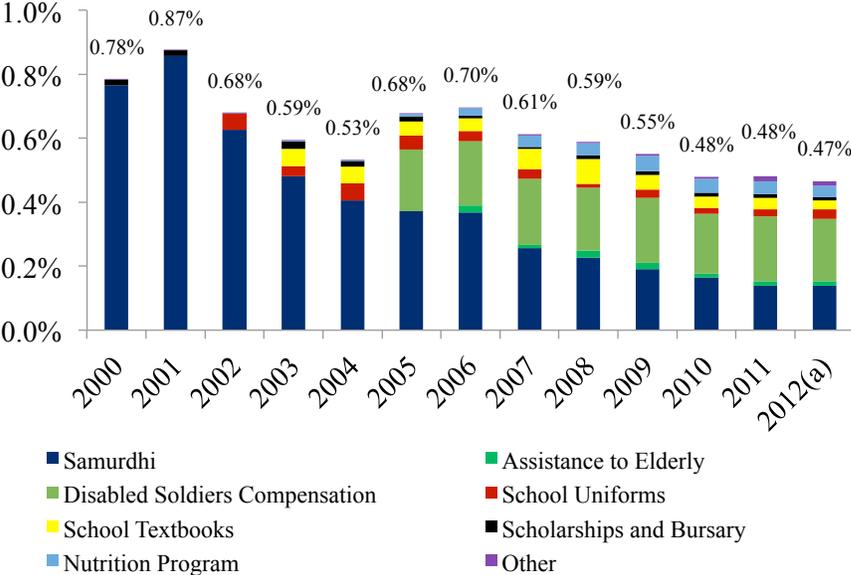
Source: CBSL 2013.

Note: The Samurdhi Poverty Alleviation Program is Sri Lanka's flagship cash transfer program and includes eight subprograms.

a. 2012 data are preliminary.

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[16] Spending is considered "progressive" whenever the concentration coefficient is lower than the Gini for market income—meaning that the benefits from that spending as a share of market income tend to fall with market income. Spending is "pro-poor" whenever the concentration coefficient is not only lower than the Gini but also negative. Pro-poor spending implies that the *per capita* government spending on the transfer *tends* to fall with market income. For further discussion of "progressive" and "pro-poor" spending, see Inchauste and Lustig (2017).

Other direct transfers—including assistance to disabled soldiers, free textbooks and school uniforms, and food assistance—are also progressive in absolute terms, equalizing, and poverty-reducing, with 57 percent of such spending benefiting the bottom 40 percent of the distribution. However, the amount of spending on these programs in 2009/10 was very small, amounting to 0.24 percent of GDP in 2009 and adding only 3 percent to market incomes of the poorest decile.

Indirect Subsidies

Spending on indirect subsidies (including fuel, fertilizer, water, and electricity subsidies) grew unpredictably over the 2000–10 decade, partly because fuel and electricity subsidies fluctuate with international prices. In 2009, indirect subsidies amounted to 1.27 percent of GDP, of which half was devoted to fertilizer subsidies (0.6 percent of GDP), representing more than six times the allocation for Samurdhi.

The results show that although these subsidies are progressive in relative terms and equalizing, they are not pro-poor (that is, they are not progressive in absolute terms). This is because a large part of subsidies benefit nonpoor households. In particular, only about 35 percent of total spending on indirect subsidies for fertilizer, electricity, and water benefited the bottom 40 percent of the income distribution in 2009/10, and more than 20 percent benefited the top 20 percent[17]—partly because the poor lack access to land or piped water. Indeed, only 4.2 percent of paddy farmers with incomes of less than US$2.50 a day received fertilizer subsidies.[18] Access is one constraint, with 37 percent of individuals living on less than US$2.50 a day having access to electricity, and 34 percent having access to piped water. As a result, 65 percent of fertilizer subsidies, 73 percent of water subsidies, and 67 percent of electricity subsidies benefit households with incomes of more than US$2.50 a day.

Although indirect subsidies are not pro-poor, they represent an important benefit to the poor. If they are eliminated or reduced, the poor would have to be compensated so they are not made poorer by the change.

In-Kind Transfers

How much would a household's income need to increase if it were to pay for subsidized public services at the full cost to the government? To estimate the incidence of public spending on education and health, this subsection focuses on the so-called benefit or expenditure incidence—the government's cost approach. In essence, this question can be answered by using per beneficiary input costs obtained from administrative data as the measure of average benefits allocated to households. This approach is also known as the classic or nonbehavioral approach.

