Tax reforms in Sri Lanka – will a tax on public servants improve progressivity?

RESEARCH PROPOSAL

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Sri Lanka

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1. **Abstract (100 to 250 words)**

Faced with budget constraints the Sri Lankan government entered an International Monetary Fund Stand-by-Arrangement (IMF-SBA) for USD 2.6bn in 2009. Along with this facility, the government has committed to raising the revenue-to-GDP ratio from 14 percent at present (2009) to 16.9 percent of GDP by 2012. A recently appointed presidential commission on taxation is contemplating taxing the, presently tax exempt, public servants in the country as a means of broadening the tax base and raising revenue. The proposed study uses household income and expenditure data to assess the progressivity and equity considerations of such a change in tax policy in the country.

2. **Main research questions and core research objectives**

The prevailing budgetary context in Sri Lanka has been one of ever increasing government expenditures. Socio-political conditions in the country, particularly considering existing institutions, practices of electoral democracy and the welfare state ideology, have resulted in elected governments continuing to maintain certain services in the public sector. Free education up to tertiary level (including various school welfare programs such as free textbooks, uniforms and mid-day meals), free health services, and various government transfers like Samurdhi are offered by the state. Moreover, the government continues to provide for physical and social infrastructure in order to meet the country’s economic development needs. As deficit-financing was quite extensively practiced by all governments so far, amortization and interest payments on public debt have emerged as another large and rather rigid component of essential annual expenditures of the government. Another way of looking at these issues would be to highlight the large proportion of government expenditure devoted for the compensation of employees in the public sector. All these have been constantly placing strong upward pressures, year after year, on current as well as capital expenditures of the government.
Important factors influencing the country’s fiscal system have undergone change and transformation over the last decade, including the introduction of several ad hoc taxes, but little in terms of expanding the tax base. Despite higher rates, and greater number, of taxes, government revenue to GDP ratio has dropped to 15 - 16 percent over the period 2003-2008, as compared with 20 – 22 percent of government revenue to GDP ratio before 1995. Tax revenues have always formed the bulk (about 90 percent) of government revenue and the revenue decline noted above has largely represented a decline in tax revenues relative to GDP.

The Government’s target is to ensure that the ratio of its revenue to GDP rises up to levels that prevailed in Sri Lanka about 10-15 years ago. The target has been expressed to raise this ratio to a level of around 20 percent by 2016.

One of the key elements of the ongoing tax reforms discussions within the government, and also within the recently appointed Presidential Commission on Taxation 2009, has been the need to expand the tax base. This would include revisiting the various exemptions granted in individual and corporate and income tax. Within this, the current practice of income tax exemption granted to Sri Lanka’s public sector employees has come under particular scrutiny.

Sri Lanka’s public sector employs around 1.1 million of the country’s 7 million strong labor force. This includes public sector officials, parliamentary legislators and other politicians. In a tax policy unique to Sri Lanka, this entire segment is exempt from paying income tax on their emoluments.

When this policy was introduced by late President J.R. Jayawardena in 1978, the initial rationale was that wages of public employees were significantly lower than private sector employees at the time. However, given pay revisions in the public sector in recent years, it has become increasingly difficult to rationalize why this entire group of income earners should be excluded from paying tax, when they utilize public services as much as private
employees do. Thus, this strong contention on equitable tax treatment has sparked an economic debate on the need to revisit this tax-free status.

The vast proportion of non-state sector tax payers resent the exemption of state sector wages from income tax. There is no tax policy justification for such a dichotomous tax treatment.

With continuously high budget deficits, growing pressures on public finances owing to continued welfare spending, infrastructure investments and reconstruction efforts in the conflict-affected North and East the need to broaden the tax base and raise more tax revenue has become a policy priority of the government. The government entered into an IMF Stand-by Arrangement (SBA) for USD 2.6bn this year. Along with this facility, the government has committed to raising the revenue-to-GDP ratio from 14 percent at present (2009) to 16.9 percent of GDP by 2012, i.e. 2 percent over two years. In June this year, a Presidential Commission on Taxation was appointed to investigate what policy reforms are required to achieve this goal.

It is in this context, and particularly considering the need to broaden the tax base and minimize tax exemptions for individuals and enterprises alike, that the debate over tax-free status to public employees has arisen. It is also morally difficult for the government to promote greater tax payer compliance, while maintaining tax exempt status for its own employees. This study hopes to examine the merits and demerits of the proposed tax reform in the hope of assisting policy makers.

