

UNIFORMITY VERSUS SELECTIVITY IN INDIRECT TAXATION*

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1. INTRODUCTION

There are (at least) five groups of arguments which might suggest that indirect taxes should be at a uniform proportionate rate. The first is theoretical and concerns results which show that, under certain assumptions, uniform indirect taxation is an optimum solution in the sense of Pareto efficiency or a combination of equity and efficiency as reflected in a social welfare function. Related results characterise conditions under which movements towards or away from uniformity are welfare improving. The second concerns our ignorance of the information on which theory suggests differential rates of tax should be based. The third group is administrative where it is argued that uniform taxes are simpler to organise and collect, and provide less scope for evasion, than selective taxes. The fourth concerns the role of political and other influences, including unproductive or rent-seeking activities, where, it is suggested, the possibility of non-uniform taxes will lead to considerable opportunities for misuse of the tax system, including expenditure on lobbying by interested parties for special tax treatment. The fifth argues that it is wrong to discriminate between people (and thus goods) on the basis of their preferences.

Most of the arguments in favour of uniformity have some serious content but, it will be argued, their proper evaluation requires an understanding of the assumptions underlying the theoretical results, an involvement with the empirical analysis of household behaviour and tax reform, and finally experience with how policy is formed and taxation administered. Any judgement of the case for uniformity will depend on the country concerned and, in particular, the range of policy instruments available and how they are set and function in practice. We shall suggest that for developed countries the case for uniformity is stronger than for developing countries although even in the former the arguments for

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uniformity fail to be persuasive. Indeed for most developing countries the question is irrelevant since uniformity is not a realistic option where administrative difficulties prevent coverage of a large part of consumption. More interesting is the question of what sorts of taxes should be used and just how much discrimination there should be in indirect taxes; theory and experience do provide considerable guidance on these questions.

The purpose of this paper is to assemble the theoretical results and consider their implications, examine other arguments for uniformity and present some empirical and practical experience in a way which allows a reasoned judgement. Further we shall concentrate on theories which have been designed largely in the context of developed countries. However, the approach and methods lying behind these theories can be of great assistance in the analysis of the tax systems of developing countries. The results themselves will usually be radically altered by changing the assumptions about economic structure and the availability of various tax instruments. Judgements of the relevance of the approach and of particular results will, therefore, depend on the country under consideration including its administrative capabilities.

The focus of the paper is on theoretical results. An assessment of these cannot be divorced from considerations of political economy and experience and some applied studies will be discussed briefly. A thorough survey of empirical work and practical experience relevant to the question of uniformity would be feasible, useful and interesting but it is a major task beyond the scope of this paper.

The next, and main, section, provides a survey of theory relating to the uniformity issue. In the third section we consider briefly the four other arguments listed above. The fourth section contains comments on experience from practical policy and empirical research. The final section provides concluding remarks concerning the appropriate lessons for practical indirect tax systems including the way in which some of the considerations of "political economy" might influence the arguments.

2. THEORY

2.1 Introduction and some preliminaries

This section is devoted to an examination of the results from the theory of optimum taxation and the theory of reform where the central concerns are to characterise the structure of taxation for efficiency, and the structure appropriate for a balance between efficiency and equity. The discussion, at least where developed countries are concerned, is usually conducted in models where departures from optimality arise only from the taxation which is introduced to raise or redistribute resources. Before embarking on this analysis it is important to set it in perspective, both in terms of its point of departure, classical welfare economics, and also in terms of what it leaves out and what sort of model should be chosen. Accordingly in this section we begin with classical welfare economics and discuss how indirect

taxation is introduced, commenting on the definition of uniformity and on model selection. We then emphasise what is usually left out: externalities; merit goods; and monopoly or oligopolistic behaviour. In Section 2.2 we discuss optimal taxation for the case of the single consumer, focusing on Corlett-Hague (1953) and related results concerning departures from or the optimality of uniformity in terms of complementarity and substitutability with leisure. We examine in Section 2.3 the case of many consumers where now the inter-relationship between indirect taxation and income taxation moves to the centre of the stage, together with the structure of preferences. In Section 2.4 we consider restricted taxation and in Section 2.5 departures from the competitive model associated with rationing and show how the use of shadow prices can greatly extend standard results and insights to much more general models. The theory of reform, i.e. the analysis of movements from a *status quo*, is the topic of Section 2.6 and we comment briefly on the relation of the results to trade taxation in Section 2.7. In Section 2.8 we discuss how considerations of "political economy", or the role of power and influence, might relate to the theoretical discussion.

The standard theory of welfare economics tells us first that if there are no externalities a competitive equilibrium is Pareto efficient and, second, that if there are no externalities, if preferences and production satisfy the usual convexity assumptions and if lump-sum taxes and transfers are possible then any Pareto efficient allocation can be decentralised as a competitive equilibrium. The assumptions required for the theorems, particularly the second, are strong but as well as providing a point of departure this simple theory suggests a number of useful and robust lessons. First, it points to externalities as an argument for indirect taxation. Given that different goods yield different externalities this is an immediate argument against uniformity with tobacco, alcohol and petroleum products being very important examples where this consideration is a major element in the setting of rates.

Second, the latter theorem draws attention to the desirability of raising and redistributing revenue in a lump-sum manner where possible. This requires taxes or transfers to be either uniform (and universal) or related to characteristics which can be measured and which are not easily changed (strictly they should be unchangeable). The closest examples are transfers related to family structure; these are common in many countries although it is possible that they may not be lump-sum in so far as they influence family size. These transfers may take different forms. In the UK we have weekly cash transfers, the Child Benefit; in Sri Lanka, India and Pakistan there have been a number of schemes which give food stamps or subsidised rations in relation to family size; and in many countries there are subsidised health and education services which operate in a number of respects like lump-sum transfers. Lump-sum taxes seem to be less common than lump-sum transfers. Indeed real difficulties can arise with lump-sum taxes if they are larger than a person's ability to pay. For example, the poll tax which is currently under discussion in the UK might lead to the disenfranchisement of some individuals (if residence were concealed).

Third, the focus on Pareto efficiency and market behaviour emphasises that in the theory we assume that individuals act in a way which maximises their welfare. Where they perceive incorrectly the value of goods or the goods are deemed to be of inherent moral or social value, or the opposite, there may be a case for subsidy or taxation. The language of merit goods is often used here. Examples include again tobacco and alcohol (as “demerits”) but also preventive medicine and education (as merits). Fourth, the competitive equilibrium assumption indicates that there may be a case for indirect taxation arising from monopolistic practices, markets which are absent or do not clear, or markets where transactions are costly. Such problems are particularly likely where there is asymmetric information. The theory of public policy in relation to these last considerations is less well developed but they should not be forgotten in the concentration on standard models. And there is no presumption that their introduction into the analysis would reinforce the case for uniformity. We may, in some cases, be able to indicate where the balance of the argument lies. For example, if transactions costs and limited markets mean that people save too little we may want to subsidise future consumption through special allowances for, or encouragement of, pensions, i.e. non-uniform treatment of intertemporal consumption.

