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Social Incidence of the General Sales Tax in Pakistan

Saadia Refaqat

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Prepared by Saadia Refaqat[1]

Authorized for distribution by Henri Ghesquiere

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Abstract

> The views expressed in this Working Paper are those of the author and do not necessarily represent those of the IMF or IMF policy. Working papers describe research in progress by the author and are published to elicit comments and to further debate.

This paper analyses the social incidence of the general sales tax (GST) in Pakistan. The main finding of the study is that contrary to widespread perception, the social incidence of the GST in Pakistan is slightly progressive. The main reason for this counterintuitive result is that most items heavily consumed by the poor are exempt from GST in Pakistan.

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I. INTRODUCTION

The rise of the value-added tax (VAT) around the world has been one of the most important tax development of recent times. This tax is considered to have advantages compared with other taxes, because it eliminates cascading, allows for zero rating of exports, and is broad based and difficult to evade.

In Pakistan, the Sales Tax Act of 1990 was passed by the parliament. This led to the imposition of a slightly modified version of VAT, known as the general sales tax (GST), in November 1990. The GST was initially levied only at the import and manufacturing stages. Fundamental amendments were made to the original Sales Tax Act in 1995 as a result of which the GST was really imposed in the true sense of a VAT.[2] The Sales Tax Act of 1990, as it stands today, imposes a sales tax, at the rate of 15 percent, on imported goods and on the value added at each stage from production, through the retail level, on goods manufactured or sold in Pakistan. According to the constitution of Pakistan, the federal government can impose the sales tax only on goods; thus, on several services,[3] the sales tax is imposed by the provinces but collected in combination with the central sales tax on goods and is administered as if it were within the federal sales tax. In addition to this, the federal government also levies excises in sales tax mode on some services, with the revenues being counted under the sales tax.

This paper is the first study undertaken to specifically analyze the incidence of GST in Pakistan. The paper tries to answer the key question whether the sales tax in Pakistan is regressive and, if so, to what extent. This question is important given the paramount importance of the sales tax among all taxes in Pakistan and because of equity considerations—in particular, the government's goal of poverty reduction.

The common perception regarding the GST of Pakistan is that it is regressive—not because there is substantive empirical evidence to prove this but because consumption taxes are generally regressive. The evidence presented in this paper does not support this hypothesis.

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[2] This included the replacement of the traditional administrative structures by separate functions of audit, assessment, enforcement, arbitration, and monitoring. In addition, domestic sales tax collection was transferred from Central Excise Collectorates to the newly established collectorates for the sales tax.

[3] These include services provided by hotels, caterers, clubs, agents, radio and television advertisements, couriers, beauty parlors, laundries, and dry cleaners. In certain cases, such as telephone and transportation services by rail and air, central excises are imposed.

II. METHODOLOGY

A. Statutory Versus Economic Incidence of a Tax

Economists have long acknowledged the difference between statutory and economic incidence of a tax. This acknowledgment stems from the acceptance that those who are required to pay a tax may not necessarily be those who actually end up paying for it. Statutory incidence refers to those who are legally expected to pay a tax whereas economic incidence refers to those who suffer a reduction in their real purchasing power due to the imposition of tax. From the point of view of distribution of wealth and poverty, the economic incidence of a tax is paramount, even though the statutory incidence is much easier to establish. Following [Selden and Wasylenko (1992)], [Younger (1996)], and [Sahn et al, (1999)], in order to identify the economic incidence, I make one key simplifying assumption i.e. the household that consumes a particular item pays for the GST levied on that commodity.

B. Progressive Versus Regressive Incidence

A tax is considered progressive if the share in the proceeds of the tax that emanates from poor households is smaller than their share in income or consumption of the total population. It is termed regressive if the share of tax proceeds coming from poor households is larger than their share in income or consumption and the incidence is considered proportional if the share of tax payments across all households is equivalent to their share of income or consumption.

C. Incidence—Relative to Lifetime or Annual Income?

Should we rank households from poor to rich based on their annual or their lifetime income? There is no denying that incidence differs if we take annual or lifetime income as our basis. It is well documented that household income measured over a longer horizon tends to be less variable than annual household income. Accordingly, it is quite possible that households in the lowest income deciles in any given year may be in a higher income decile in other years, and vice versa for the richest decile. However, household consumption from year to year is more stable than annual income, and therefore more closely related to lifetime income.

Lifetime income incorporates two considerations that annual income outlook overlooks. First, it takes into account common patterns of lifetime earnings, asset accumulation, and consumption. Second, and more importantly, lifetime income, spread as it is over a longer time period reduces the impact of variability in annual earning due to unemployment or changes in family status.[4] Thus, if households base their spending on their expected lifetime income, then consumption in a given year is a better proxy for lifetime income. The dispersion of consumption among households in a given year is smaller than that of annual income for which inequality is greater. Accordingly, it has been observed that a simple

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[4] Poterba, 1989.

broad-based VAT appears regressive when viewed relative to some measure of current income but proportional when viewed relative to consumption (see for instance OECD (1988) for an incidence analysis of Denmark, Netherlands and Sweden,[5] and Davies et al. (1998) for an analysis of sales and excise taxes in Canada). Another reason for choosing expenditure for measuring lifetime incidence is that it is more closely correlated to household wealth or "permanent income" compared to current income [Alderman and Higgins, (1992)].

However, despite strong reasons in favor of conducting incidence analysis with respect to expenditure or lifetime income I will also present incidence results with respect to annual income,[6] so that readers can compare both outcomes.

D.   Data, Assumptions, and Other issues

Calculating Household Consumption

This paper uses the Household Integrated Economic Survey (HIES) section of the Pakistan Integrated Household Survey (PIHS) 2001–2002 for analysis. My sample from the HIES survey consists of 14,713 households. The income and expenditure section of the PIHS comprises four categories of expenditures i.e. fortnightly, monthly, and annual (durable and nondurables). Since all four expenditure categories are mutually exclusive I will use these to calculate each household's total annual expenditures. However there is one caveat; inclusion of durable consumption items requires very specific knowledge of the exact year of purchase, of depreciation rates (which should ideally differ by item) and of usage levels, but this information is virtually impossible to come by. In order to get around this problem following [Johnson et al (1989)], and [Younger et al (1999)], I assume that the GST is paid only on the "Use value" of the item during a given year. Thus, instead of using data on the purchase of durable goods (Section 6-M part E of HIES portion of the survey), I use the current market value of the respective item (section 7-M of HIES portion of the Survey) and assume that in each given year 10 percent of the total value of that item is consumed.