Specifically the study aims to find answers to the following questions.

1. How much revenue can be earned by extending the income tax base to cover public sector employees, at the current rates? How will this policy redistribute the tax burden across households (i.e., does this policy lower the inequality of net incomes compared to the earlier policy? How does this affect progressivity and equity?
2. Horizontal Inequity (HI) or the unequal treatment of equals, as is the case in the present income tax system in Sri Lanka, violates the principles of progressivity and income redistribution. How does extending the income taxes to public servants affect horizontal inequity.

3. Literature review and scientific contribution of the research

As explained in the background section, the tax policy in the country has developed over time purely on a needs basis (i.e., the need to increase tax revenue) without taking into consideration equity aspects. Although some studies have examined the incidence of taxes across households for specific taxes (e.g., Coady, D. et al 2006) in Sri Lanka, the distribution of income taxes in the country and their equity are not well understood. The available literature on the efficiency and equity of income taxes in the country are mainly descriptive (see for example, Presidential Commission on Taxation, 2009). This study proposes to use the latest tools and techniques available to assess the distributional aspects of present income tax policy in the country and relative to that the progressivity and equity changes that will come about with the introduction of a new tax policy. In that sense the scientific contribution of the research is mainly empirical. Following section discusses the various approached used in the literature to assess living standards and the methods used for comparing living standards under different tax systems.

Measuring living standards

Using appropriate methods for measuring well-being or living standards is important particularly in studies that aim to assess progressivity and redistribution (Duclos and Araar, 2006; World Bank, 2008, Deaton and Grosh, 2000). The welfarist approach is the most common means used in the literature for measuring well-being. Although imperfect, measuring living standards using this approach is commonly used as it uses observable proxies, such as income and consumption, to measure well-being. The other means of measuring well-being include the basic needs and the capabilities approaches (see Duclos and Araar, 2006), p5 for a discussion on these).
Using the welfarist approach to measure well-being also is not straightforward. First measuring welfare using income or consumption as a proxy is very data demanding. Even when the data is available data may have sampling as well as non-sampling errors. As such, the results may be biased (Duclos and Araar, 2006; Deaton and Grosh, 2000).

Living standards, in classical microeconomics, are most popularly measured by income or consumption. Income refers to household earnings from employment, other economic activities and transfers. Consumption, on the other hand, measures the value of goods and services consumed. Measuring living standards using these two methods can result in important differences. Most common differences include, 1) non inclusion of consumption of goods and services that is not market based, for example home produced goods; 2) the inclusion of durable goods that are used over a period of time; and, 3) The debate over whether income or consumption is better at capturing living standards has been long standing. There are strong arguments for preferring consumption for developing countries (see for example, Deaton and Grosh, 2000; Duclos, Araar, 2006, World Bank, 2008, Deaton and Zaidi, 2002).

The estimated values of total consumption for different locations and households could be different due to differences in prices. For example, the prices of food are lower in rural areas, than in urban areas. Commonly in the literature spatial price indices are used to correct for such differences in prices (Duclos and Araar, 2006; World Bank, 2008; Deaton and Zaidi, 2002). Failure to correct for such price differences may result in incorrect comparisons of well-being.

Another source of bias in comparison of households is the household size and consumption. As our objective is to measure well-being, what matters is the amount of well-being received through consumption, rather than the amount that is being consumed. Depending on the size and the age sex composition of the household the needs of the household varies. Certain adjustments (referred to as equivalent scales in the literature) need to be made to capture these differences, in order to make comparisons across households meaningful. The
literature has used the following basic means of arriving at equivalence scales: a) based on behavioral analysis; 2) based on subjective estimates; and, 3) based on some reasonable arbitrary means (Deaton and Zaidi, 2002). Deaton and Zaidi, (2002) recommends using the third approach.