Notwithstanding its lessons it is clear that the model used in standard welfare economics is not by itself an acceptable basis for policy formation. We then have to decide how to progress from there. Most models of taxation in public economics for developed countries have retained the assumptions of standard theory except for that involving lump-sum transfers and have asked how revenue should be raised by indirect and income taxation in a model which is otherwise of the usual competitive type. We shall follow this literature in this paper but there is also an important alternative approach where one asks about policy intervention in particular models. This is prominent in development economics where models are designed to focus on special features of developing countries. The issues include the balance between agriculture and industry and the role of migration in labour markets — examples are Hornby (1968), Dixit and Stern (1974), Newbery (1974), Heady and Mitra (1986), Braverman *et al.* (1987), Sah and Stiglitz (1987).

The starting point in the recent literature on optimum indirect taxation is Diamond and Mirrlees (1971), which followed in the tradition of Ramsey (1927), Samuelson (1951, 1986), Boiteux (1956) and others. The problem in Diamond and Mirrlees (1971) is posed as the maximisation of

$$W(\dots, v^h(q, r^h), \dots) \quad (1)$$

$$\text{subject to } X(q, r^1, \dots, r^h, \dots) \in G \quad (2)$$

where $W()$ is a Bergson-Samuelson social welfare function, $v^h(q, r^h)$ is the indirect utility of household h as a function of consumer prices q , and lump-sum income r^h , $X()$ is $\Sigma x^h()$ where x^h is the demand function of household h , and G is the public production set (there is no private production). It is further assumed

that r^h is zero for each household. This last assumption rules out lump-sum taxes or transfers and profit income. It is straightforward to show that, under fairly weak assumptions, the optimum should be on the frontier of G and, in this sense, would be efficient. Thus (under standard convexity assumptions) one can think of this optimum being decentralised using producer prices p . Indirect taxes t are then the difference between consumer prices q and the producer prices p :

$$t = q - p. \quad (3)$$

Where there is private as well as public production one can ask whether production taken as a whole should be efficient (so that marginal rates of transformation in public and private sectors should be the same). Generally efficiency will not be a feature of the optimum unless all goods can be taxed and the influence of profits on income distribution can be eliminated (or optimally controlled) either through constant returns and perfect competition or full taxation of profits. Where overall efficiency is desirable prices for private production and for the decentralisation of public production should be the same so that, for example, there should be no taxation of intermediate goods.

In this case the optimum prices satisfy,

$$\begin{aligned} & \underset{t}{\text{Maximise}} \quad V(q) \\ & \text{s.t.} \quad t.X(q) \geq R \end{aligned} \quad (4)$$

where $V(q)$ and $X(q)$ are (1) and (2) with $r^h=0$ each h ; R is a revenue requirement; and producer prices p are treated as fixed in this last maximisation. The problem described in (4) is the prototype of most models of optimum indirect taxation. The revenue requirement R is the loss of the public firm trading at prices p . One can include here a fixed requirement for expenditure on public goods (one can think of fixed costs as part of G , for example).

The solution to (4) is the set of optimum taxes. Given the concerns of this paper we should ask what a uniform tax solution in (4) would be. With r^h equal to 0 the budget constraint for the h th household is

$$q.x^h = 0. \quad (5)$$

This means that whatever the individual buys must be financed by sales of other things, typically labour (we follow the usual convention that supplies by households are negative demands). Then if taxation of all goods is at a uniform rate there is no revenue; since $q = (1 + \tau)p$ implies $\tau p x^h$ equal to 0, from (5), and thus total revenue $\tau p X$ is zero. Notice that τ positive involves a tax on purchases of goods and a subsidy on sales of factors by the household since in the latter case the household receives more than the producer price. From this point of view uniform taxation is not feasible (for $R > 0$) and therefore not optimum. If the story is to be pursued in this model we must take an alternative definition.

The problem described in [(1), (2)] and (4) is homogeneous degree zero in each of the vectors p and q (the latter follows from the homogeneity of V and X and

the former from (5) and the constraint in (4)). Thus we can separately normalise each vector. Typically we choose $p_1 = 1$ and $q_1 = 1$ so that good 1 is numeraire for both producer and consumer prices and is untaxed. The reason we can normalise p and q separately is that p does not affect consumers — note that there are no profit incomes. Where p does affect consumer welfare then we have only one normalisation available on the vector (p, q) and we can choose say $p_1 = 1$ or $q_1 = 1$ but *not* both. To do so would add a real constraint on the problem. Returning to the Diamond-Mirrlees model, if we normalise so that $p_1 = q_1 = 1$ we can then ask whether the optimum satisfies $q_i = (1 + \tau)p_i$ for $i = 2, 3, \dots, n$ and if the answer is affirmative call it uniform taxation. There is an obvious sense in which it is not uniform, however, since good 1 is taxed at a different rate from the others.

Suppose, however, we had defined the problem so that good 2 were both the numeraire and untaxed, i.e. $\hat{p}_2 = 1$, and $\hat{q}_2 = 1$, where prices in this new normalisation are denoted by \hat{p}_i . Since the problem is homogeneous degree zero in p and q , we have not changed anything real and the solutions associated with the two versions of the problem must be the same in terms of physical quantities and relative prices. The solution described as uniform under the old normalisation now becomes

$$\hat{q}_1 = \left(\frac{1}{1 + \tau} \right) \hat{p}_1, \hat{q}_3 = \hat{p}_3, \dots, \hat{q}_n = \hat{p}_n \quad (6)$$

so that the distinctive treatment of good 1 now becomes more explicit. It is important not to confuse the normalisation with genuine results. It is straightforward to show that the question of whether

$$\frac{q_i}{p_i} \approx \frac{q_j}{p_j} \quad (7)$$

in the Diamond-Mirrlees model is independent of the numeraire. Thus whether or not i and j are taxed at the same rate is not affected by choice of numeraire.

The relation between the definition of tax rates (and thus of uniformity) and the normalisation is often overlooked and the convention is to specify that there is a single factor, usually called labour, and choose it to be untaxed. The crucial role of labour in these models is not that it is numeraire or untaxed as such but that there is an endowment of time and this endowment cannot be taxed. As we shall shortly see it will be, for a single consumer, the degree of complementarity and substitutability with the endowed good, i.e. labour/leisure, that will settle the answer to (7) at the optimum. Henceforth we take as our definition of uniformity a common proportional rate on those goods which households demand (as opposed to supply).

Notice that if good 1 is labour then (6) reminds us that a uniform tax on goods is equivalent to a proportionate tax on labour income i.e. raising all prices by 10% is equivalent to reducing take-home pay by 10%. It is clear that if non-labour income r^h is non zero then a uniform tax on goods is equivalent to a propor-

tionate tax on labour plus non-labour income; in practice r^h may be partially taxed through income taxation if it is difficult to distinguish in the tax system different sources of income.