Identifying Consumer Items Subject to GST

Taxable items from the HIES were identified[7] using the 6th Schedule of exemption of the Sales tax Act. This information was used to calculate the total taxable consumption for each household (extrapolated at the annual level). I then apply the 15 percent GST rate to calculate the annual GST burden per household and per decile. An interesting finding worth pointing out is that there is little variation across deciles in total taxable as a percentage of total

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[5] Ebrill , Liam, Micheal Keen et al 2001, pp 109.

[6] Incidence analysis based on income might still be relevant to the extent that consumption by wealthy households is underreported in surveys or where wealth is transferred to the next generation through inheritance.

[7] See Annex I for details regarding these items.

consumption and income, particularly when the households are ranked according to their consumption. For most of the deciles this figure is in the region of 25 percent and this is definitely surprising since this represent a fairly flat ratio of taxable with respect to consumption for all deciles while it is commonly believed that the households in the lower deciles are taxed more heavily.

A look at the taxable items distribution within various categories of consumption can help clarify this paradox. Ninety percent of the annual durable expenditure items are subject to GST tax but only 20 percent of the fortnightly items, with monthly item 53 percent and non durable annual expenditure 33 percent. Low-income households consume fortnightly items heavily but GST exemption on 80 percent of these items prevents the ratio of taxable over total consumption from rising far above 25 percent. Equally, higher expenditure on durable items and monthly 4000 category items[8] by the upper decile households (see Table 1) prevents the ratio from dropping far below 25 percent..

Table 1. Share of Taxable Consumption as Percentage of Total Consumption*

Deciles	Fortnightly	Monthly (female)	Monthly (male)	Annual Nondurable	Annual Durables**
First	0.29	15.00	2.45	5.50	0.41
Fifth	0.73	13.50	2.10	6.10	0.82
Tenth	1.50	10.00	7.17	4.74	4.50
GST Taxable (percent) 1/	20.00	54.00	52.00	33.00	90.00

Notes:
* When households are ranked according to their consumption;
** 10 percent per annum use value for the durable item.

1/ This ratio shows the percentage of GST taxable items within each consumer expenditure category according to HIES questionnaire.

Incidence Calculation

In a first exercise, I carry out the incidence calculation by ranking the various households according to their consumption as a proxy for lifetime income. This method is preferable because there is strong empirical support for the fact that annual household incidence analysis is very sensitive to the mobility of households between deciles and thus not a good measure for incidence analysis see e.g. [Poterba (1989)], [Krueger (1988)], [Hill (1981)] and

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[8] Certain monthly household expenditure items are covered in the female questionnaire (2000 category) while others are exclusively in the male questionnaire (4000 category). This difference exists because certain items such as monthly food items, personal care articles, cleaning articles are more likely to be purchased by the female member of the household while expenditures on items such as tobacco products, servants salary, traveling and recreation, reading articles are likely to be carried out by the male members of the household.

[Davies and others (1984)]. In the second exercise, I repeat the whole analysis when households are ordered with respect of their total current income.[9]

In a third exercise, I also examine the incidence for individual commodities, including cigarettes, gas (cylinder), gas (pipe), kerosene oil, cooking oils,[10] petrol/ diesel consumption, electricity, lawyers, and doctors services.[11] It must be kept in mind that the individual commodity analysis has no bearing on the overall incidence results. I only analyze these to look at the incidence of individual commodities themselves particularly those that form a substantial share within the total consumption of the poor households or those items, whose taxing is generally portrayed in the media as regressive. Moreover, the individual analysis also allows me to analyze the probable incidence of a particular good or service that is not yet GST taxed but has the potential to be brought into the GST net in the future e.g. services of doctors and lawyers. For the sake of consistency I freeze the households in the same deciles according to their earlier ranking, once with respect to total consumption and then with respect to the current income). Thus, even though the total sample has 14,713 households, which allocates approximately 1,471 households to each decile and an individual category such as cigarettes has only 4,841 households consuming it, each one of these households will retain its place in the original decile used for the overall analysis.

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[9] Income for a household is calculated according to the Federal Bureau of Statistics definition of income. According to this definition, a household obtains income from nine different sources, namely, wages and salaries, crop production, livestock, property (including owner occupied houses), social insurance benefits (including pensions), gift and assistance, remittances both domestic and foreign, and other sources. Each source has its own complicated method for calculation, which sometimes appears repetitive and is not that transparent. But, despite these shortcomings this income definition was used because it is the official definition.

[10] This category does not include butter oil (*desi ghee*).

[11] See Appendix II for relevant Household Integrated Economic Survey (HIES) codes and sections details for these commodities.

Table 2. Social Incidence of General Sales Tax in Pakistan

| Deciles 1/ | Households Ordered According to Their Current Consumption | | | | | Households Ordered According to Their Current Income | | | | |
| | Average Annual Consumption | Average Annual Income | Average Annual Taxable | Incidence Lifetime | Incidence Annual | Average Annual Consumption | Average Annual Income | Average Annual Taxable | Incidence Lifetime | Incidence Annual |
	(In Pakistani rupee)					(In Pakistani rupee)				
1st (Poorest)	28,937	33,385	6,762	0.0351	0.0304	43,881	22,418	10,104	0.0345	0.0676
2nd	41,212	43,099	9,648	0.0351	0.0336	44,822	35,579	10,192	0.0341	0.0430
3rd	49,445	50,030	11,556	0.0351	0.0346	52,253	43,907	11,908	0.0342	0.0407
Poverty Line 2/										
4th	57,301	58,038	13,403	0.0351	0.0346	58,998	52,252	13,520	0.0344	0.0388
5th	65,461	69,078	15,239	0.0349	0.0331	66,831	61,311	15,596	0.0350	0.0382
6th	74,758	76,715	17,452	0.0350	0.0341	76,459	72,232	18,204	0.0357	0.0378
7th	86,191	89,840	20,578	0.0358	0.0344	86,532	85,774	20,752	0.0360	0.0363
8th	102,180	106,159	24,988	0.0367	0.0353	100,304	105,301	24,752	0.0370	0.0353
9th	129,130	141,499	32,417	0.0377	0.0344	127,974	139,709	32,861	0.0385	0.0353
10th (Richest)	248,675	272,065	69,432	0.0419	0.0383	225,249	315,352	63,589	0.0423	0.0302

1/ Each decile contains approximately 1,471 households.

2/ The official poverty line for 2000–01 is set at PRs 748.56 per capita per month or, equivalently, $12.84 per capita per month.