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[17] This analysis does not include analysis of fuel subsidies because of their relatively small size in 2009.

[18] Of a total of 7.791 million paddy farmers who report receiving fertilizer subsidies (farmers with less than five acres of land), only 327,374 have market incomes of less than US$2.50 per person per day.

Taken together, spending on education and health is progressive and equalizing in Sri Lanka, but it was relatively low in 2009/10, with about 10 percent of spending captured by each decile. The analysis shows that spending on education up through secondary school is progressive and pro-poor (figure 3). However, spending on tertiary education is progressive only in relative terms (as it is in other countries), given that students from poor households are less likely to attend.

Figure 3 Share of In-Kind Education and Health Benefits, by Income Decile, in Sri Lanka, 2010
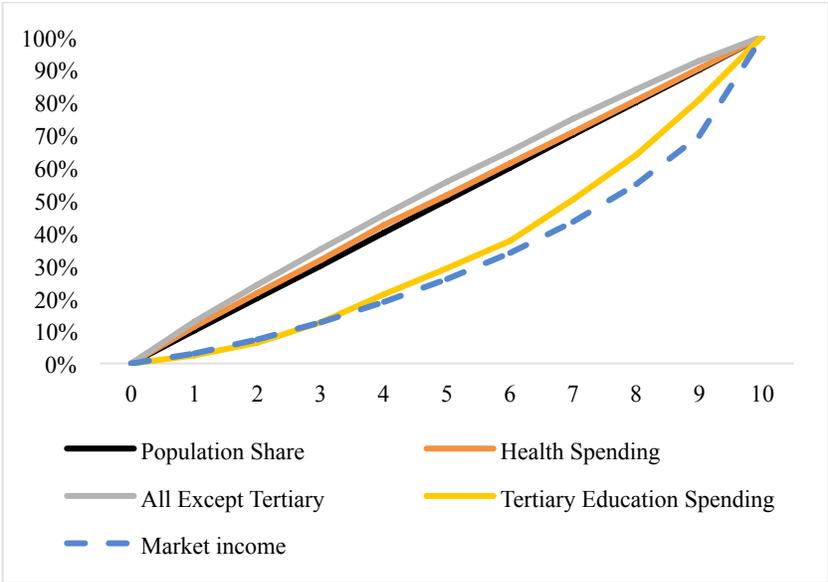
Source: Based on 2009/10 Household Income and Expenditure Survey (HIES) data.

Note: "Market income" comprises pretax wages, salaries, income earned from capital assets (rent, interest, or dividends), and private transfers. In this analysis, both contributory and noncontributory pensions are included in market income.

Health spending is more pro-poor than education spending (figure 3). This is because the monetized value of health spending makes up a larger share of the market incomes of those at the bottom of the income distribution. Public spending on health is relatively well targeted not because poorer people have higher utilization rates, but more likely because high-income households choose not to use the public health care system.

Moreover, in assessing how education and health spending benefit the poor, we have to caution that our analysis does not address the quality of such spending. We use government expenditure data on the various forms of education and health services to estimate unit costs of these programs. The analysis thus assumes that the actual benefit received by individuals is equal to the amount spent per capita. Because the quality of school infrastructure, teachers, and health clinics and hospitals vary across the country, this is a clear limitation of the analysis.

Although Sri Lanka has a net enrollment rate of almost 100 percent at the primary level, about 14 percent of households with school-aged children and per capita incomes of less than US$2.50 a day do not benefit from spending on education because the children do not attend school. This is partly because children in poor households are dropping out at the secondary level and therefore are not benefiting from spending on secondary or tertiary education. Even when we exclude tertiary education (of which only about 1.5 percent of enrollment comes from households with less than US$2.50 a day) we find that 32 percent of households with school-aged children and incomes of less than US$2.50 a day do not benefit from public spending on education below tertiary. This points to additional efforts required to improve enrollment and attendance rates among the poor.

More critically, the amount spent on education is low compared to other middle-income countries, not only in aggregate terms but also as a share of household incomes of the poor. As shown earlier (table 2), spending on education was less than 2 percent of GDP;[19] this level compares with 8.3 percent in Bolivia and 2.8 percent in Peru (see Inchauste and Lustig (2017)).