2.2 *The single consumer*

There is a sense in which this model has had more attention than it deserves. For in the one-consumer economy a poll tax should be used to raise revenue in a non-distortionary way and there would be no indirect taxes. The Ramsey indirect taxes which solve (4) for the one-consumer economy are not efficient relative to the poll tax. Hence the analysis of this model should be seen as a bench-mark for comparison, or as a way of fixing ideas, prior to the analysis of the many-person case.

We follow the literature in thinking of good zero as labour (more precisely, minus labour since x_0 is negative corresponding to supply), which is numeraire and untaxed; vectors now have dimension $(n+1)$. Taking a Lagrange multiplier (λ) on the constraint in (4) we have, for the case of a single consumer, the first-order conditions

$$i = 1, 2, \dots, n$$

$$-\alpha x_i + \lambda x_i + \lambda t_i \frac{\partial x}{\partial q_i} = 0. \quad (8)$$

Decomposing the demand derivative into an income and substitution effect and using Slutsky symmetry we have the Ramsey rule (1927) in the formulation due to Samuelson (1951)

$$\sum_{k=1}^n t_k s_{ik} = -\theta x_i \quad (9)$$

(and note that one can show that this also applies for $i=0$, using the budget constraint (5)).

This is often interpreted as saying that the proportional reduction in compensated demand arising from the imposition of taxes should be the same for all goods (t_k being seen as a price change and s_{ik} a compensated quantity response to that change). This interpretation depends on taxes being small, which generally they would not be, and it would be more accurate to say that at the optimum the compensated quantity change resulting from a small uniform intensification of all taxes should be the same for all goods. It is straightforward to show that θ has the same sign as tax revenue and may be interpreted as the benefit (in terms of revenue) which would be available from a marginal switch to lump-sum taxation (see e.g. Atkinson and Stiglitz, 1980, Lecture 12).

A number of authors have examined the structure of indirect taxation associated with (9) in terms of complementarity and substitutability with leisure. For the case where there are two goods and labour, Corlett and Hague (1953) showed

that one should tax more heavily the good that is more complementary with leisure — specifically $\epsilon_{10} > \epsilon_{20}$ implies $t_1 < t_2$ where ϵ_{i0} is the compensated elasticity of good i , at the optimum, with the wage. If $\epsilon_{10} = \epsilon_{20}$ then taxation is uniform. Sadka (1977) generalised this last result to the case of n goods and leisure to show that a uniform tax on all consumer goods is optimum if and only if $\epsilon_{10} = \epsilon_{20} = \dots = \epsilon_{n0}$. This can be readily understood from (9) as follows. Let us see if (9) is consistent with proportional taxation, i.e. $t_k = \gamma q_k$. In this case the left-hand side becomes $-\gamma q_0 s_{i0}$ (using that homogeneity of degree zero of the compensated demand implies $q_0 s_{i0} + \sum_k q_k s_{ik} = 0$) so that $\epsilon_{i0} = q_0 s_{i0}/x_i = \theta/\gamma$ which is independent of i .

A sufficient condition for the equality of these elasticities (see e.g. Deaton and Muellbauer, 1980, p. 128) is that

$$u(x_0, x_1, x_2, \dots, x_n) = W(x_0, F(x_1, \dots, x_n)) \quad (10)$$

where F is homothetic. Thus weak separability of leisure and homotheticity of goods imply that optimum taxation should be uniform (Sandmo, 1976). More generally (Deaton, 1981) one can show that ϵ_{i0} is independent of i (for all prices) if the expenditure function representing preferences takes the form $e(u, q_0, \mu(u, q))$ where q_0 is the wage, q the n -vector of consumer prices for goods and e satisfies the usual homogeneity and concavity conditions in (q_0, q) . To see this we simply differentiate e with respect to q_i to find x_i and then logarithmically with respect to q_0 to find the elasticity with respect to the wage. It is tempting to reverse the process and integrate the condition that $\partial \log x_i / \partial \log q_0$ be independent of i to find this form of the expenditure function to be necessary. But the necessity of the condition of equality of compensated elasticities is not required throughout a neighbourhood, thereby vitiating the integration, and this form of the expenditure function is not necessary for the optimality of uniform taxation (see Besley and Jewitt, 1987). When preferences imply this form of the expenditure function we say that they are implicitly separable (see Deaton, 1981).

The general conditions for uniformity in the one-consumer case are therefore clear in terms of the equality of the compensated cross-price elasticities with the wage. It is remarkable that the earliest paper on the subject, Corlett and Hague (1953), focused immediately on this critical assumption.

Strictly speaking, throughout this and subsequent analysis we should say that uniform taxes satisfy the first-order conditions for optimality. We shall, however, usually make our statements less rigorously and say, where relevant, that taxes should be uniform.

It should also be noted that leisure can be interpreted as non-market time so that the Corlett and Hague result points to the taxation of goods which are complementary with non-market activities including home production.

2.3 Many consumers

With many consumers the Ramsey rule (9) becomes

$$\sum_h \sum_{k=1}^n t_k s_{ik}^h = -X_i (1 - \rho_i) \quad (11)$$

where

$$\rho_i = \left(\sum_h \frac{x_i^h}{X_i} \right) b^h \quad (12)$$

and

$$b^h = \frac{\beta^h}{\lambda} + t \cdot \frac{\partial x^h}{\partial r^h} \quad (13)$$

and β^h is the social marginal utility of income of household h (i.e. $\partial W/\partial v^h \cdot \partial v^h/\partial r^h$). We may, following Diamond (1975), think of b^h as the net social marginal utility of income (net of indirect tax payments) so that ρ_i is a distributional characteristic for good i — it is the weighted average of the b^h for the consumers of the good, the weights being given by the proportion of consumption of the good associated with the h th household. The many-person Ramsey rule may be interpreted as saying that the proportional reduction in compensated demand should be lower the greater is ρ_i , or the more the good is consumed by the “deserving” (as measured by high b^h). An alternative way of expressing the r.h.s. of (11) is as (H times) the difference between the average consumption, \bar{x} and a weighted average x^* where the weights are the b^h 's.

The many-person Ramsey rule includes the second reason for non-uniformity, namely distributional values in relation to the differences in demand patterns across individuals, in addition to the differences in cross-elasticities with leisure already discussed. The special case of separability together with homotheticity (see (10)) is however a case where both considerations point to uniformity because not only are cross-elasticities with respect to the wage equal across goods, but also demand patterns are the same for all individuals so that x_i^h/X_i are independent of i . The importance of differences in demand patterns in influencing differential tax rates will depend on the variation of b^h across households. The term b^h consists of two elements β^h/λ , the welfare weight, and $t \cdot \partial x^h/\partial r^h$, the marginal propensity to pay indirect taxes out of extra income — the first is subjective, incorporating distributional value judgements and the second an objective feature of tax rates and income responses. Where Engel curves are linear and parallel this second term will not vary across households. But if the tax structure is such that the rich (with lower β^h) have a higher propensity to pay taxes on the margin then the negative correlation of the two elements will work to make the spread of the b^h less than that of the welfare weights β^h/λ . Where distributional values are strongly in favour of the poor and the curvature of the Engel curves is small we would expect the welfare weights β^h/λ to be the dominant determinant of the b^h .