III. RESULTS

A. Overall Incidence Result

My overall findings according to Table 2 (when households are ranked according to their total consumption) reveal that the poorest 1,471 households in the sample during 2001–2002 consumed, on average, goods and services worth PRs 28,937 per annum (equivalent to $471) or $0.19 per capita per day).[12] The richest 1,471 households in the sample during the same time period consumed goods and services worth of PRs 248,675 per annum (equivalent to $4,048 or $2.77 per capita per day). Note that, according to the official poverty line of Pakistan of 2,350 calories per adult per day or per capita expenditure of PRs 746 or $12.80 per month,[13, 14] the first three deciles in the sample fall below the poverty line. The main finding of Table 2 is that the incidence irrespective of whether calculated on the basis of lifetime consumption or the annual incidence appears to be slightly progressive. The GST lifetime incidence ranges from 3.5 percent for the lowest decile to 4.2 percent for the highest decile. In fact, it appears more progressive for the three highest decile households with regard to the lifetime incidence. As for the annual incidence, the progressivity is concentrated in the poorest and richest deciles.

However, Table 2 also presents incidence analysis when households are ordered according to their current income. With this composition, I find that the poorest 1,471 households during 2000–01 on average consumed goods and services worth PRs 43,881 per annum (equivalent to $714) or $0.28 per capita per person) and the richest 1,471 households had an average consumption of PRs 225,249 per annum (equivalent to $3,666) or $2.51 per capita per day). I still find the first three decile of my sample falling below the poverty line. However, with this ordering, although lifetime incidence appears to replicate the previous pattern very closely, the annual incidence changes dramatically and appears regressive. In particular, the incidence of the poorest decile households is now 6.7 percent and that for the households in the richest decile is only 3 percent. As mentioned, the annual incidence is very sensitive to mobility of households between deciles and is thus not a good choice for the longer term incidence analysis. Note that the savings ratio of the richest decile drops from 29 percent to 9 percent when the ranking is done in terms of consumption rather than income.

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[12] PRs/US$ exchange rate of 61.43 was used for 2001–2002 and 1998 population census household size of 6.8 for the poorest decile (source: Economics Survey 2002–2003). I assume a household size of 4.0 for the richest decile for this calculation.

[13] Source: Economic Survey 2002–2003, pp. 48.

[14] A conversion equivalent scale factor of 6.3 was used calculate the poverty line equivalent per household monthly expenditure.

Table 3. GST Incidence for Individual Commodities
(with households ordered with respect to consumption)

| Decile | Cigarettes | | Cooking Oil | | Gas Cylinder | | Gas Pipe | | Kerosene Oil | | Legal Services (expected) | | Medical Services 1/ (expected) | | Petrol/ Diesel Consumption | | | | | | Electricity | | | |
| | | | | | | | | | | | | | | | Both 2/ | | Direct 3/ | | Indirect 4/ | | No subsidy 5/ | | Lifeline subsidy only 6/ | |
	a	b	a	b	a	b	a	b	a	b	a	b	A	B	a	b	a	b	a	b	a	b	a	b
1st (Poorest)	0.82	0.71	0.83	0.72	0.60	0.52	0.87	0.76	0.19	0.16	1.32	1.14	0.05	0.04	0.12	0.11	0.15	0.13	0.12	0.10	1.05	0.91	1.04	0.90
2nd	0.67	0.64	0.80	0.76	0.57	0.54	0.69	0.66	0.17	0.16	0.92	0.88	0.03	0.03	0.12	0.12	0.12	0.11	0.12	0.11	0.89	0.85	0.89	0.85
3rd	0.61	0.60	0.80	0.79	0.50	0.50	0.64	0.64	0.16	0.16	1.65	1.63	0.03	0.03	0.12	0.12	0.15	0.14	0.11	0.11	0.81	0.80	0.80	0.80
4th	0.55	0.54	0.75	0.74	0.53	0.52	0.60	0.60	0.16	0.16	2.01	1.98	0.03	0.03	0.13	0.13	0.30	0.30	0.10	0.10	0.78	0.77	0.78	0.77
5th	0.49	0.47	0.71	0.67	0.43	0.41	0.56	0.53	0.14	0.13	1.41	1.34	0.03	0.03	0.15	0.14	0.48	0.46	0.11	0.10	0.74	0.70	0.74	0.70
6th	0.46	0.45	0.71	0.70	0.36	0.35	0.51	0.50	0.13	0.12	1.21	1.18	0.06	0.06	0.15	0.14	0.48	0.47	0.11	0.10	0.72	0.70	0.72	0.70
7th	0.40	0.38	0.63	0.60	0.39	0.38	0.48	0.46	0.13	0.13	1.24	1.19	0.05	0.05	0.18	0.17	0.55	0.53	0.10	0.10	0.73	0.70	0.73	0.70
8th	0.38	0.36	0.60	0.57	0.35	0.34	0.42	0.41	0.12	0.12	1.25	1.20	0.05	0.05	0.23	0.22	0.73	0.70	0.10	0.10	0.71	0.68	0.71	0.68
9th	0.35	0.32	0.51	0.47	0.30	0.27	0.37	0.33	0.11	0.10	1.53	1.39	0.04	0.04	0.28	0.26	0.72	0.66	0.09	0.08	0.65	0.60	0.65	0.59
10th (Richest)	0.22	0.20	0.32	0.29	0.19	0.17	0.25	0.23	0.05	0.05	1.25	1.14	0.04	0.04	0.60	0.54	0.93	0.85	0.05	0.05	0.67	0.61	0.67	0.61
N	4,841		3,565		1,396		5,935		279		4,008		11,670		2,123		10,196		11,039		11,039			

Notes: N=number of observations; a=refers to lifetime incidence calculation; and b=refers to annual incidence calculation.

1/ Assuming first-three-decile, fourth-decile, and fifth-decile households consume 30 percent, 40 percent, and 50 percent of their medical services, respectively, formal providers. See the sub-section on "Medila Services Consumption" in Section III.A.

2/ Includes households that consume petrol/diesel directly and those that consume public transportation.

3/ Includes households that consume petrol/diesel only directly.

4/ Includes households that consume only public transportation.

5/ When subsidy is removed for all consumers.

6/ Assuming that the subsidy exists only for the lifeline consumers and the rest of consumers pay GST on electricity.