Assessing tax systems

“The assessment of tax systems draws on two fundamental principles; efficiency and equity. The former relates to the presence of distortions in the economic behavior of agents, while the later focuses on distributive justice”. (Duclos, Araar, 2006: p 127). A tax is said to be progressive if the introduction of a tax redistributed the living standards such that the poor benefit more than the non-poor. In other words, a progressive tax will make the distribution of net incomes more equal than the corresponding distribution of gross incomes. A tax T1 is said to be more progressive than a tax T2 if the corresponding distribution of net incomes N1 is more equal than that of N2 (Duclos, Araar, 2006). The progresivity comparisons usually take two forms: a) tax redistribution (TR approach) and the Income redistribution (IR approach). Progressivity of a tax system using these two approaches is usually assessed by using Lorenz and concentration curves (Duclos and Araar, 2006). In addition to the use of graphical means of assessing tax systems, progressivity indices provide a numerical means of capturing progressivity (Duclos and Araar, 2006) (see methodological section for more details on this).

The literature talks of two main types on equity: vertical and horizontal. In relation to taxes, vertical equity refers to the idea that individuals with greater living standards or socioeconomic status should pay a higher amount of taxes. There are two main approaches to horizontal equity. In the classical approach horizontal equity refers to the equal treatment of equals. However, implementation difficulties in identifying equals and the problems associated with using groupings of ‘near equals’ for analysis has lead to different means of assessing horizontal inequity. An alternate approach to horizontal equity refers to the absence of reranking. That is the belief that a tax should not alter the original ranking of individuals according to their gross incomes (Duclos, Jalbert, and Araar, 2003). The
literature proposes two approaches for assessing classical horizontal inequity and redistribution. These are the change-in-inequality approach and the cost-of-inequality approach (Duclos and Araar, 2006; Duclos, Jalbert, and Araar, 2003).

4. Policy relevance

The government has appointed a presidential commission on taxation to examine means of improving the tax base and increasing tax revenue. One main means of increasing tax revenue considered by policy makers is extending the income tax to public servants, who are currently not taxed. However, there are considerable political economy barriers in moving forwards such a tax reform. Taxing the public servants will be a dramatic policy shift. It will also be a difficult political decision to make. However, if the fiscal benefits of such a change can be clearly identified, and the equity improvements of such a policy change can be clearly demonstrated, then legislators may be convinced more easily.

5. Methodology

Following Younger et. Al. (1999) assuming that workers pay income tax out of their earned incomes and assuming complete inelasticity we estimate the incidence of tax across households, and the increase in government revenue in applying the existing income tax policies on public sector workers. We assume that only public sector workers and formal private sector workers are taxed. Based on these calculations, we can simulate the taxes paid by households when public sector workers are also taxed. We then use the following method to assess how the proposed tax policy change affects inequality and to assess its progressivity.

A tax is said to be progressive if the introduction of a tax redistributed the living standards such that the poor benefit more than the non-poor. Lorenz and Concentration curves are popular tools used by researchers to describe the effects of income distribution and its changes following an intervention. Following (Duclos and Araar, 2006), if gross income is
denoted by \( X \) and the tax associated with that income is denoted by \( T(x) \), the income net of taxes will be given by \( N(X) = X - T(X) \).

The **Lorenz curve** \( L_X(p) \) for gross income is then formally given by:

\[
L_X(p) = \frac{\int_0^p Q(q) dq}{\int_0^1 Q(q) dq} = \frac{\int_0^p Q(q) dq}{\mu_x}
\]

The numerator shows the cumulative incomes received by the bottom \( p \) proportion of the population, while the denominator shows the cumulative incomes of the whole population. \( L(p) \) shows the cumulative percentage of total income held by the bottom \( p \) proportion of the population, when individuals are ranked according to increasing income or living standards values.

The concentration curve graphs the cumulative percentage of a tax against the cumulative percentage of the population, ranked by living standards from the poorest to the richest. More formally, if the gross income \( X \) of a population of \( n \) individuals are arranged in ascending order such that:

\[X_1 \leq X_2 \leq \ldots \leq X_n, \text{ and the taxes paid by the individuals are arranged according to the same ranking, the concentration curve for a tax } T \text{ paid by the bottom } p \text{ proportion of individuals are given by:}\]

\[
C_T(p) = \frac{\int_0^p T(q) dq}{\int_0^1 T(q) dq} = \frac{\int_0^p T(q) dq}{\mu_T}
\]

Where \( C_T(p) \) shows the proportion of total taxes paid by the bottom \( p \) proportion of the population.
In our analysis we will first use the above mentioned graphical means of describing the
distributional effects of net incomes under different taxation policies.