These many-person Ramsey results involve a model with indirect taxes only and we should ask how the conclusions might be modified if an income tax is also available. A linear income tax can be introduced simply by adding a poll

tax or grant since a constant marginal rate of income tax is already subsumed in the model (a proportional tax on income is equivalent to raising all prices). The first-order condition for the optimality of the poll tax is clearly

$$\bar{b} = 1 \quad (14)$$

where \bar{b} is the average of b^h (raising the poll tax by one unit has a cost of H in terms of revenue and a benefit through each household of b^h).

One can use (11) and (14) together with assumptions on the form of preferences to characterise conditions under which uniform commodity taxation will be optimum when combined with the optimum poll tax or grant. Atkinson (1977) showed that if everyone has identical preferences, differing only in wage income, and if those preferences can be described by the linear expenditure system then taxes should be uniform. Deaton (1979) generalised this result to show that indirect taxes should be uniform in the presence of the optimum poll tax or grant, where again everyone has identical preferences (differing only in the wage), but now we assume that labour is separable from goods (i.e. the utility function takes the form of (10) but without homotheticity of F) and the goods demand functions have linear Engel curves in terms of income. He also showed that if there exists a separable sub-group for which Engel curves are linear then within this sub-group taxes should be uniform.

Deaton and Stern (1986) generalised the Deaton result to the case where preferences may differ amongst individuals. They considered the case of linear parallel Engel curves for goods, and separable labour. But now the intercepts of the Engel curves vary across households. These intercepts may be linearly related to household composition and have a random term which varies across households. If there is an optimum system of transfers (demogrants) which are linearly related to household composition and if the random term is uncorrelated with the net social marginal utility of income (b^h) then they show that indirect taxes should be uniform. We have essentially the lump-sum grant as before together with demogrants to compensate for the cost of different family structure (assuming this to be uncorrelated with the wage).

Intuitively in these models revenue is raised through indirect taxation to finance the basic lump-sum transfers to households. Notice that the indirect taxes are there for redistributive reasons — in the one-consumer case there would simply be a poll tax and no indirect taxes. The common pattern of marginal propensities to spend and the separability of labour mean that, with the optimum grants providing income support, there are no grounds for discriminating between goods through indirect taxes.

Where a non-linear income tax is available then weaker assumptions on preferences imply indirect taxes should be uniform. Atkinson and Stiglitz (1976) and Deaton (1981) show that with identical preferences (households differ only in the wage) the optimum indirect taxes are uniform. Essentially this means that one can dispense with indirect taxes altogether and operate only an income tax since indirect taxes at a uniform proportional rate act just like a tax on income.

With linear taxation one can view the uniformity results differently and say that one can dispense with the income tax and simply use indirect taxes and lump-sum grants, thus avoiding any requirement to observe household incomes.

How then does our review of the uniformity results for the many-consumer case leave an appraisal of the arguments? We saw that the many-person Ramsey rule points to greater reduction in compensated demands for goods consumed predominantly by the "less deserving". The argument is modified where indirect taxation can finance transfers to households — uniform indirect taxes are optimum provided we have separability of labour and goods, and linear Engel curves. With optimum non-linear income taxation we can drop the assumption of linear Engel curves. We can now see where to focus our empirical enquiries into whether indirect taxes are optimum — we have to look at the functioning of the income support mechanism, the shape of Engel curves, whether variations in demand patterns are correlated with net social marginal utility of income and, as before in the one-consumer case, separability of labour and goods.

Whilst it might be hard to provide convincing empirical refutation of separability (and similarly for implicit separability), the analysis of data on demand should be able to tell us how the consumption patterns of rich and poor differ, including the identification of differences in marginal propensities to consume. And it should be possible to form a judgement on how well the income support system is working and whether it is reasonable to regard an appropriate system of household transfers to be in operation. Where consumption patterns vary sharply across the income spectrum and where the income support system is weak or omits certain poor groups, then the distributional arguments for differentiated taxation will be strong.

2.4 *Restricted taxation*

We have assumed up to this point that the taxes on all goods are set optimally. How will the results be modified if some goods cannot be taxed or the taxes on other goods have to be regarded as exogenous? First we should note that productive efficiency is likely to be violated at the optimum (see 2.1). Where an output of a firm cannot be taxed then we may wish to tax its inputs and thus transactions between firms. In these circumstances marginal rates of transformation between a pair of goods will be different for two firms (they face different relative prices) and production will be inefficient (see, e.g. Newbery, 1986, Stiglitz and Dasgupta, 1971). The inefficiency introduced in this way is balanced against the gains from the surrogate taxation of the final good (see also Munk, 1980). The potential inefficiency will be larger the greater the scope for substitutability between inputs. There is no presumption that the trade-off will yield the same tax rates where substitution possibilities vary between industries. A fundamental contribution to the theory of restricted taxation is the work by Guesnerie (1979 and 1980).

If we now ignore the role of input taxation we retain condition (11) for those goods which are taxed and we can interpret it in the usual way for these goods. One can show, for example, (Deaton, 1979) that if we have a separable sub-group

of goods which can be taxed, if household demand functions are identical and have linear Engel curves for these goods (with respect to the sub-group budget allocation) and if the poll tax or grant is set optimally then this sub-group should be taxed at the same rate.

Where the restrictions on taxation are associated with particular trading structures or types of goods then it will be fruitful to build models dealing directly with the features of the economy that are associated with the restrictions. Some useful examples are amongst the references given in 2.1. The problems of restricted taxation are often of great importance for developing countries where it may be administratively much less costly to tax some goods than others, i.e. there may be convenient "tax handles". In this context there may be little alternative to focussing on these goods if sufficient revenue is to be raised and then the tax structure will be far from uniform. Notice, however, that some tax restrictions will leave production efficiency as desirable for some sections of the economy. For example Diamond and Mirrlees (1971) point out that where production takes place in households it will face consumer prices q rather than producer prices p . Nevertheless efficiency remains desirable, under the usual conditions, for the sector consisting of those firms operating facing p , together with the public producers.

2.5 *Shadow prices*

In the models which we have considered up to now markets are competitive and price adjusts to clear the market. They are "second-best" essentially because non-lump-sum taxation is introduced to raise and redistribute resources. We should ask how the taxation rules are altered when markets function less well, for example when there is rationing. One can show that, in a wide class of cases the optimum tax rules carry over to these more complex models with the simple modification that producer prices are replaced by shadow prices and taxes by shadow taxes, or the difference between consumer prices and shadow prices for consumers and shadow prices and producer prices for producers. For example, Drèze and Stern (1987) show that if the i th indirect tax can be optimally chosen then (11) holds with the modification that t_k is replaced by τ_k^i defined as $(q_k - \nu_k)$, i.e. the shadow consumer tax where ν_k is the shadow price of the k th good (and t is replaced by τ^c in the definition of b^h in equation (13)). The usefulness of the idea of shadow taxes was demonstrated in Guesnerie (1979 and 1980), and see also Mirrlees (1982).