Table 4: GST Incidence for Individual Commodities
(with households ordered with respect to current income)

Decile	Cigarettes		Cooking Oil		Gas Cylinder		Gas Pipe		Kerosene Oil		Legal Services (expected)		Medical Services 1/ (expected)		Petrol/ Diesel Consumption — Both 2/		Direct 3/		Indirect 4/		Electricity — No subsidy 5/		Lifeline subsidy only 6/	
	a	b	a	b	a	b	a	b	a	b	a	b	A	b	a	b	a	b	a	b	a	b	a	b
1st (Poorest)	0.59	1.15	0.79	1.56	0.51	0.99	0.82	1.60	0.14	0.27	3.58	7.01	0.14	0.28	0.24	0.47	1.90	3.73	0.09	0.18	0.99	1.93	0.98	1.92
2nd	0.63	0.79	0.76	0.95	0.43	0.54	0.71	0.89	0.15	0.19	1.86	2.35	0.10	0.13	0.12	0.15	0.24	0.30	0.10	0.13	0.85	1.07	0.85	1.07
3rd	0.58	0.69	0.77	0.92	0.50	0.59	0.56	0.67	0.20	0.24	2.57	3.06	0.08	0.09	0.11	0.13	0.13	0.16	0.10	0.12	0.78	0.93	0.78	0.93
4th	0.51	0.58	0.70	0.79	0.50	0.56	0.64	0.73	0.14	0.16	1.48	1.67	0.07	0.08	0.13	0.15	0.29	0.33	0.11	0.12	0.76	0.85	0.75	0.85
5th	0.49	0.54	0.73	0.79	0.43	0.47	0.57	0.62	0.14	0.16	1.73	1.89	0.06	0.07	0.14	0.15	0.39	0.43	0.10	0.11	0.73	0.80	0.73	0.80
6th	0.43	0.45	0.67	0.71	0.45	0.47	0.52	0.55	0.15	0.16	1.86	1.97	0.06	0.06	0.16	0.17	0.57	0.61	0.11	0.11	0.74	0.78	0.74	0.78
7th	0.42	0.43	0.63	0.64	0.36	0.37	0.46	0.46	0.12	0.13	1.52	1.53	0.05	0.05	0.21	0.22	0.76	0.76	0.11	0.11	0.72	0.72	0.72	0.72
8th	0.38	0.36	0.57	0.54	0.34	0.32	0.42	0.40	0.11	0.10	1.09	1.04	0.05	0.05	0.26	0.25	0.77	0.73	0.10	0.10	0.70	0.66	0.70	0.66
9th	0.32	0.30	0.49	0.45	0.34	0.31	0.38	0.35	0.09	0.08	1.52	1.39	0.05	0.04	0.34	0.32	0.90	0.82	0.09	0.08	0.70	0.64	0.70	0.64
10th (Richest)	0.24	0.17	0.34	0.24	0.19	0.14	0.27	0.19	0.05	0.03	1.17	0.84	0.05	0.03	0.60	0.43	0.98	0.70	0.05	0.04	0.69	0.49	0.69	0.49
N	4,841		3,565		1,396		5,935		279		4,008		11,670		2,123		10,196		11,039		11,039			

Notes: N=number of observations; a refers to lifetime incidence calculation; and b refers to annual incidence calculation.

1/ Assuming first-three-decile, fourth-decile, and fifth-decile households consume 30 percent, 40 percent, and 50 percent of their medical services, respectively, formal providers. See the sub-section on "Medila Services Consumption" in Section III.A.

2/ Includes households that consume petrol/diesel directly and those that consume public transportation.

3/ Includes households that consume petrol/diesel only directly.

4/ Includes households that consume only public transportation.

5/ When subsidy is removed for all consumers.

6/ Assuming that the subsidy exists only for the lifeline consumers and the rest of consumers pay GST on electricity.

B. Results: Individual Commodity Analysis

Results for the individual commodities are presented in Tables 3 and 4. Whereas the calculations for most of the commodities are straightforward, special discussion is warranted for petrol/diesel consumption, electricity, and expected incidence for medical services. Looking at Table 3 for both the GST incidence using lifetime and annual income (when households are ordered according to their total consumption), I find it to be regressive for cigarettes, cooking oil, gas cylinder, gas pipe, kerosene oil, electricity and expected incidence for medical services. The progressivity holds only for petrol consumption (both direct and indirect cases) while the expected incidence on medical services consumption appears to be proportional. The expected legal services consumption analysis appears to be inconclusive because of the small sample size (only 1 percent of households in this sample report consuming this service). Amongst the regressive cases the ones that stand out are cooking oil and specifically kerosene oil, which are consumed predominantly by the poorest households, although overall, the analysis did not turn out to be regressive when all items are included.

Petrol/ Diesel Consumption

In order to analyze the impact of GST taxation on petroleum products, I started with the HIES portion of the survey labeled "Petrol/diesel charges, lubricants and oils etc. consumption" (section 6-M, part C, HIES portion of the survey). However, this captures only the incidence of petroleum products directly purchased by households but in reality only 14 percent of the households in the sample own a car/motorcycle and those who own it are generally better off. I therefore also analyze the '*indirect effect*' of the GST component of the price of petrol/diesel that is reflected in the cost of local transportation which affects many more households, including the poor. In order to capture this "indirect effect," I use the section labeled "expenses on traveling by road" (section 6-M, part C, HIES portion of the survey). I assume that 20 percent of the cost of public transport reflects the cost of petroleum/ diesel price.[15] The case that concerns us most from the point of view of 'hurting the poor' is the 'indirect effect' and the 'both effects' together. My results in Table 3 show that the indirect effect' of the GST incidence appear to be regressive But when we look at the 'both effects' together and the 'direct effect' the incidence appears to be progressive.

Electricity Consumption[16]

Presently, the GST on electricity does not really affect households because the amount of GST included in the consumer bills is not paid by the consumers, but by the Ministry of Finance to the Water and Power Development Authority (WAPDA). In a first exercise, I analyze the incidence of the GST in the event the subsidy were to be eliminated for all

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[15] Normally petroleum inputs in the transport sector lie around 0.20 in the input-output table.

[16] For the sake of simplicity it is assumed that all households purchase electricity from WAPDA. It is a fact that this sample includes those households (but a very small number) as well which purchase electricity from Karachi Electricity Supply Company (KESC), thus facing a different tariff structure.

households. As a variation, I also analyze the situation when the subsidy would remain for lifeline consumers only.[17] In order to analyze the first case I first calculate the electricity subsidy liability of every household (which generally depends on their monthly electricity bill) and than I calculate the total electricity bill for the household inclusive of the GST liability. While analyzing the case of restricting the subsidy to the lifeline consumers I need to identify the lifeline consumers. In order to do that I use the May 10, 2003 Gazette notification of National Electric Power Regulatory Authority (NEPRA)[18] which has the following residential rates for the lifeline consumers:

	Energy Charges Ps/kW/M	F.A.S Charges Ps/kWh	Addi. Surcharge Ps/KWh	Total
Up to 50 units	----	61	73	1.34 PRs/kWh

Now on a monthly basis, by definition a lifeline household's expenditure on electricity cannot exceed PRs 67.[19] I use this to identify the lifeline consumers and in my sample 4 percent of the total households are lifeline consumers. Thus, when analyzing the case of restricting the subsidy to the lifeline consumers, I add the calculated required payable subsidy amount back into the bill for the rest of the households thus making an implicit assumption that in this case except for lifeline consumers everybody else pay their own GST on electricity. Results reported for both of these cases in Tables 3 and 4 present a surprising finding. Although both the cases (either of no GST subsidy for any household or subsidizing only the lifeline consumers) appear to be regressive but there appears to be no difference in the magnitude of regressiveness for households across deciles!