5.1 Progressivity and inequality comparisons

Using Lorenz and concentration curves as defined above one can determine whether a tax is
progressive by using the following rules. The literature gives two main means of assessing
progressivity at the global level. The first is the tax redistribution (TR) approach, and the
second is the Income-redistribution (IR) approach. Using Lorenz and Concentration curves
the following rules can be used to assess progressivity at the global level.

A tax T is TR progressive if:

\[ C_T(p) < L_\lambda (p) \text{ for all } P \in ]0,1[. \]

A tax T₁ is more TR progressive than a tax T₂ if:

\[ C_{T₁}(p) < C_{T₂}(p) \text{ for all } P \in ]0,1[. \]

A tax T is IR-progressive if:

\[ C_N(p) < L_\lambda (p) \text{ for all } P \in ]0,1[. \]

And, a net tax T₁ is more IR progressive than a tax T₂ if:

\[ C_{N₁}(p) < C_{N₂}(p) \text{ for all } P \in ]0,1[, \text{ where } N₁ \text{ and } N₂ \text{ are corresponding net incomes.} \]

5.3 Progressivity Indices

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1 This section follows the techniques introduced in Duclos and Araar (2006).
Although the above mentioned graphical presentations are useful, there use is limited. They do not provide a measure of the magnitude of inequality that can be compared under different scenarios. In this respect, progressivity indices are useful tools as they provide the desired numerical measure of progressivity, vertical equity, horizontal inequity as well as redistributive effect of taxes. We propose to use the following indices as described in Duclos and Araar (2006, p 145) for our analysis:

\[
IT(\rho) = \int_0^1 (L_N(p) - C_T(p))\kappa(P; \rho)dp,
\]

\[
IV(\rho) = \int_0^1 (C_N(p) - L_N(p))\kappa(P; \rho)dp,
\]

\[
RR(\rho) = \int_0^1 (C_N(p) - L_N(p))\kappa(P; \rho)dp,
\]

\[
IR(\rho) = \int_0^1 (L_N(p) - L_X(p))\kappa(P; \rho)dp,
\]

Where \( \kappa(P; \rho) \) is weight dependent on the percentile p and the parameter \( \rho \). Commonly these indices are proposed with \( \rho = 2 \). \( IT(\rho = 2) \) is known as the Kakawani index. This index measures the TR progressivity. \( IV(\rho = 2) \) is known as the Reynolds-Smolensky index. It measures the IR progressivity and vertical equity. \( RR(\rho = 2) \) is known as the Atkinson-Plotnick index, which measures reranking. Lastly, \( IR(\rho = 2) \) measures redistribution.

5.4 Measuring Horizontal equity

The proposed study is directly concerned with issues of horizontal equity. There is already resentment amongst non-public servants about the fact individuals in the public sector who receive similar salaries as them are not taxed. We will use methods introduced in Duclos and Araar (2006, p 147) to measure horizontal equity. As shown by Duclos and Araar (2006,
p 149), the overall redistributive change in inequality resulting from a tax, according to the change-in-inequality approach, can be expressed as:

$$\Delta I(\varepsilon) = I_X(\varepsilon) - I_N(\varepsilon)$$

Where $I_X(\varepsilon) = 1 - \frac{\xi_X}{\mu_X}$. $\xi_X$ is the equally distributed equivalent income for a distribution of gross incomes $X$ and $\mu_X$ is the mean gross income. The index $I_N(\varepsilon)$ is defined analogously.

Decomposing the above we get:

$$\Delta I(\varepsilon) = \frac{I_X(\varepsilon) - I_N(\varepsilon) - (I_N(\varepsilon) - I_N^*(\varepsilon))}{\text{VE}} - \text{HI}$$

where $\bar{N}(p)$ is the expected net income of those at rank $p$ in the distribution of gross income.² The difference of the first two terms (VE) gives a measure of the inequality due to a tax which treats equals equally, which is also a measure of the underlying vertical equity of horizontally-equitable net taxes $X(p) - \bar{N}(p)$. The difference of the last two terms (HI) in the above equation measures the unequal post-tax treatment of those who were equals prior to the introduction of the tax.