Similarly one can show that the Deaton and Stern (1986) result on the optimality of uniform indirect taxes is replaced in these more general models, using the same assumptions concerning consumer preferences, by the optimality of uniform shadow taxes. Of course, where shadow prices are not proportional to producer prices this will imply that the optimum taxes are *not* uniform.

2.6 Tax reform

Up to this point we have been concerned with the design of the optimum tax structure and have been paying no attention to the *status quo*. In these models the starting point is irrelevant and we move directly to the optimum. There are, however, a number of reasons why this may not be advisable or feasible. It is possible that we may be unable to estimate demand and supply responses far away from the initial position so that the information necessary for confident calculation of the appropriate radical change may be unavailable — in these circumstances it may be sensible to be cautious and move only a small way in using more 'local' information. Or there may be substantial administrative or political costs associated with large changes. Thus as well as the theory of optimality we should also be interested in an analysis which seeks to identify improving directions of reform from some given initial position. Such analysis has come to be known as the theory of tax reform (see e.g. Guesnerie, 1977, Ahmad and Stern, 1984, Drèze and Stern, 1987).

The theories of reform and of optimality are clearly closely related since an optimum is a point from which no improving reform is possible. This may be illustrated using a notion introduced by Ahmad and Stern, 1984, who worked extensively with the notion of the marginal cost λ_i , in terms of social welfare, of raising a unit of revenue through the i th tax where λ_i is defined as

$$\lambda_i = - \frac{\partial V}{\partial t_i} \bigg/ \frac{\partial R}{\partial t_i} \quad (15)$$

where we take the derivatives at fixed producer prices and R is $t.X$. Then if $\lambda_i < \lambda_j$ we should switch on the margin from raising revenue through taxation of the j th good to raising revenue through the i th good. Where all the λ_i 's take a common value, λ , then (15) becomes the familiar condition (11) — note that the numerator is

$$\sum_h \beta^h x_i^h \text{ and the denominator } X_i + t_i \frac{\partial X}{\partial t_i}.$$

One can use this formulation to illustrate a number of results. Consider, for example, a case favourable towards uniform taxation where money incomes are fixed (e.g. exogenous labour supply) so that with one consumer uniform taxation would be optimum (being equivalent to a poll tax). With many consumers we can calculate λ_i at the point of uniform taxation i.e. where $t_i = \kappa q_i$. Then it is easy to see that λ_i is equal to $1/(1-\kappa)$. D_i where D_i is a distributional characteristic defined as $\sum_h \beta^h x_i^h / X_i$.

Thus in the many-consumer economy with fixed incomes, uniform taxation is not optimum and indeed we should move away from it by switching taxation from goods with high distributional characteristics (important in the consumption of the poor, we suppose) to those with low distributional characteristics.

Similarly one can define the marginal cost of raising a unit of revenue from a poll tax λ^{PT} : this is simply $\bar{\beta}/(1-\bar{\delta})$ where $\bar{\beta}$ is the average across households of β^h and $\bar{\delta}$ the average of $t_i(\partial x^h/\partial r^h)$. If λ^{PT} exceeds λ_i then an improving reform is to increase the poll grant (or reduce a tax) financed by an increase in taxation of the i th good. In calculations for India, Ahmad and Stern (1987) did indeed find that $\lambda^{PT} > \lambda_i$ for many goods and for most "reasonable" sets of welfare weights $\{\beta^h\}$. Thus, in the sense required of the theory, an optimum uniform poll transfer is not in operation. And, of course, we would not expect it to be since a large proportion of the Indian population does not receive a poll transfer (in the form of subsidised rations or otherwise) and the scale of transfers for those who receive them is small.

Recently Hatta (1986) and Hatta and Haltiwanger (1986) have also adopted a reform approach and have tried to show that a movement towards improving uniformity will increase welfare for the one-consumer case. It is obvious that this can only be true for *all* moves towards uniformity if the optimum does in fact have uniform taxes. As we saw in 2.2, this can only be so if all the compensated cross-elasticities with the wage are equal (e.g. preferences show implicit separability between leisure and goods). This is a strong assumption and the suggestion that in general moves towards uniformity are improving (in the one-consumer case) is unconvincing. If the assertion is that the optimum is "close to uniform" then that is something that requires careful definition and proof and neither are offered.

The one-consumer case is itself a poor vehicle for discussing uniformity. First, if it were indeed a good model we would have no indirect taxes and simply a poll tax, and second consumers obviously do differ in their consumption levels and patterns. The desirability of moves towards uniformity in the many-consumer case will depend on much the same considerations as influencing the optimality of uniform indirect taxes — Deaton (1987) examines this question explicitly and the answers turn on the optimality of income support schemes, on the linearity of Engel curves and on separability between labour and goods.

2.7 Trade

The standard taxation theories extend in a straightforward way to trade. Essentially one can show that if all final goods can be taxed and trade is at fixed prices (the small-country assumption) then there should be no tariffs and all revenue should be collected from taxes on final goods (see e.g. Dixit and Norman, 1980). This suggests that tariffs should be either for infant industry reasons or because the taxation of final goods (and of income) is very difficult or costly. If tariffs exist for the latter reason then their appropriate level will depend on the degree to which one wants to tax the final goods with which an input is associated, and the patterns of substitutability in different industries (see also Heady and Mitra, 1982 and 1987a). Again there would be no presumption in favour of uniformity. For further

reading in this area see Dasgupta and Stiglitz (1974), Jones and Kenen (1984), Dixit (1985) and Heady and Mitra (1987b).

3. IGNORANCE, ADMINISTRATION AND INFLUENCE

At the beginning of the paper we noted that there were at least five arguments in favour of uniformity. We began with the theoretical arguments which characterize the conditions under which uniformity is optimum. These were treated at length because they are often poorly understood yet provide the crucial analytical background against which other arguments must be judged. It is time now to examine those other arguments. The first concerns ignorance of the basic information required to discriminate, the second the difficulties in administering differential systems, the third the potential for political influence created by differentiation and the fourth whether it is proper to discriminate across people (and thus goods) on the grounds of particular preferences. We take these in turn.

It is commonplace to hear the claim that Ramsay-taxation is all too difficult because we do not know the elasticities. Too often the claim not only is made in ignorance of what the Ramsey theory actually says but also leaves out the crucial basis for differentiation which is excluded from the Ramsey model with its single consumer i.e. equity. An example where both mistakes are made is the recent paper by Harberger (1988) where the equity issue is ignored altogether and, further, he appears to think that the cross-elasticity with labour or leisure is important because it is an example of an untaxed good. As we noted in 2.1 the cross-elasticities with labour or leisure are important because we are trying to tax an endowment of time and not because in the models — particularly Corlett-Hague — labour/leisure is often chosen as an untaxed good. Here Harberger's argument that there are many untaxed goods and we do not know the cross-elasticity with the group is misdirected, although, of course, the question of restricted tax instruments is itself of importance.