In order to understand this I look at the distribution of the lifeline households across various deciles, my prior expectation is that 90 percent of the lifeline consumers will lie predominantly in the first three poorest deciles. But this is not what I found. Looking at Table 5, we can see that lifeline consumers are also present significantly within the middle deciles and more than 10 percent are lying in the upper four deciles.

Table 5. Electricity Lifeline Consumers: Distribution Across Various Deciles
(In percent)

Deciles	1st three Deciles	4th–6th Decile	7th–9th Decile	10th Decile	Total
A/	55	31	13	1	100
B/	53	30	15	2	100

A/ when households are ordered according to their consumption and B/ when the are ordered according to income.

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[17] Lifeline consumers are those who do not consume more than 50 units of electricity per month.

[18] Source: Economic Survey 2002–03.

[19] 50 units * 1.34 Rs/kWh = PRs 67 p.m.

This is very surprising and It is very hard to say why this distribution is such since one would expect both the higher income or consumption households to consume more electricity not just 50 units per month and having the lifeline consumers within higher consuming households does not really make sense and the only plausible explanation for this seems to be either the households in the higher deciles are under reporting their electricity consumption or not paying their electricity dues accurately.

Medical Services Consumption

Medical services are currently exempt from the GST. Analyzing the incidence of GST on medical services in the event the GST was extended to medical services is quite complicated. In order to identify the households consuming medical services I use the item codes 5602, 5603 and 5604[20] (in section 6-M, Part D, HIES portion of the Survey) which indicate that 27 percent of households in my sample consume medical services in one form or the other. Note that these categories comprise informal medical services consumption (e.g. hakeems, midwives etc.) as well as the formal medical services. As a result in order to make the analysis more realistic I try to determine the incidence for the case where only formal medical services would be subject to GST. For this exercise I assume that the first three deciles (that are the poorest) consume only 30 percent, fourth and fifth decile consume 40 percent and 50 percent formal medical services respectively that could be targeted under the GST. Incidence analysis of medical services appears to be proportional but this needs to be interpreted very cautiously because of the implicit simplifying assumption involved. However, standard advice and practice is to exempt basic health service because of some externalities of some kind in health care warrant some subsidization[21].

C.   Results with Income Ordering of Households

Repeating the overall analysis (Table 4) when households are ordered according to the current income, leaves the overall results broadly unchanged both with the lifetime and the annual income incidence analysis. As for the per commodity analysis, the only difference appears to be in the intensity of incidence, which appears to be more regressive for regressive cases.

IV.   Sensitivity Analysis

In order to check the robustness of the findings of this paper, I eliminated the outliers from the data set. In a first sensitivity analysis (the overall result is reported in Table 7 and individual commodity analysis is reported in Table 8 and 9, Appendix III), I remove outliers on the basis interval based on the total average consumption per decile when households are ordered according to their total consumption and current income when ordering is of income. For first

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[20] 5602: Medical fees paid to doctors, specialists, hakeem/midwives outside hospital, including medicine etc. 5603: Hospitalization charges, including fee etc. for doctor/hakeem laboratory tests, x-Ray charges. 5604: Dental care, teeth cleaning, extraction, charges, eyeglasses, and all other.

[21] Ebrill and others (2001), pp 94.

exercise (which is reported), outliers are removed using the per decile interval value of ($\mu \pm 2\sigma$) and for my second sensitivity analysis I use a broader interval value of ($\mu \pm 5\sigma$). The outliers removed using this procedure are reported in Table 6.

Table 6. Outlier Households Removed

	1st Decile	9th Decile	10th Decile
$\mu \pm 2\sigma$			
Lifetime income analysis	61	28	76
Annual income analysis	199	...	34
$\mu \pm 5\sigma$			
Lifetime income analysis	...	...	4
Annual income analysis	118	...	8

It is worth pointing out that during the sensitivity analysis the lifetime income incidence remained stable and new findings are very close to the ones reported earlier. However, the same can not be said for the annual income incidence which has altered drastically. The annual income incidence for the poorest decile came down to 4.9 percent (from 6.7 percent), and that for the richest decile to 3.3 percent (from 3.8 percent) thus reducing the regressivity of annual incidence dramatically.

All this seems to support that lifetime incidence is a better reflector of GST incidence since it is neither sensitive to the ordering of households nor to the removal of outliers.

V. GST Projection for 2001–2002

It maybe insightful to compare the actual GST collection for 2001–2002 with the projected value of GST for 2001–2002 based on the overall findings of this study. The HIES household sample for this study contains 14,713 households which pay on average GST of PRs 3,322 per annum. With total population of Pakistan in 2001–2002 estimated at approximately 146 million[22] and an average household size of 6.5, the total number of households is estimated at approximately 22 million. Using this figure, the projected GST for entire population for 2001–2002 is PRs 73,084 million. By contrast, the actual GST calculation for 2001–2002 stood at PRs 166,300 million. Thus my projected GST value is around 44 percent of the actual collected GST for 2001–2002.

Two good reasons may explain this shortfall from collection. First, since I use 'use value' of durable consumption and by doing this I assume that only 10 percent of the durable item are consumed each year, this would induce downward bias in my calculations. Second and more important is that this study analyzes the incidence at the household level but not all GST items are consumed by the households e.g. intermediate inputs. If we look at the item wise GST calculated in 2001–2002, almost 50 percent of the items that contribute 80 percent of the GST revenues for that year were in fact intermediate inputs e.g. sugar (boggasse and molasses),

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[22] Economic Survey, 2002–03, pp. 179.

cement, iron & steel products, LPG, power looms etc. just to name a few. Thus, my projected GST will fall short of the actual collected GST receipts since this paper is analyzing incidence at the household level only.

VI. CONCLUSION

It must be remembered that progressivity of a tax is not all that matters when one is evaluating it; the tax's economic efficiency, administrative efficacy, and revenue-raising potential to finance government expenditures also matters. Still "progressivity" does hold critical importance within the sphere of political debate where "hurting the poor" can be a slogan used to derail the process of reforms. Under such conditions, the progressivity of a tax can help policy makers win critical partners and allies to continue with the process of reforms.

My results do indicate that the GST lifetime incidence for Pakistan appears to be progressive, and this also holds true for the annual incidence of GST except for one case—that is when households are ranked according to their total current income. The main factor behind this progressiveness appears to be the pattern of GST exemption. It is very important to note that the lifetime incidence withstands the test of household mobility between deciles as well as the sensitivity analysis. Thus, one must accord lifetime incidence analysis greater importance than annual incidence analysis; and if the policies have a longer time horizon, then lifetime incidence matters most. I therefore find GST taxation to be progressive overall, notwithstanding regressivity for some important individual items.