An alternate approach, the cost-of-inequality approach, to measure horizontal inequality relaxes the assumption that the average incomes across the distributions $N(p)$ and $\bar{N}(p)$ are the same (Duclos and Araar, 2006, p 149). In this approach the cost of inequality is defined as:

$$\Delta C = C_r - C_N$$

² This expression assumes that the average incomes of distributions $N(p)$ and $\bar{N}(p)$ are the same.
Where \( C_F \) is the cost of inequality subsequent to a flat tax on gross incomes that generates the same level of welfare as the distribution of net incomes, and \( C_N \) is the cost of inequality in the distribution of net incomes. The above expression can be decomposed to show the vertical and horizontal inequity components (see for example, Duclos an Araar, 2006, p 150). These measures can be estimated using DAD software.

### 5.5 Measuring Living standards and socioeconomic status

Any analysis that proposes to assess the distributional impacts of taxing policies must first define a means of measuring living standards. This section describes how we propose to measure living standards.

Following the recommendations of Deaton and Grosh (2000) will use value of consumption as a proxy for measuring living standards in our study. There are three main steps for constructing a measure of living standards using consumption (World Bank, 2008; Dulos and Araar, 2006): a) aggregating different components of consumption, b) making adjustments for price differences, and c) making adjustments for household size and composition. How we will approach these steps are further detailed below.

1) Aggregating different components of consumption:

HIES 2006/07 collects data on weekly consumption of food and drink, these include items bought in the market as well as the value of the items from home production or freely received. The survey further collects consumption information on housing, fuel and light, non-durable goods, service and consumer durables for main household. The consumption values for these items are obtained for the month prior to the survey. The survey further collects consumption information on clothing and textiles for the past six months, and durable household goods such as furniture and electronic items for the past one year. The survey also collect information on expenditures on insurances and income tax, as well expenditures on functions such as weddings and funerals.
First, data on food and non-food consumption will be converted to a uniform reference period. For consumer durables, the value of use for the reference period will be calculated using appropriate methods (for example, methods detailed by Deaton and Zaidi, 2002).

2) Adjusting for cost-of-living differences

In order to construct price indices we will use information available in the HIES on the volume and value of purchases. Following World Bank (2008) we will construct a price index as a weighted sum of price ratios of different commodities:

\[
PI = \sum_k w_k \left( \frac{p^h_k}{p^o_k} \right)
\]

Where \( k \) is a set of commodities, \( w \) is the weight, \( p^h_k \) is the price faced by the household and \( p^o_k \) is the reference price. These indices will be used to correct for price differences across locations.

3) Adjusting for household size and consumption

Following World Bank (2008), we define adult equivalents (AE) in a household as follows:

\[
AE = (A + \alpha K) \theta,
\]

Where \( A \) is the number of adults in the household, \( K \) is the number of children, \( \alpha \) is the ‘cost of children’, and \( \theta \) is the degree of economies of scale. World Bank (2008) following a literature review points to the difficulties in determining \( \alpha \) and \( \theta \). Following Deaton and Zaidi (2002) we will define a value between 0.3 and 0.5 for \( \alpha \) and a value between 0.75 and 1.0 for \( \theta \). The sensitivity of the results for different \( \alpha \) and \( \theta \) values will be examined in the analysis.
3. **Data requirements and sources**

The main source of data is from the Household Income and Expenditure Survey (HIES)-2006/2007 conducted by Department of Census and Statistics. HIES household survey collects comprehensive data from households expenditure on food and non-food items, income received through different sources, household demographic features, education, labor force, as well as community characteristics. This data set is especially useful for the proposed study as it provides rich information on expenditure and income. The sample size of this survey is 21,700 housing units. Further, it covers around 27,000 of employees, of which more than 3,000 (about 12 per cent) are from the public sector. The data indicates that on average public sector employees receive higher earnings (Rs. 14,832) compared to private sector workers (Rs. 7,475).

In addition to this, secondary data on tax rates and revenue collected from various sources by the department of Inland Revenue will be used in the analysis, for making estimates and for validation purposes.

4. **Consultation and Dissemination Strategy**

The proposal will be put forward to the Presidential Commission on Taxation for comments, via its Chairman – prof Lakshman, a re-known economist and advisor to the President. We have already been in touch with Prof. Lakshman and briefed him on the proposed study. We will be constantly in touch with him to obtain feedback on the direction of the research and the need for specific presentations of the results.

We will also seek the observations and responses by the taxation cluster of the National Council for Economic Development (NCED), which consists of members drawn from private and public sector institutions as well as academia.