Nevertheless the point that we are ignorant of elasticities is a serious one and a more knowledgeable and persuasive version of the argument has been put by Deaton (1981), and particularly (1987). He argues that we cannot expect to find solid evidence which would allow a convincing rejection of the hypothesis that goods are separable from labour or that, in the relevant sense, the Engel curves are sufficiently non-linear to suggest much departure from uniformity. By the relevant sense here we mean after allowing for differences across households other than in income. On the former point, for example, it is suggested, with some justification, that the kind of data on price variation and on individual household information we need in order to identify cross-price elasticities are most unlikely to come together.

There are a number of reactions to this suggestion. The first and most compelling concerns income distribution and direct tax/transfer instruments. Whilst we may have limited knowledge of price elasticities, we do know that different goods are

consumed by the rich and the poor. The poor in developing countries consume very little of air conditioners and private cars, for example. We know further that the direct tax and transfer instruments are generally weak and far from universal. On this basis, and in accordance with the theory, there are therefore strong distributional grounds for higher taxes on goods consumed by the rich.

Second, it is not clear that ignorance implies uniformity. Our ignorance, one supposes, is such that there are a number of null hypotheses which we cannot convincingly reject and it is not clear that uniformity should occupy centre stage. Further there are some things on which our ignorance may not be overwhelming. We might, for example, be more happy with the hypothesis that the complementarity of tinned beans with leisure is less than that for golf clubs with leisure than we would with the null hypothesis that the two compensated cross-elasticities are equal. This, together with the distributional arguments, might help explain why in most countries the tax rate on food is less high than that on golf clubs.

Administrative arguments do weigh in the direction of uniformity. Where groups of goods are taxed at the same rate there is less need for accurate and detailed record keeping. For developing countries in particular, this may be an important consideration. Differentiation makes presumptive methods (e.g. estimating sales) less easy to apply. Where new goods appear then a general classification for tax purposes will be much easier to operate than a very detailed one. Notice, however, that if shops sell close substitutes then the kind of theory we have been discussing would, in any case, suggest similar rates of tax. If elasticities are a major element in the calculation then differential rates may have to be adapted to changes in tastes. Evasion may be easier with differential rates in that shop-keepers may be able to claim that the bulk of their sales are of goods classified under a category with a low tax rate.

These administrative considerations do provide powerful arguments against a myriad of different rates. They would not, however, provide convincing arguments against a VAT with say two rates supplemented with excises on easily identified goods such as tobacco, alcohol, private cars, air conditioners and the like.

Arguments concerning political influence and rent-seeking are less easy to evaluate. On the one hand it might be argued that differentiation gives governments tax handles which are too tempting. Thus they may be tempted to push up taxes on higher goods "too far" or bring "the wrong" goods into the higher rate category. Thus a selective indirect tax system, albeit that it might have a serious basis for differentiation on efficiency or equity grounds, might eventually lead to greater distortions from the temptations it puts government's way than one with a broad base and uniform rate.

There may also be special pleading, lobbying and bribery or corruption by interested groups who attempt to have their goods taxed at special rates. It should be recognised, however, that in most of the models used in Section 2 there is a competitive production sector and there are no pure profits or rents from monopoly positions associated with government regulation, quotas or licences.

In such models there is therefore little scope for directly unproductive or rent-seeking activities. Thus in these models indirect taxation, uniform or differentiated, generates neither pure profits nor activities by firms which seek them. The absence of pure profits, whatever the rate structure of indirect taxation, points to an important difference between taxation measures and those based on firm-specific quotas. To the extent that this aspect of the model is a good description rent-seeking arguments are less important for the discussion of indirect taxation than for other areas of government intervention.

The zero-profits assumption is, however, made for analytic convenience and to focus on the issues of tax structure and efficiency. One must not, therefore, take the models as literal descriptions of the world and it should be recognised that, in the short-run at least, some industries can show pure profits. We would therefore expect to see, and we do, industry representatives or organisations lobbying governments for favourable treatment of their area of activity. At this point in the argument the extent of lobbying activity should be taken as endogenous but it is important to recognise that trade associations are likely to exist with or without uniformity. There will be exemptions, regulations and special excises in most systems, together with marketing, research and training issues so that the trade organisation will have a role independent of the question of uniformity of taxation. One must therefore ask about the marginal affect on lobbying activities of having differentiated as opposed to uniform indirect taxation. If differentiated taxation is allowed the additional resources devoted to trade lobbying may be small.

It would be very interesting to have empirical estimates of the quantity of resources devoted to lobbying in respect of the structure of indirect taxes (as opposed to lobbying in connection with regulations, licences, quotas, permissions and the like). These are rather difficult to come by but I would hazard the guess that they are small. One should ask "Small in relation to what?" and I would suggest that a useful standard of comparison would be the collection costs of taxes. Each tax structure requires resources for its implementation and we could consider those which go into lobbying as part of the implicit cost associated with each type. We may take the revenue and collection costs from tobacco taxes in the UK as an example. The total revenue in 1986 was about £5 billion and if collection costs were, for example, $\frac{1}{2}\%$ (a low figure for most taxes and countries) our standard of comparison would be £25 million. This would be far more than the tobacco industry spends on lobbying against high tobacco taxes (as opposed, of course, to the advertising of individual brands which is another matter).

"Political economy" considerations might also affect the balance of taxes between direct and indirect. Here it seems that the rich are likely to be more effective than the poor in manipulating the direct tax systems to their advantage so that there is a general presumption that the direct tax and transfer system is unlikely to be fully optimum in the sense required for the theorems on uniform taxation. If this is the case then this aspect of political economy, together with concern for distribution, will point to differential taxation favouring goods consumed by poorer groups.

Finally we have the argument that it is wrong to distinguish between people on the grounds of preference either by types of good, or intensity of preference (or “need”) as measured by a low price elasticity. Notice that this argument makes sense only in a many-consumer economy because in a one-consumer model the Ramsey analysis is simply trying to make that consumer as well off as possible and any notion of discrimination across goods being wrong, *per se*, would have little force. It would appear, if it has content, to be an argument concerning discrimination between people. There we come back to the basic social cost-benefit calculus. Each individual is represented in the social welfare analysis embodied in the theory and has a given weight or way of entering the social welfare function. Those weights might be specified in many ways and would not generally imply uniformity except in the special conditions which are identified. The only recourse, if one is to justify this line of reasoning in favour of uniformity, is to assert that the government has no right to discriminate in taxation between those who like marmalade and those who like jam or that individuals have a right to an “undistorted” choice between goods (goods themselves would, presumably, not have any rights to equality). In the end this boils down to an assertion which simply states that differential taxation is wrong and it appears to have little substance

4. HOW FAR SHOULD WE DEVIATE FROM UNIFORMITY?

We saw in Section 2 that in an economy with many consumers, where production is competitive, and where all goods can be taxed the argument for uniformity turns critically on the shape of preferences and the availability, and optimum use, of an income tax or poll transfer/tax applying to the whole community. However, the required assumptions may not be good descriptions of the world in which the policy maker has to take decisions and some of the arguments discussed in the preceding section do have some force. One may ask therefore how far from uniformity one should go.