I. HIES Items List and GST Taxable Status

FORTNIGHTLY ITEMS LIST	
Milk (fresh & boiled)	Exempt
Lassi (butter milk)	Exempt
Milk (packed by milk plants)	Exempt
Milk, Powdered (for adults & children)	Exempt
Butter, Margarine, Cream	GST Taxable
Cheese	GST Taxable
Curd/ Yogurt	GST Taxable
Ice cream, Kulfi	GST Taxable
Other like ferni, kheer, condensed milk, etc.	GST Taxable
Beef	Exempt
Mutton	Exempt
Chicken Meat (fresh, frozen)	Exempt
Eggs	Exempt
Other poultry Birds (ducks, quail, turkey etc.)	Exempt
Fish (frozen, fresh, dried)	Exempt
Prawns, Shrimps or Crabs (fresh, frozen, dried)	Exempt
Bananas	Exempt
Citrus fruits (Mosummi, Malta, Kinno, etc.)	Exempt
Apple	Exempt
Dates	Exempt
Grapes	Exempt
Melon (Water, Garma, Sarda)	Exempt
Guava	Exempt
Other fresh fruits	Exempt
Canned fruits	Exempt
Raisin, Dates, Apricot	Exempt
Potato	Exempt
Onion	Exempt
Tomato	Exempt
Cabbage, Cauliflower	Exempt
Karaila, Lady finger, Bringai, Cucumber	Exempt
Tinda, Pumpkin, Bottle Gourd	Exempt
Radish, Turnip, Carrot	Exempt
Peas, Moongra	Exempt
Other (Green chilies, Tural, Lettuce, Kulfa, etc.)	Exempt
Canned vegetables	GST Taxable
Salt Simple (rock and sea	Exempt
Salt (Iodized)	Exempt
Chilies, red	Exempt
Turmeric, Coriander seed	Exempt
Ginger	Exempt
Garlic	Exempt
Cinnamon, Caraway, Cardamom	Exempt
Salan Masalah/ Other spices	Exempt
Sugar (Desi or Milled)	Exempt
Gur/ Shakkar	Exempt

I. HIES Items List and GST Taxable Status (Continued)

Honey (fresh or processed)	Exempt
Confectionery (Toffee, Chocolate, Chewing Gum)	GST Taxable
Barfi, Jaleebi, Halwa and others	Exempt
Glucose, Energile, etc.	GST Taxable
Carbonated beverages	GST Taxable
Squashes & Syrups (not medicated)	GST Taxable
Sugarcane juices, other fresh juices	Exempt
Fruit Juices (packed), Mineral water, etc.	GST Taxable
MONTHLY ITEMS LIST	
Wheat and Wheat flour	Exempt
Rice and Rice flour	Exempt
Maize, Barley, Jawar and Miller (Whole and Flour)	Exempt
Suji, Maida, Besan	Exempt
Other cereal products (e.g. corn flakes, noodles, etc.)	GST Taxable
Gram Whole (Black & White)	Exempt
Dal Chana	Exempt
Mash	Exempt
Moong	Exempt
Masoor	Exempt
Other (Achar, chick/pigeon/garden peas, sunflower, soybean)	Exempt
Desi Ghee	Exempt
Vegetable Ghee	GST Taxable
Cooking Oils	GST Taxable
Other Oil & fats	GST Taxable
Tea (black, green, loose & packed)	GST Taxable
Coffee	GST Taxable
Other (ovaltine, harlics, Milo, Complan, etc.)	GST Taxable
Biscuits (sweet & Saltish)	GST Taxable
Bread, Bun, Sheermal	Exempt
Cake, Bakerhani	Exempt
Tandoor Roti, Nan, Kulcha, Puri and Paratha	Exempt
Other backed products (Pakoras, Samosas, Qatlama, popcorn, etc.)	Not GST Taxable
Jams, Marmalades, etc.	GST Taxable
Tomato Ketchup/pulp	GST Taxable
Pudding, Jelly, etc.	GST Taxable
Pickles Chatni, etc.	GST Taxable
Vinegar, Yeast, Ice, etc.	GST Taxable
Food and Grain milling/grinding charges	Exempt
Fire wood	Exempt
Kerosene Oil	GST Taxable
Charcoal	Exempt
Coal hard & peat	Exempt
Dung cake (dry)	Exempt
Gas (pipe)	GST Taxable
Gas (cylinder)	GST Taxable
Electricity	GST Taxable
Match box, Candles, Mantle, etc.	GST Taxable
Beggasses, Ag. Wastes etc.	Not GST taxable

I. HIES Items List and GST Taxable Status (Continued)

Bath/Toilet Soap	GST Taxable
Shampoo	GST Taxable
Hair oil & creams, hair tonic & color, Facial cream & powder etc.	GST Taxable
Toothpaste & powder, Brush, Miswak	GST Taxable
Cosmetics such as nail polish, perfumes, lipstick, lotions etc.	GST Taxable
Hair cutting & dressing etc.	Exempt
Beauty parlor services	GST Taxable
Dry cleaning, washing, dying, darning	GST Taxable
Laundry soap, bleaching and other	GST Taxable
Household cleaning articles like cleaners, bloom etc.	GST Taxable
Paper napkins, wax papers and other paper articles	GST Taxable
Cigarettes and lighters	GST Taxable
Biri	GST Taxable
Tobacco Raw	GST Taxable
Pan prepared	GST Taxable
Pan leaves	GST Taxable
Katha, Choona	GST Taxable
Betel nut	GST Taxable
Sonf, Suparee	GST Taxable
Chewing Tobacco & Snuf	GST Taxable
Tickets for cinemas, musical concerts, lottery tickets etc.	Not GST Taxable
Rent for TV/VCR/Video cassettes, CD's etc.	Not GST Taxable
Newspapers, magazine, novel, books etc.	Exempt
Petrol/Diesel charges, lubricants & oil, puncture	GST Taxable
Expenses on traveling by road (bus, ruckshaw etc.)	Not GST Taxable
Expenses on traveling by train	Not GST Taxable
Other traveling charges like tonga, camel, donkeys, etc.	Not GST Taxable
Wages and Salaries paid to servants	Not GST Taxable
Telephone, telegraph, postal, fax, E-mail, and Internet etc.	GST Taxable
Storage, safe deposits and locker etc. charges	Not GST Taxable
Pocket money to children	Not GST Taxable
Expenses on maintenance of pets, poultry and fish (for home use)	Not GST Taxable
ANNUAL NON-DURABLE ITEMS LIST	
Woolen cloth, Cotton cloth, Mixed (nylon)	GST Taxable
Wool for sweaters, socks, shawls, gloves	GST Taxable
New ready-made & second-and garments	GST Taxable
Burka, chadar, Ajrak etc.	GST Taxable
Clothing supplies (thread, needles, pins, buttons, zipper etc.)	GST Taxable
Tailoring, embroidery, alternations etc. charges	Not GST Taxable
Footwear made of leather, synthetic or other material	GST Taxable
Repair charges of footwear, Polishes, shoe shining etc.	Not GST Taxable
Brief case, hand bags, watch straps, belts etc.	GST Taxable
Imitation and plastic Jewelry & ornaments	GST Taxable
Gloves, handkerchief, scarves, hats, muffs	GST Taxable
Repair charges of personal effects (watches, clocks, glasses etc.)	Not GST Taxable
House rent (market value)	Not GST Taxable
Subsidized house rent (market value)	Not GST Taxable
Rent free accommodation (market value)	Not GST Taxable
Owner occupied accommodation (market value)	Not GST Taxable

