

An Estimate to Tax Buoyancy of Excise and Customs Duty of Union Budget of India in the Post Liberalisation Period

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Abstract : Excise duty must be paid before the goods are cleared from the factory. Small-scale industries enjoy exemption from excise tax up to the specified value of goods cleared. The two controlling factors in the shifting of a customs duty, then, are the elasticity of demand, and the elasticity of supply. If the demand were absolutely inelastic, then the importer could continue to import as many goods as before, and sell them at a price, increased by the amount of the duty. The average percentage change of 0.513 percent in Customs Duty for 1 percent change in value of exports and imports indicating that the tax buoyancy of Customs Duty for the study period is not high and not as significant as excise duty. Broadening the base of both central and state taxes and keeping the tax structures simple within the administrative capacity of the governments is an important international lesson that has to be taken note of in calibrating further reforms.

IndexTerms - Tax Buoyancy, Excise Duty and Customs Duty, Elasticity of Demand and Supply, regression analysis, demand absolutely inelastic.

I. INTRODUCTION

The two methods of distinction follow quite closely the usages of theoretical writers and of official bureaux. There are important exceptions in some countries. Thus in France the customs duties are not officially classed as indirect *Exceptions in taxes*, but form a class by themselves *official usage*. akin to direct taxes. In the United States at the time of the Civil War the income tax was viewed by the courts as an indirect tax, or at least not as a direct tax in the sense of the Constitution. (Springer v1889) This decision, however, was reversed in 1895 by a bare majority of the same court, which decided that a similar income tax was a direct tax in the meaning of the Constitution. This decision is in accord with the distinction made above.

The principal direct taxes are : the land taxes, building taxes, property taxes, poll taxes, class taxes, income taxes, industry taxes; the indirect taxes : the customs duties (with the exception of the French), internal excise taxes, transaction taxes, most fees and licenses. The inheritance taxes, or death duties, as they are called in England, are not easy to classify. In the first sense they are direct taxes, and in the second they are indirect. This is, perhaps, the only important tax that cannot be easily classified. The inheritance tax wherever it exists is used because it is expedient and without much cost yields a large return. It is levied at a time when the persons paying it are not in position to demand a strong justification. It is sometimes justified on the ground that it compensates for previously unpaid taxes. If this justification holds, then the inheritance tax must be classed as a direct tax. (Seligman 1895)

We may now look at some examples of customs duties. Those of England are particularly instructive. (**Dowelland Hall, 1730**) The term "*consuetudines*" or customs, applied to the duties levied upon imported and exported commodities even before the Magna Charta, bespeaks their antiquity. In the time of the Norman kings, however, trade was insignificant and the duties not very productive. The original duty on wine was one cask from every cargo of between ten and twenty casks, two from twenty or more. What the original duty on wool was is not known. Finally the system settled down to a 5 per cent tax on all imports and exports. Down to 1700, these duties were entirely for revenue purposes and had no intentional protective features. At one time their yield was nearly £1,500,000. The eighteenth century saw a changed policy. Special protective and prohibitive duties were established. This was the policy of the entire century, except during the "long peace" of Walpole, 1722-1739.

II. Basic definition of customs duty

Customs duties are taxes levied upon commodities when they cross the national boundary line, or are admitted within a customs territory, consisting of a combination of countries or of definitely limited parts of countries. Unless a city or town forms an independent sovereignty, taxes levied on goods entering a city are not called customs duties, but *octroi* or imposts, and partake of the nature of excises. Duties upon goods passing from province to province in the same country are likewise not customs duties. Neither are tolls or transit duties charged upon goods passing through the country. Such charges are fees for the ostensible or real service of the government in keeping up roads and bridges, maintaining peace, and allowing transit. (*Bastable*) Customs duties are indirect consumption taxes of practically the same character as excises. Their treatment in a separate chapter is not on account of any actual difference in nature but because of their historical and fiscal importance.