There are a number of ways in which one can examine the question. First, one can see what governments actually do — this may be in part a revealed statement of their answer to the question of optimum taxes. Such evidence is not, of course, conclusive, since governments may be confused (some, for example, think they need the advice of people like us) and they may be acting for reasons, and under pressures, quite outside those embodied in our models. Second, one can try to provide examples of uniform, or partly uniform, systems which give improvements over the *status quo*. Third, one can compute optimum taxes and compare those with uniformity. One wants to know, in particular, how much is lost by restricting ourselves to uniformity. Alternatively one can ask what is to be gained by differentiation. We shall examine briefly some examples of these investigations.

Governments obviously do not go for uniformity in their indirect tax systems. The ones with which I am most familiar are those of the U.K., India, Pakistan and Bangladesh. In the U.K. we have a single rate of VAT (15%) but a number

of goods, such as food, books, construction, and children's clothing are zero-rated (so that tax paid on inputs can be reclaimed) and others such as insurance, finance, education, health and burial are exempt. Further there are substantial duties on petrol, tobacco, alcoholic drink, cars and betting. We also have an extensive (although some may say inadequate) system of cash transfers in the form of child benefits, unemployment benefits, state pensions and the like, as well as, of course, an income tax.

The U.K. system might at first sight appear to conform to the theorems of Section 2 — uniform indirect taxes together with cash transfers, supplemented by special duties on goods which show externalities or demerits (tobacco, etc.). On closer examination, however, this conformity is less clear. The 15% rate of VAT applies only to around half of consumer expenditure so that the VAT is essentially at two particular rates, zero and 15%, together with those rates arising through taxation of inputs for goods which are exempt. And it seems clear that the choice of zero-rated goods, particularly food, is influenced by distributional considerations. Further it is quite possible that issues of revenue elasticity of the kind firmly embodied in the (one-consumer) theory of Section 2 lie behind tobacco and alcohol taxes; Atkinson, Gomulka and Stern (1984) show that the elasticity of demand for cigarettes is around half that for alcohol and the proportional tax rate is around double on cigarettes relative to alcohol. It seems, therefore, that governments in the UK have regarded the structure of price elasticities and the variation of consumption patterns with income as being inconsistent with the arguments for uniformity (assuming that they understand them).

The indirect tax systems of the sub-continent (India, Bangladesh, Pakistan) show substantial similarities arising from their common heritage. In each country indirect taxes are the main source of government revenue although the percentage of government revenue in GNP is around double in India relative to that of Bangladesh. The main indirect taxes are excise taxes on production, customs duties, and sales taxes in order of relative importance for India. The order of the first two is reversed in Bangladesh and Pakistan, and domestic sales taxes are negligible in Bangladesh. The major roles of indirect taxes relative to direct and the relative components of the taxes have arisen largely from considerations of collection and administration. Thus, for example, excise taxes on production in India overtook those on imports as the domestic production base grew. All three countries are now, however, thinking of widening the system to focus more on final consumption as the basis. India has already made important moves in that direction with the growth of the sales tax (constitutionally allocated to the States in India's federal system) and the introduction of a MODVAT where some excise duties on inputs are rebated. It will, however, be a considerable time before consumption will become the main base. One can expect this trend to continue, however, and more than 20 developing countries do have a VAT in some shape or form. All three countries have heavy taxation of petroleum and cigarettes, and alcohol taxation plays an important role in the revenues of many states in India.

In these countries we therefore have tax systems which look very unlike those of the theory of Section 2. First, taxes fall heavily on intermediates and imports.

Second, indirect taxes are highly differentiated with income distribution apparently a primary motivation. Third, the income tax plays a relatively minor role affecting only a small proportion of the population, and the cash or kind transfer system, embodied in rationing for example, has very patchy coverage. Thus the assumption that distributional issues are adequately resolved through the income tax system or through direct transfers is impossible to sustain and the embodiment of distribution concerns in the indirect tax system seems justified.

The systems are highly differentiated in terms of announced rates although when one takes into account achieved collection and the cascading effects of taxes on inputs as they work through the system the degree of progression is rather less than would appear from the announced rates (see Ahmad and Stern, 1987). Nevertheless it is clear that distribution is a powerful argument in discussions of which goods should be taxed and that a differentiated system is workable in that it collects a considerable amount of revenue, at least in India and Pakistan.

Turning now to the second version of the question of uniformity in practice — can one produce reforms which are beneficial and which are uniform or partly uniform? Ahmad and I have carried out illustrative calculations for India and Pakistan (see Ahmad and Stern, 1987 and 1990). A uniform tax which applied to all goods would be clearly regressive in that it would hit the poor hard. It is not, however, a realistic tax since in a substantially agricultural economy with much production for home consumption one could not possibly tax 100% of consumption. If one exempts food and other goods one can produce examples of reforms which are approximately revenue neutral but which are broadly progressive. Thus appropriate choice of exemptions in an otherwise uniform consumption tax can go a substantial way to meeting distributional considerations. And one can go a good deal further in progression if one adds a second VAT rate, certain excise duties, and some food subsidies. Hence distributional concerns do not necessarily force us to have a myriad of rates of indirect tax.

The third version of the question concerns the divergence of optimum rates from uniformity. A number of researchers have calculated optimum taxes — see, for example Deaton, (1977), Harris and MacKinnon (1979) and Heady and Mitra (1982). In all these calculations distributional values play a major role in determining the optimum rates. Deaton (1977), using UK data, for example, points towards food subsidies and Harris and MacKinnon (1979) find that whereas food should be taxed very heavily in the one-consumer model as being inelastic in demand, it should be taxed least heavily in a two-class model as soon as one introduces some inequality aversion. It is clear therefore that the structure of optimum indirect tax rates is sensitive to distributional values.

In these calculations one does not introduce income tax or cash transfers. An interesting recent study by Ebrahimi and Heady (1987) contains some calculations of optimum taxes, using UK data, where optimum child benefit is determined together with the indirect taxes. The Deaton-Stern (1986) result is confirmed in that separability of labour and goods, linearity of Engel curves, and demographic effects operating only through intercepts lead to uniform indirect taxes if the child benefit system is optimum. Non-uniformity of indirect taxes then arises from non-

separability of labour and goods and the sub-optimality of the transfer system.

Other authors have asked about the costs of imposing uniformity in terms of the welfare loss relative to the optimum. In a model with one consumer Fukushima and Hatta (1987) calculate the welfare level at the optimum indirect taxes and compare this with the uniform tax solution. They find in their example that the difference in welfare levels is large with elastic labour supply but decreases rapidly as the labour supply becomes less elastic. As we have seen, however, from the earlier theory, it would be more instructive to focus on relative compensated cross-elasticities with the wage. More important, however, the model omits a central reason for non-uniformity, and the major reason in the eyes of policy makers, i.e. distribution.