Similarly, spending on health is woefully small relative to other middle-income countries, amounting to 1.5 percent of GDP, compared with 3.6 percent of GDP in Bolivia and 3.1 percent in Peru. Sri Lanka has a wide network of health care facilities throughout the country, and health is free of charge at public hospitals. Indeed, statistics show that access to institutional care and trained medical officers at birth is close to 100 percent in Sri Lanka. However, health care utilization rates for the bottom of the distribution are below the average for middle-income countries: 47 percent of households with incomes of less than US$2.50 a day do not use health services. This is high relative to Peru, where only 7 percent of similarly poor households do not use health care (see Inchauste and Lustig (2017)).

6. Conclusions and Policy Implications

Sri Lanka has made substantial progress in reducing poverty over the past decade. However, important social and economic development needs persist at a time when revenue collections have been disappointing, reducing the government's ability to expand spending. In this context, this paper has sought to evaluate the effectiveness of fiscal policy in addressing inequality and accelerating poverty reduction. The exercise consisted of undertaking incidence analysis of the major tax and transfer programs individually, and then combining them to evaluate the incidence of fiscal policy as a whole. Although we could not carry out incidence analysis of all budget items, we have analyzed the major tax and spending items for which individual tax and benefits can be assigned to households using microdata.

The analysis finds that taxes and social spending were redistributive and poverty-reducing overall. However, given the country's relatively low revenue and the limited fiscal space, overall social

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[19] Spending on education excludes spending that is included as part of direct transfers, including expenditures on textbooks, uniforms, scholarships, and school feeding programs.

spending was small, leading to very limited impacts. Indeed, low revenue collection has recently led to reductions in spending to maintain macroeconomic stability. Those cuts have made it difficult to maintain funding for key social programs in real terms. The analysis has shown that although direct taxes provide a very small contribution to redistributive efforts, indirect taxes are regressive, unequalizing, and slightly poverty-increasing. Therefore, revenue mobilization efforts aimed at increasing or expanding the VAT system could have negative impacts on the poor unless the social protection system is expanded. These trade-offs need to be taken into account at the design stage, with careful distributional analysis accompanying any reform effort.

On the spending side, direct transfers are absolutely progressive, so that their marginal contribution is both equalizing and poverty-reducing. In terms of direct transfers, the analysis found that although the Samurdhi program was progressive, it was too small to truly make a significant dent in reducing poverty. Similarly, other direct transfers, including soldier disability payments, free schoolbooks, and uniforms are effective in reaching the poor but also make very small contributions to poor households. Given the expansion of the Samurdhi program beginning in 2015, it would be interesting to see whether the expansion has made a substantial difference.

In contrast, spending on indirect subsidies increased from being more than twice the amount spent on direct transfers in 2009 to being more than five times the amount spent on direct transfers in 2012, with a large part of the resources benefiting nonpoor households. Indirect subsidies are equalizing because these benefits are large relative to the incomes of the poor. However, they are quite an inefficient use of resources, because they benefit higher-income groups more than they benefit the bottom of the distribution.

Finally, the analysis found that in-kind transfers in the form of education and health are equalizing. Education spending has the largest redistributive impact, in line with other developing-country studies. This is partly due to high enrollment rates in primary and secondary education. Similarly, health expenditures are progressive and equalizing, but the amount of spending is woefully low.

Going forward, any efforts to reform taxes could usefully include distributional analysis. Should the government wish to consider a tax reform, a distributional analysis of alternative scenarios could shed light on the impacts of alternative ways to increase tax collection while protecting poorer groups.

Given the leakages to nonpoor households benefiting from indirect subsidies, their impact on poverty alleviation is limited. In contrast, social assistance spending through direct transfers to poorer groups has a greater impact on poverty. Investing a share of the spending on the larger indirect subsidy programs into direct transfer programs—with a focus on targeting vulnerable groups—could have important impacts on poverty and inequality.

Ideally, any reduction in indirect subsidies or increase in VAT would need to go hand in hand with the strengthening of benefit targeting through improved methodologies for determining eligibility and consistency in implementation. Direct transfer programs, if well targeted, are typically cost-

effective and could substantially improve the effectiveness of direct transfers in reducing poverty and inequality. Ideally, the consolidation of existing fragmented programs and moving toward a consolidated, targeted, more-generous program could have a greater impact on poverty alleviation.

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