III. The Importance of Incidence of Customs Duties

The principle of shifting and incidence has no more important application to any part of a revenue system than to customs duties. To the uninformed it has appeared that the importer has simply added the amount of the duty to the former price, and that the consumer consequently has borne the burden. The problem of shifting, however, does not permit of such a simple solution. The underlying principles of shifting and incidence, discussed in the preceding chapter, apply as much to customs duties as to any other form of revenue.

IV. Elasticity of Demand and Supply. - The two controlling factors in the shifting of a customs duty, then, are the elasticity of demand, and the elasticity of supply. If the demand were absolutely inelastic, then the importer could continue to import as many goods as before, and sell them at a price, increased by the amount of the duty. Such a situation, however, would rarely exist, and the direction which the shifting will take will depend upon the relative elasticity of demand and supply. More frequently than has been supposed, a part of the burden at least will rest upon the importer. This happens when the price is either not raised at all or raised by an amount equal to only a part of the tax. Consideration will be given to the possibility of shifting import duties in only a few assumed cases.

V. Problems Arise from the Use of Customs Duties

The use of customs duties has developed a number of perplexing difficulties. One of the first to develop was that of smuggling. When a country has a large frontier line, with many possible approaches, it is difficult to prohibit some goods from getting in without the knowledge of the officials. This is especially true of goods of small bulk and great value, such as precious stones. The duty, on a value basis, is likely to be high enough to make smuggling profitable. If such goods are not taxed, a source which is easily able to bear tax burdens is allowed to escape.

VI. Excise duty

Excise duty is imposed on the manufacturer of excisable products and is levied on a wide variety of commodities manufactured in India. This duty is an important source of revenue for the central government.

Rates vary depending on the type of commodity, and even for the same type of commodity the rates often differ depending on circumstances such as end-use and taxability of inputs. Although generally ad valorem, the rates may also be specific or a combination of ad valorem and specific. They are prescribed in the Central Excise Tariff Act and are revised from time to time by the annual Finance Acts or through notifications. Reference to the former Act is required to determine the applicable rate for any commodity in question.

Excise duty must be paid before the goods are cleared from the factory. Small-scale industries enjoy exemption from excise tax up to the specified value of goods cleared. The state governments are also empowered to levy excise duty on a few commodities, such as liquor, if they are not taxed by the central government. Excise drawback is available if the goods manufactured are exported.

VII. The Use of Excise Taxes Presents Various Problems

In framing and administering a system of excise taxes, a number of difficulties present themselves. Not least among these is the problem of making the taxes conform to the principles of justice in taxation. The old diffusion theory held that any tax, if left in the fiscal system long enough, would finally become so diffused and broken up that it would fall with practically an equal burden upon the whole of society. If this were true the only thing necessary to justify excise taxes would be to leave them till their burden became generally diffused. It is largely from this reasoning that the dictum, an old tax is a just tax, arises.

A moment's reflection, however, will show the fallacy of the above conjectures. Suppose a tax be placed upon one particular commodity - tobacco, for instance, and on no others. It is difficult to see how, no matter how long the tax remained in force, it would place a burden of any moment on others than those who were connected in some way with the production or consumption of tobacco. To argue that such taxes conform to justice is to affirm that the amount spent is the best measure of taxpaying ability. Yet there is little relationship between what a person spends and his ability to bear burdens. One man may have a large family and it will be necessary for him to spend his entire income to provide them with necessities, without any added tax burden, while another man with the same means may have no family to support. Each may spend the same amount, yet their taxpaying ability be entirely different.

Classes of Goods Taxed. - The articles upon which the tax shall be levied are an important consideration in connection with excise taxes. In the earlier development of this form of revenue, attempts were made to place the tax upon every class of commodities, so that equality of burden might be secured. It was even considered by many that this form of revenue should replace all other forms. Such a multiplicity of tax bases, especially in modern times, would present such a detail and expense of administration, and be so prejudicial to the peace of mind of industry and individuals that even to suggest such a policy is to augur defeat.