The question was posed in a different and interesting form by Sah (1983) in that he asked how much redistribution is possible through the commodity tax. His answer turns on just how different are the consumption patterns across the income spectrum. He derives an upper bound on the amount of redistribution which is possible in terms of the ratios of budget shares across households. It is clear, however, that the ratios of budget shares depend critically on the degree of disaggregation of goods. With only moderate disaggregation the upper bound becomes large and as we disaggregate indefinitely finely the upper bound becomes infinite. The categories cannot be indefinitely fine but in India, for example, one has different taxes on cotton fabrics according to the density of the weave.

It seems unlikely that purely theoretical investigation will yield bounds on the redistributive effects of indirect taxation which are of real practical significance. The effects of tax reform on individuals in different circumstances require empirical investigation, usually best pursued using household data on consumption patterns (see e.g. Ahmad and Stern, 1987, Atkinson, Stern and Gomulka 1984, and King, 1983). One can then calculate how much better or worse off each household in the sample would be as a result of the tax reform. In the context of most reforms under discussion, a change of real income for a household of 10% would be large and it is most unlikely that general theoretical bounds would be relevant with respect to such changes.

There is probably an important sense, however, in which indirect taxes are a blunt instrument for redistribution relative to the income tax and transfers, since they do not go to the roots of the inequality in incomes but focus only on the consequences for spending patterns. This does not mean, however, that the distributional argument for differentiation goes away — as we have seen in relation to theory in Section 2. In practice transfer mechanisms and the income tax themselves work very imperfectly in many or most countries and there is no doubt that there is considerable variation in consumption patterns across income groups.

5. CONCLUDING COMMENTS

Our review of theory has shown that redistributional considerations provide a strong case for some differentiation of the indirect tax structure unless there is a powerful and optimally adjusted income tax and transfer system. To these

arguments may be added the issues of complementarity with leisure, of externalities and of merit wants. Thus, broadly speaking, theory tells us: (i) that, unless income taxes are optimally set and demands show linear Engel curves, we should tax more heavily those goods consumed more heavily by less “deserving” groups; (ii) we should tax more heavily those goods which are complementary with leisure and (iii) we should tax more heavily those goods which have external diseconomies and/or are, in some way, considered disreputable. As we saw in Section 4 these considerations (at least the first and third) do seem to influence the way in which governments set taxes. There are, however, as we argued in Section 3 major practical advantages of uniformity in terms of collection and organisation and there are real informational problems in implementing criterion (ii) above. We saw, however, in Section 4 that systems and/or reforms are often possible which respect the government’s concern for distribution yet which have uniformity over a substantial number of goods.

If forced to propose an indirect tax system for an “average” developed economy I might well settle for a VAT (or final consumption tax) with two rates, say 10 and 20%, with certain goods zero rated (e.g. food) or exempt, coupled with special excises on certain goods, notably tobacco, alcohol and petrol. This assumes some main income tax and transfer system which is functioning reasonably well.

For developing countries a generalised prescription is not really acceptable. Much depends on the economic structure, the administrative capabilities, the political pressures and the cultural values. Let us consider examples of each in turn. Where the retail and wholesale network is very informal, and much consumption is not marketed, a tax based on final consumption will not be feasible. Weak administration may force one to operate those tax handles, such as import tariffs, that are available. Political pressures, for example, against rises in food prices, may limit reductions in food subsidies. And the cultural values of a number of countries prevent the legal sale (and thus taxation) of alcohol. Further it is very clear both that in most developing countries the income support system and the income tax are very weak and that consumption patterns do vary sharply with income. Therefore the case for distribution playing an important role in the setting of indirect taxes is strong. On these grounds the tax system should not be uniform.

This should not be taken to imply that a myriad of different rates is desirable. There are serious administrative arguments in favour of uniformity and it is a matter for value judgement and empirical enquiry as to how differentiated a tax structure would have to be to take adequate account of distribution. My own view is that one could do quite well in many developing countries with two rates of VAT (in addition to zero rates and exemptions) supplemented with some excises on certain luxury goods, cigarettes, alcohol and petroleum products and backed by some income support schemes operating, for example, through food rations and food/cash for work programmes. Notice that there are two crucial extra ingredients to an otherwise similar list for developed countries (i) we include excises on luxury items (ii) we make income support explicit (it would form part of the direct tax/transfer system in many developing countries). This should not,

however, be taken as a generalised edict and there is no substitute for the hard work of examining the particular circumstances in any given country.

In conclusion we must ask how the theoretical and empirical economic arguments examined here relate to, or require modification for, the considerations of "political economy". First, considerations of administration and evasion do weigh in the direction of uniformity. They are not however overwhelming in that the kinds of differentiated schemes just described can be administered satisfactorily. Second we suggested in Section 3 that, quantitatively, lobbying and rent-seeking will be rather less important in relation to indirect taxes than, say, quotas or licences at least as a proportion of the explicit or implicit taxes and subsidies which are involved. Third, differentiation as a tax handle which might be misused, by governments seeking after revenue, is a possibility but the potential damage under a scheme of the type described is likely to be limited.

Finally, we should ask how the economic arguments are likely to be used or misused in public discussion. How will the statement of the economic arguments affect the political dialogue? From this viewpoint it seems that the danger of gross abuse of the issues and arguments raised by the economic analysis is not severe and that, on the contrary, there is an opportunity and responsibility to help set the agenda and focus, and to prevent the forum being usurped by specious arguments.

We may illustrate by considering the types of indirect tax systems that we have suggested. Suppose it is decided that there are to be three rates for a VAT, 0, 10% and 20%, and that the political/economic discussion now concerns which goods should be allocated to which heading. It would be probable that income distribution would be accepted as a central consideration and there would be quite substantial agreement as to where different goods stood in relation to their consumption by different groups. There is a great deal of empirical evidence and it is a subject on which individuals can make more direct observation than is usually possible on economic issues. For most countries the empirical generalisation that it is the rich who consume Rolls-Royces, Mercedes-Benz and Cadillacs is unlikely to be badly wrong. Certainly one can be more confident about such matters than differential compensated cross-price elasticities with leisure. Further, the consequences of mistakes, for example, a few goods being allocated into the 10% rather than 20% category, do not seem horrendous.

Taxation is a subject in which intuition has to be carefully tutored by theoretical enquiry and empirical investigation. After that enquiry one can and should express the main thrust of the arguments and central questions and results in ways which policy makers can understand and which can help set the agenda for public debate. The fear of political dialogue should not lead us to gloss over the correct theoretical arguments and to propose simplistic formulae, such as a universal prescription for uniform taxation. Even worse is the proposition of such prescriptions in ignorance of what the theory really shows. I hope we have seen that the theoretical investigation does not necessarily involve great complexity and does not leave the argument vulnerable to bogus pleading. Rather it points us directly to critical

issues, structures, and practical enquiry, and provides methods and techniques for carrying out the empirical work. The conclusion against uniformity is not easily overturned by the questions raised by political economy.

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