I. HIES Items List and GST Taxable Status (Concluded)

Summer Cottage rent	Not GST Taxable
Minor repairs/ maintenance & redecoration/addition/alteration	Not GST Taxable
House and Property tax	Not GST Taxable
Other expenses (insurance, commission paid, water etc.)	Not GST Taxable
Crockery & Cutlery for daily use	GST Taxable
Earthware (ghara, sorahi etc.), Glassware, Plasticware etc.	GST Taxable
Other household effects (bulbs, tubes, battery cells etc.)	GST Taxable
Purchase of medicines & vitamins, medical apparatus etc.	Exempt
Medical fees paid to doctors, specialists, hakeem/midwives etc.	Not GST Taxable
Hospitalization charges, including fee for doctors/hakeem etc.	Not GST Taxable
Dental care, Teeth cleaning, extraction, charges, eye glasses etc.	Not GST Taxable
Expenditure on hobbies, Cable installation, recreation membership	Not GST Taxable
Annual license fees (TV/VCR/dish Antenna)	Not GST Taxable
Annual license fee for arms etc.	Not GST Taxable
Annual registration, tax, insurance, driving license, cars etc.	Not GST Taxable
Expenditure by Air	GST Taxable
Other Expenses on tyre, tube, spare parts	Not GST Taxable
School/College fee and private tuition fees	Not GST Taxable
Books and exercise note books/copies, stationary	Not GST Taxable
Hostel Expenses	Not GST Taxable
Other education expenses (bags, transportation)	Not GST Taxable
Stationary supplies such as pen, pencils, pins etc.	GST Taxable
Fine, birth/marriage taxes and pet keeping taxes	Not GST Taxable
Expenditure on food and soft drink on various functions	Not GST Taxable
Legal expenses (not related to business)	Not GST Taxable
Insurance Premium such as fire, travel insurance.	Not GST Taxable
ANNUAL DURABLE ITEMS	
Refrigerator	GST Taxable
Freezer	GST Taxable
Air Conditioner	GST Taxable
Air Cooler	GST Taxable
Fans	GST Taxable
Geyser (Gas & Electric)	GST Taxable
Washing Machine/dryer	GST Taxable
Camera (still) & Movie	GST Taxable
Cooking stove	GST Taxable
Cooking Range, Microwave oven	GST Taxable
Heater	GST Taxable
Bicycle	GST Taxable
Car/Vehicle	GST Taxable
Motorcycle/Scooter	GST Taxable
TV	GST Taxable
VCR, VCP, Receiver, Decoder	GST Taxable
Radio/cassette player	GST Taxable
Compact disk player	GST Taxable
Vacuum cleaner	GST Taxable
Sewing/Knitting Machine	Exempt
Personal Computer	Exempt
Others	GST Taxable

II. Relevant HIES Codes for Individual Commodity Analysis

Commodity	Codes	Section
Cigarettes	4101	6-M, Part C
Cooking oils	2302,2303,2304	6-F, Part B
Gas cylinder	2707	6-F, Part B
Gas pipe	2706	6-F, Part B
Kerosene oil	2702	6-F, Part B
Legal service	5903	6-M, Part D
Medical service	5602,5603,5604	6-M, Part D
Petrol/diesel		
Direct	4301	6-M, Part C
Indirect	4302	6-M, Part C
Both	4301, 4302	6-M, Part C
Electricity	2708	6-F, Part B

III. Sensitivity Analysis

Table 1. Social Incidence of General Sales Tax in Pakistan

Deciles 1/	Households Ordered According to Their Current Consumption					Households Ordered According to Their Current Income				
	Average Annual Consumption	Average Annual Income	Average Annual Taxable	Incidence Lifetime	Annual	Average Annual Consumption	Average Annual Income	Average Annual Taxable	Incidence Lifetime	Annual
	(In Pakistani rupee)					(In Pakistani rupee)				
1st (Poorest)	29,595	34,126	6,941	0.0352	0.0305	36,273	24,259	7,956	0.0329	0.0492
2nd	41,212	43,099	9,648	0.0351	0.0336	44,822	35,579	10,192	0.0341	0.0430
3rd	49,445	50,030	11,556	0.0351	0.0346	52,253	43,907	11,908	0.0342	0.0407
Poverty Line 2/										
4th	57,301	58,038	13,403	0.0351	0.0346	58,998	52,252	13,520	0.0344	0.0388
5th	65,461	69,078	15,239	0.0349	0.0331	66,831	61,311	15,596	0.0350	0.0382
6th	74,758	76,715	17,452	0.0350	0.0341	76,459	72,232	18,204	0.0357	0.0378
7th	86,191	89,840	20,578	0.0358	0.0344	86,532	85,774	20,752	0.0360	0.0363
8th	102,180	106,159	24,988	0.0367	0.0353	100,304	105,301	24,752	0.0370	0.0353
9th	128,707	140,795	32,330	0.0377	0.0344	127,974	139,709	32,861	0.0385	0.0353
10th (Richest)	223,896	249,240	63,257	0.0424	0.0381	220,294	282,693	62,145	0.0423	0.0330

1/ Each decile contains approximately 1,471 households.

2/ The official poverty line for 2000–01 is set at PRs 748.56 per capita per month or, equivalently, $12.84 per capita per month.