Since, then, some selection must be made in the number and kind of articles upon which the tax is to be levied, the choice of the items becomes a problem of first importance. The amount of revenue expected to be secured from this source, together with the other taxes which are in use, with their incidence, must be considered. If a large amount of revenue is anticipated the tax must be levied upon a different class of commodities than if only a small amount is to be secured.

From the standpoint of justice excise taxes should not be levied upon articles which would place an undue burden upon a class of people that is particularly hard hit by other taxes. It may be considered either that all should have an exemption equal to a minimum of subsistence, or, on the other hand, that every citizen should contribute to the support of the state.

The articles upon which an excise tax would be placed would differ according to the principle adhered to. If it be deemed wise to exempt a fixed minimum, then no tax should be placed upon such necessities as salt, sugar, flour, and other articles in the class of necessities; if, on the other hand, it be held that all should contribute something to the state, no surer method of accomplishing this can be devised than

by placing a tax upon such articles as those just mentioned. If the idea be to make excise taxes provide a sort of progressive element to the tax system, then the levy will be upon objects which enter primarily into the purchases of the richer classes. If the primary object be to secure revenue, with no consideration as to the justice of the incidence, then the objects chosen for the levy would be the class of goods which are considered as necessities by the large middle class of citizens.

In the determination of the rate, where the yield of revenue is the prime consideration, much attention will have to be directed to the elasticity of the demand for the various bases of the tax. The actual results from excise taxes, therefore, because of the many more or less indeterminate factors connected with them, may vary greatly from the anticipations which were in mind at the time of levy.

Although the *Indirect Tax Enquiry Report* (India, 1977) provided a detailed analysis of the allocative and distributional consequences of Union Excise Duties, its recommendations were not implemented for almost a decade until 1986-87. The rationalisation recommendations included conversion of the specific duties into *ad valorem*, unification of rates and introduction of input tax credit to convert the cascading type manufacturers' sales tax into a manufacturing stage value added tax (MANVAT). The interesting part of the reform was that there was virtually no preparation and the introduction of MODVAT was a "learning by doing" process. This was a strange combination of taxation based on physical verification of goods with provision for input tax credit. The coverage of the credit mechanism too evolved over time – it started with items from select chapters on both the inputs side and the output side, where the credit mechanism was based on a one-to-one correspondence between inputs and outputs. It was only by 1996-97, however, that it covered majority of commodities in the excise tariff and incorporated comprehensive credit. Nowhere else in the world can one find VAT introduction so complicated in its structure and so difficult in its operations and so incomplete in its coverage. In fact, the revenue from the tax as a ratio of GDP showed a decline after the introduction of MODVAT.

VIII. Concepts of Buoyancy and Elasticity

Tax buoyancy measures the relationship between historical tax revenue and GDP in terms of proportional increase in tax revenue following one percent change in GDP. On the other hand, tax elasticity measures relationship between tax revenue at a constant tax structure and GDP. If there is no change in tax rates and tax base during the reference period, buoyancy will be same as elasticity. In other words, elasticity of tax is the rate of proportionate change in the tax revenue due to change in GDP while tax buoyancy is the composite of the change in tax revenue due to change in GDP and change in tax rate and tax base.

The estimation of tax buoyancy has attracted the attention of economists of our country when the Finance Commissions appointed by the Government of India during different time period have suggested increasing tax revenue to remove the financial deficits of the country. Dwivedi (1976), Purohit (1978) Dadibhavi (1990), Bhat & Kannabiran (1992) and Upender (1999) tried to estimate buoyancy of different taxes for different states and tried to examine the shift in the buoyancy of tax. But for the union budget no such estimates are available.. The present study is an attempt to estimate the buoyancy of tax revenue particularly the major Indirect Taxes namely; Customs Duty, Excise Duty and Services Tax.

IX. Objective of the study

- To Estimate the Tax Buoyancy of both Excise and Customs Duty of Union Budget of India in the Post Liberalisation Period

Data Source

The study is based on secondary data, i.e., data published by economic survey. For, the data of total tax revenue and major heads of revenue is collected from the RBI website. In our study the data is used from 1990-1991 to 2006-07 for the first two objectives and the third objective related to service tax which was introduced only in the year 1994-95, so data is used from the fiscal year 1995-96 to 2006-07.