The results of the proposed study will also be presented at a national conference on taxation, in the context of the new ‘Vision 2020’ economic plan that is currently being prepared by the government. The national conference will be attended by policy makers,
officials of the key revenue authorities in the country, officials of key public expenditure management agencies, interested private sector groups, academics and national and international non-governmental organizations and civil society organizations.

Comprehensive press coverage (both print and electronic) will be solicited to enable wider public awareness of the conference proceedings.

The research article will be published in full, and disseminated widely among key stakeholder groups in Sri Lanka. The key findings will also be published on the IPS institutional website, as well as the new IPS weblog ‘Talking Economics’ (http://ipslk.blogspot.com). This blog contains comment and discussion options and the article based on the results of this study will be open for public commentary and debate. Web feeds from the articles on the IPS weblog are also featured on several Sri Lankan websites and blog aggregators (for example, www.newsrilanka.com). We will use this blog to post regular updates of the research, at key mileposts, in order to solicit public commentary and feedback on the work. Moreover, we intend to create a dedicated forum page that could serve as the focal point for stakeholder dialogue as we conduct the research.

Thus, the findings will be disseminated to a wide audience in various media – TV, print and online.

Two of the members in the team participated in a previous PEP project (No. 10333) titled: “Formula Funding and Decentralized Management of Schools; Has it Improved Resource Allocation in Schools in Sri Lanka?”. The results of this study were well received by the public and the policy makers. The results of the study were published in as a PEP working paper and in the International Journal of Education Development (Aunatilake and Jayawardena (forthcoming) and Aunatilake and Jayawardena (2009). A policy brief prepared based on the findings were distributed among Education ministry officials at the National, Provincial, Zonal and school levels. The results were also disseminated and discussed at a national conference (funded by the PEP network) on
“Improving School Performance through Educational Decentralization” jointly organized by the Institute of Policy Studies and the National Institute of Education (NIE). The findings of the study are also available on the website of the Institute of Policy Studies (www.ips.lk). This conference was attended by educational officials and policy makers at different levels of administration. Based on this study Nisha Arunatilake was invited to give a guest lecture on “Formula Based Funding and Decentralized Management of Schools – Lessons from the Education Quality Inputs Programme” to the students of the post graduate diploma in education management at the National Institute of Education. Nisha Arunatilake and Priyanka Jayawardena were commissioned to prepare a report on “Equitability in Education and Health Services in Sri Lanka” by the Asian Development Bank as part of their technical assistance program to Sri Lanka, partly due to their experience in conducting the earlier PEP study. The results of this second study were shared at an ADB regional meeting with policy makers in Manila this April.

5. List of team members

Nisha Arunatilake (female, over 30) is a research fellow at the Institute of Policy Studies (IPS) of Sri Lanka. She has previous experience in conducting distributional analysis and public finance in Education and Health. She has a Ph.D in economics from Duke University in USA. She has followed a course in Poverty Measurement and Analysis, at the International Development Research Centre, Quebec, Canada, August 30 - September 17, 1999.

Priyanka Jayawardena (female, over 30) is a research officer at IPS. She has previous experience in conducting distributional analysis of public funds. She is experienced in analyzing large-scale data sets. She has a sound working knowledge of statistical package STATA-9.0 and Distributive Analysis Stata Package (DASP Version 1.3). She has a MSc in Statistics from University of Colombo. She is currently pursuing her masters in Economics at the same university.
Anushka Wijesinha (male, 23) is currently a Research Officer at the Institute of Policy Studies. He is also the Research Officer to the Presidential Commission on Taxation. Anushka is knowledgeable on Sri Lanka’s taxation issues through his work for the Commission. He has a BSc in economics from the University College London and a MA in Economics and Development from University of Leeds.

Nethmini Perera (female, 27) is a research assistant at the Institute of Policy Studies. She has some exposure in carrying out basic distributional analysis related to poverty and health expenditure conducted during her undergraduate years. She has a BA in Economics from the University of Colombo. She is currently reading for her MA in Financial Economics at the same university.

6. References


10. Expected capacity building

The mission of IPS is to provide medium to long term economic policy recommendations based on research findings. To our knowledge, the distributional impacts of taxation in the country have not been well studied in the country. There is a renewed interest among policy makers to reform taxation policies in the country to broaden the tax base and to increase revenue. As such from a welfare point of view, it is of importance to have a sound understanding of the distributional impacts of existing and proposed tax policies in the country. A better knowledge in using latest tools and techniques to assess different tax systems would also improve the institute’s capacity to address issues concerning public finance.