Table 2. GST Incidence for Individual Commodities
(with households ordered with respect to consumption)

| Decile | Cigarettes | | Cooking Oil | | Gas Cylinder | | Gas Pipe | | Kerosene Oil | | Legal Services (expected) | | Medical Services 1/ (expected) | | Petrol/ Diesel Consumption | | | | | | Electricity | | | |
| | | | | | | | | | | | | | | | Both 2/ | | Direct 3/ | | Indirect 4/ | | No subsidy 5/ | | Lifeline subsidy only 6/ | |
	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b	a	b
1st (Poorest)	0.81	0.70	0.83	0.72	0.59	0.51	0.85	0.74	0.19	0.16	1.37	1.19	0.05	0.04	0.12	0.11	0.15	0.13	0.12	0.10	0.90	0.78	1.02	0.89
2nd	0.67	0.64	0.80	0.76	0.57	0.54	0.69	0.66	0.17	0.16	0.92	0.88	0.03	0.03	0.12	0.12	0.12	0.11	0.12	0.11	0.77	0.74	0.89	0.85
3rd	0.61	0.60	0.80	0.79	0.50	0.50	0.64	0.64	0.16	0.16	1.65	1.63	0.03	0.03	0.12	0.12	0.15	0.14	0.11	0.11	0.70	0.69	0.80	0.80
4th	0.55	0.54	0.75	0.74	0.53	0.52	0.60	0.60	0.16	0.16	2.01	1.98	0.03	0.03	0.13	0.13	0.30	0.30	0.10	0.10	0.68	0.67	0.78	0.77
5th	0.49	0.47	0.71	0.67	0.43	0.41	0.56	0.53	0.14	0.13	1.41	1.34	0.03	0.03	0.15	0.14	0.48	0.46	0.11	0.10	0.64	0.61	0.74	0.70
6th	0.46	0.45	0.71	0.70	0.36	0.35	0.51	0.50	0.13	0.12	1.21	1.18	0.06	0.06	0.15	0.14	0.48	0.47	0.11	0.10	0.63	0.61	0.72	0.70
7th	0.40	0.38	0.63	0.60	0.39	0.38	0.48	0.46	0.13	0.13	1.24	1.19	0.05	0.05	0.18	0.17	0.55	0.53	0.10	0.10	0.63	0.61	0.73	0.70
8th	0.38	0.36	0.60	0.57	0.35	0.34	0.42	0.41	0.12	0.12	1.25	1.20	0.05	0.05	0.23	0.22	0.73	0.70	0.10	0.10	0.62	0.59	0.71	0.68
9th	0.35	0.32	0.51	0.47	0.30	0.27	0.37	0.34	0.11	0.10	1.55	1.41	0.04	0.04	0.28	0.26	0.72	0.66	0.09	0.08	0.57	0.52	0.65	0.60
10th (Richest)	0.23	0.21	0.35	0.31	0.21	0.19	0.26	0.24	0.06	0.05	1.27	1.14	0.04	0.04	0.59	0.53	0.93	0.84	0.06	0.05	0.59	0.53	0.68	0.61

Notes: a=refers to lifetime incidence calculation; and b=refers to annual incidence calculation.

1/ Assuming first-three-decile, fourth-decile, and fifth-decile households consume 30 percent, 40 percent, and 50 percent of their medical services, respectively, formal providers. See the sub-section on "Medila Services Consumption" in Section III.A.

2/ Includes households that consume petrol/diesel directly and those that consume public transportation.

3/ Includes households that consume petrol/diesel only directly.

4/ Includes households that consume only public transportation.

5/ When subsidy is removed for all consumers.

6/ Assuming that the subsidy exists only for the lifeline consumers and the rest of consumers pay GST on electricity.

Table 3. GST Incidence for Individual Commodities
(with households ordered with respect to current income)

| Decile | Cigarettes | | Cooking Oil | | Gas Cylinder | | Gas Pipe | | Kerosene Oil | | Legal Services (expected) | | Medical Services 1/ (expected) | | Petrol/ Diesel Consumption | | | | | | Electricity | | | |
| | | | | | | | | | | | | | | | Both 2/ | | Direct 3/ | | Indirect 4/ | | No subsidy 5/ | | Lifeline subsidy only 6/ | |
	a	b	a	b	a	b	a	b	a	b	a	b	A	b	a	b	a	b	a	b	a	b	a	b
1st (Poorest)	0.68	1.02	0.76	1.14	0.49	0.73	0.70	1.05	0.16	0.24	4.23	6.32	0.04	0.06	0.12	0.18	0.34	0.52	0.10	0.15	0.77	1.16	0.88	1.32
2nd	0.63	0.79	0.76	0.95	0.43	0.54	0.71	0.89	0.15	0.19	1.86	2.35	0.03	0.04	0.12	0.15	0.24	0.30	0.10	0.13	0.74	0.93	0.85	1.07
3rd	0.58	0.69	0.77	0.92	0.50	0.59	0.56	0.67	0.20	0.24	2.57	3.06	0.02	0.03	0.11	0.13	0.13	0.16	0.10	0.12	0.68	0.81	0.78	0.93
4th	0.51	0.58	0.70	0.79	0.50	0.56	0.64	0.73	0.14	0.16	1.48	1.67	0.03	0.03	0.13	0.15	0.29	0.33	0.11	0.12	0.66	0.74	0.75	0.85
5th	0.49	0.54	0.73	0.79	0.43	0.47	0.57	0.62	0.14	0.16	1.73	1.89	0.03	0.03	0.14	0.15	0.39	0.43	0.10	0.11	0.64	0.70	0.73	0.80
6th	0.43	0.45	0.67	0.71	0.45	0.47	0.52	0.55	0.15	0.16	1.86	1.97	0.06	0.06	0.16	0.17	0.57	0.61	0.11	0.11	0.64	0.68	0.74	0.78
7th	0.42	0.43	0.63	0.64	0.36	0.37	0.46	0.46	0.12	0.13	1.52	1.53	0.05	0.05	0.21	0.22	0.76	0.76	0.11	0.11	0.62	0.63	0.72	0.72
8th	0.38	0.36	0.57	0.54	0.34	0.32	0.42	0.40	0.11	0.10	1.09	1.04	0.05	0.05	0.26	0.25	0.77	0.73	0.10	0.10	0.61	0.58	0.70	0.66
9th	0.32	0.30	0.49	0.45	0.34	0.31	0.38	0.35	0.09	0.08	1.52	1.39	0.05	0.04	0.34	0.32	0.90	0.82	0.09	0.08	0.61	0.56	0.70	0.64
10th (Richest)	0.25	0.19	0.35	0.27	0.20	0.15	0.27	0.21	0.05	0.04	1.20	0.93	0.05	0.04	0.59	0.46	0.97	0.76	0.05	0.04	0.60	0.47	0.69	0.54

Notes: a=refers to lifetime incidence calculation; and b=refers to annual incidence calculation.

1/ Assuming first-three-decile, fourth-decile, and fifth-decile households consume 30 percent, 40 percent, and 50 percent of their medical services, respectively, formal providers. See the sub-section on "Medila Services Consumption" in Section III.A.

2/ Includes households that consume petrol/diesel directly and those that consume public transportation.

3/ Includes households that consume petrol/diesel only directly.

4/ Includes households that consume only public transportation.

5/ When subsidy is removed for all consumers.

6/ Assuming that the subsidy exists only for the lifeline consumers and the rest of consumers pay GST on electricity.

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