X. To Estimate the Tax Buoyancy of both Excise and Customs Duty of Union Budget of India in the Post Liberalisation Period;

A. Regression for Tax Buoyancy of Excise Duty

Another interesting aspect of the study is to find the nature and the extent of impact of regressor **manufacturing in GDP** over the regressand **Excise Duty**, in the context of the influence exercise by **Tax Buoyancy** over the dependent as well as the independent variables. Hence, the data on the **manufacturing in GDP**, **Excise Duty** for the study period has been represented by converting them in to log form for the period under study. On the basis of the data set, a regression equation of the form

$$\log Y = \beta_1 + \beta_2 \log X_2 + e_i$$

where ;

$\log Y$	-	Excise Duty
$\log X_2$	-	manufacturing in GDP
e	-	random error
β_1	-	intercept

β_2 partial regression co-efficient.

The results of the analysis are given in Table 1.

Table-1

Model	Beta	t	Sig.
manufacturing in GDP	.995	41.089	.000

Dependent Variable: Excise Duty

$R^2 = 0.991$

$F = 1688.273$, $P = 0.000$

Source : computed

It is seen that the value of $R^2 = 0.991$ which implies that nearly 99.1 per cent of the variation in the dependent variable is caused by the regressor namely, manufacturing in GDP. Of course, the value of R^2 is appreciably good however; the 'F' ratio is 1688.273 with a corresponding P value 0.000. It means that the 'F' ratio is significant and hence, the proposed regression model can be treated as a good fit for the data.

With regard to the partial regression coefficient, it may be observed that the 't' statistic corresponding to the regressor namely X_2 is equal to the manufacturing in GDP has a significant 't' statistic value with 't' is equivalent to 41.089 and $P = 0.000$, which is significant at 1 percent level and hence it is included in the model. regressions of the form $\log Y = \beta_1 + \beta_2 \log X_2 + e_i$ are used in order to estimate β_2 , which can be interpreted as the tax buoyancy, i.e. the average percentage change in Y for a one percent change in X_2 . The beta (β_2) value equal to 0.995 (table 1) expresses the average percentage change of 0.995 percent in Excise Duty for 1 percent change in manufacturing in GDP indicating that the tax buoyancy of Excise Duty for the study period is very high and significant.