Anushka and Nethmini have limited experience in using statistical software and analyzing large data bases and for using statistical packages for making estimates and interpreting results. We hope to use this study to improve their skills in this regard. They will be exposed to the literature on measuring well-being and assessing tax systems. They will get trained in using the consumption approach to measure well-being. They will be taught the
issues concerning aggregating consumption, correcting for special differences in prices and correcting for household size. They will get specific training in constructing Lorenz curves and concentration curve to describe the distribution of income and taxes and the use of progressivity indices for assessing tax systems using DAD and Distributive Analysis Stata Package (DASP) software.

1. As highlighted earlier first challenge for the research team is to measure living standards. Nisha and Priyanka have some experience in this aspect. But, they too have not used the latest methods available for measuring living standards. Nisha and Priyanka will design a set of policies to adopt in measuring living standards based on literature review and availability of data. Based on these Anushka and Nethmini will be trained to analyze the HIES 2006/7 data for measuring living standards. They will be taught to appreciate the importance of using appropriate methods for measuring living standards. Sensitivity analysis will be conducted to examine how the use of different parameters and approaches affect income distribution.

2. The second challenge for the team would be estimate the taxes paid by various households based on the information available in the HIES 2006/07 data and information from the Inland Revenue on the existing and the proposed income tax policies. This work will be carried out jointly by the team. Anushka and Nethmini will consult Inland Revenue officials to validate the results and to ensure their accuracy.

3. Assessing tax systems
Next, we will assess the progressivity and equity under different tax systems using methods highlighted before. The actual analysis will be conducted by Anushka and Nethmini with assistance from Priyanka and Nisha. The sensitivity of the results to various changes in parameters and assumptions will also be examined.

4. Dissemination of results
The results will be disseminated using methods described in section 4.
**Capacity building**

**Nisha** will gain further experience in measuring well-being and applying distributional analysis techniques to evaluate taxation policies in Sri Lanka. She will be more sensitive to the issues concerning measuring well-being and assessing tax systems. She will also gain experience in the use of DASP and DAD software for constructing Lorenz curves and concentration curves and for measuring progressivity and equity. She will also gain experience in the use of new technology (blogs) for disseminating findings.

**Priyanka** has been involved in distributional analysis of public finance in education sector in a previous PEP funded education sector project (Ref No.: 10333) with the guidance of Nisha, using Distributive Analysis STATA package (DASP Version 1.3). Priyanka has also applied distributional analysis for her Masters dissertation which focused on socioeconomic inequalities in malnutrition in Sri Lanka. In this research she decomposes the concentration index to find contributions of socioeconomic inequality. She expects to train other junior members of the team in conducting distributional analysis using the same software and the DAD software. By participating in this project she intends to deepen her knowledge in equity analysis and be more sensitive to the issues concerning measuring well-being and assessing equity.

**Anushka** has a background on taxation policy in Sri Lanka, and relevance of research question in the context of income tax reform and revenue inadequacy issues. He hopes to gain hands on experience in using household-level data for assessing the distributional impacts of public finance by being involved in this project. Based on, his knowledge on the directions taken by the presidential commission on taxation, Anushka will provide background information on taxation policy in Sri Lanka, inputs for designing simulation models and guidance for improving the policy relevance of the study. Anuska will be exposed to the literature, tools and approaches as specified below by been involved in this study.
Nethmini is currently involved in studies concerning environmental issues where environmental financing is identified as a timely researchable area. In this project, under Nisha's and Priyanka's guidance, Nethmini will be carrying out the analysis of household data to assess the distributional impact of taxing policies of the government. Thus, she hopes to learn the theory and tools of conducting distributional analysis (as specified above) and will gain experience in applying them in practice. This first hand knowledge and experience will subsequently enable her to examine the distributional impacts of taxing policies relating to environment sector.


- **Specific tools**: Lorenz curves, concentration curves, measuring progressivity using progressivity indices, and decomposing inequity differences to measure vertical equity, horizontal inequity and redistribution effects.

7. **Any ethical, social, gender or environmental issues or risks that should be noted.**

   Equitable and non-discriminatory treatment in taxation policy

8. **List of past, current or pending projects in related areas involving team members**


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