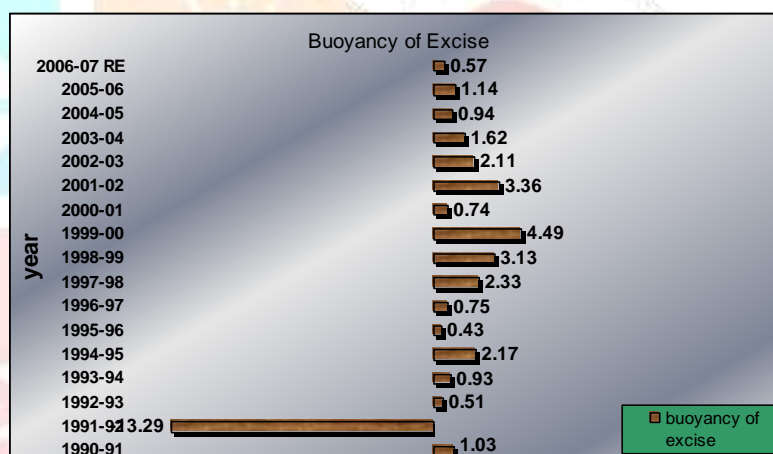


Chart 1

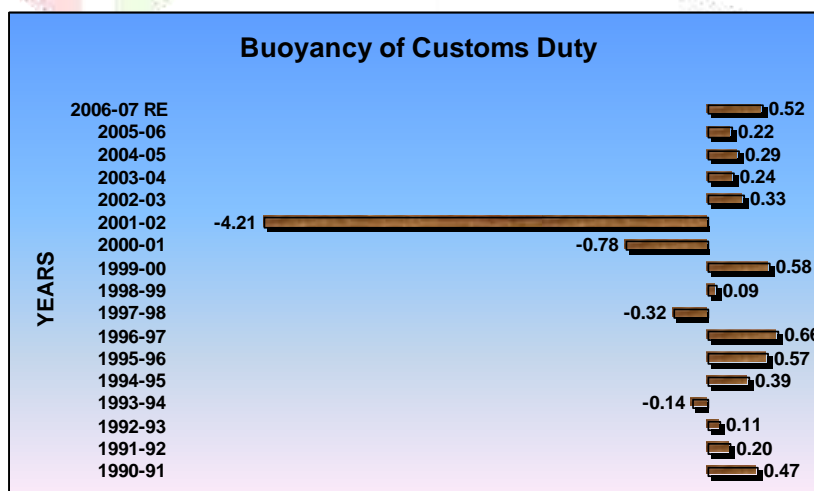


Chart 2

B. Regression for Tax Buoyancy of Customs Duty

Another interesting aspect of the study is to find the nature and the extent of impact of regressor **value of exports and imports** over the regressand Customs Duty, in the context of the influence exercise by **Tax Buoyancy** over the dependent as well as the independent variables. Hence, the data on the **value of exports and imports**, Customs Duty for the study period has been represented by converting them in to log form for the period under study. On the basis of the data set, a regression equation of the form

$$\log Y = \beta_1 + \beta_2 \log X_2 + e_i$$

where ;

logY - Customs Duty
 logX₂ - value of exports and imports
 e - random error
 β₁ - intercept
 β₂ partial regression co-efficient.

The results of the analysis are given in Table 2.

Table- 2

Model	Beta	t	Sig.
value of exports and imports	.513	2.314	.035

Dependent Variable: customs duty

R² - .263

F= 5.354 P=0.00

Source : computed

It is seen that the value of R² - .263 which implies that nearly 26.3 per cent of the variation in the dependent variable is caused by the regressor namely, **value of exports and imports**. Of course, the value of R² is appreciably good however; the 'F' ratio is 5.354 with a corresponding P value equal to 0.000. It means that the 'F' ratio is significant and hence, the proposed regression model can be treated as a good fit for the data.

With regard to the partial regression coefficient, it may be observed that the 't' statistic corresponding to the regressor namely X₂ is equal to the **value of exports and imports** has a significant 't' statistic value with 't' is equivalent to 2.314 and P = 0.035, which is significant at 5 percent level and hence it is included in the model. regressions of the form $\log Y = \beta_1 + \beta_2 \log X_2 + e_i$ are used in order to estimate β₂, which can be interpreted as the tax buoyancy, i.e. the average percentage change in Y for a one percent change in X₂. The beta (β₂) value equal to 0.513 (table 2) expresses the average percentage change of 0.513 percent in Customs Duty for 1 percent change in **value of exports and imports** indicating that the tax buoyancy of Customs Duty for the study period is not high and not as significant as excise duty.

XI. Conclusion and Policy Suggestions

Broadening the base of both central and state taxes and keeping the tax structures simple within the administrative capacity of the governments is an important international lesson that has to be taken note of in calibrating further reforms. Phasing out small scale industry exemptions, minimising exemptions and concession to industries in the services sector, minimising discretion and selectivity in tax policy and administration are all important not only for the soundness of the tax system but to enhance its acceptability and credibility.

Although the customs duties have been significantly reduced, India is still one of the highly protected economies. Further reduction in tariffs as also further unification and nationalisation is necessary. This would certainly entail loss of revenue and there has to be corresponding improvement in the revenue productivity in all the taxes. The reforms in converting the prevailing sales taxes into a destination based consumption type VAT by the states initiated in April, 2005, will have to be carried out with vigor and completed within the next few years. This would require complete phasing out of the central sales tax. Finalising the mechanism to relieve taxes on inter-state transactions and building a proper information system for the purpose, is therefore, extremely important, both to improve the revenue productivity and to improve the efficiency of the tax system.

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