Consumption or Income Taxation
for the Philippines?

by

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ABSTRACT

Apropos the Philippines' perennial tax problems, the pros and cons of consumption and income taxation are weighed in terms of their respective effects on revenue generation by drastically reducing the negative effects of non-preference revelation and its closely related free rider problem and, on efficiency and equity concerns. The study concludes that consumption taxation is more appropriate for the Philippines than income taxation.

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I. Introduction

Since time out of mind, the Philippines has been plagued by the problem of shortfalls in tax collection relative to the target tax revenue. At present the country employs some combination of consumption or expenditure taxation (through excise taxes) and gross income taxation, especially of fixed income earners. For discerning Filipinos, the culprit behind this problem is the free rider problem the prevalence and extent of which is, in turn, traceable to the corruption of both the variable income recipients and the tax collectors. Under these conditions, the main question that arises is: what is the tax system that will minimize, if not totally eliminate, this problem so that whatever the tax system is, it will achieve revenue maximization.

This paper attempts to answer this question by presenting theoretical arguments, pro and contra, on both tax systems – consumption or expenditure taxation and income taxation – to determine which is more appropriate for the Philippines taking into account their respective effects on the following:

1. Revenue generation
2. Efficiency
3. Equity (horizontal and vertical)

The free rider problem or simply tax evasion, whether partial (tax cheating) or total, refers to those who avail of the use of public goods due to these goods property of nonexcludability, but who do not disclose their true marginal benefits (non-preference revelation) as reflected by the amount of taxes they pay.

While the problem of the distortional effects of taxation on both efficiency and equity is theoretically and empirically recognized, maximization of revenue from any given tax regime is of paramount importance especially in a less developed country (LDC) such as the Philippines which requires considerable public financing of massive social overhead capital, the prerequisites of economic growth or development. Thus the main problem for a country such as the Philippines is the free rider problem. This problem cannot be eliminated by legal or extra-legal means which are counter-

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productive (since by disabling the taxpayer to earn income, they also get rid of the tax, however small this maybe, and at the same time, expenses are incurred in the process) but by a tax system that effectively minimizes if not totally eliminates free riding.

While the free rider problem is an obstacle to revenue maximization and exacerbates inefficiency and equity problems, it may also entail external diseconomies through its negative effect on the quantity of public goods and basic services which are in the utility functions of individuals, i.e. the marginal utility of free riding is negative.

After a brief consideration of the pros and cons of consumption taxation and income taxation in terms of their effects on efficiency and equity, the study looks at their revenue and employment incentive-cum-output aspects employing partial equilibrium analysis. Conclusions and recommendations on which of the tax systems maybe more appropriate for the Philippines punctuate the study.

II.   Efficiency and Equity Effects of Consumption and Income Taxation

While consumption or expenditure as tax base needs no definition, income as tax base needs to be clearly defined. In general, taxable income, whether gross or net, is the sum of wages, value of assets, and the return or interest earned on assets – all in nominal terms since it is nominal, not real income that is being taxed. Real income, whether total or parts of it, cannot be taxed because the taxpayer and the tax collector must agree on the content and estimation method of the price level index needed to calculate real income or any part or parts of nominal income. Agreement between the taxpayer and the tax collector on the price level index to be used is impossible since the taxpayer wants this to be as high as possible, while the tax collector wants this to be as low as possible. Only in theory is this problem being discussed, not in reality.

With regards to (nominal) income as tax base, the next question is, whether it is gross or net income that should be taxed. In the Philippines, the shift from net income to gross income taxation, particularly of fixed income taxpayers, was made during the Marcos dictatorship, the obvious reason behind which is not just to simplify the tax system but to broaden the tax base to raise tax revenue. In so doing, injustice has been injected into the tax system depending on the amount of exemption. In the Philippines, the amount of exemption is determined only by the taxpayer's civil status and number of dependents.

Taxable income is generally defined as total gross income less exemption. Taxable net income is very different from this in that taxable net income is total gross income less exemption as defined above and the costs of earning income which include work-related transportation expense, medical and health care expense, and other work-related expenses of the taxpayer. If, however, the amount of the exemption is large enough to approximately equal total deductions from total gross income to arrive at

taxable income, this undesirable feature of gross income taxation is lessened. But if the amount of exemption is fixed the tax structure becomes regressive and if it is <u>ad valorem</u> across incomes the tax structure is at most proportional[1] in which case both the horizontal and vertical equity considerations are not seriously affected because a proportional tax structure is an <u>average</u> which improves if the variance of the welfare levels of the various taxpayers is not very large. The distortional effect of a regressive tax structure maybe greater among low-income taxpayers. A progressive tax scheme's distortional effect is the opposite of this, however, its redistributive effect which is a major objective of taxation especially in less developed countries (LDCs) where income inequality is very large, is much greater than that of the regressive tax scheme. Insofar as the redistribution of income is concerned, a progressive <u>ad valorem</u> tax structure is most superior in correcting large income inequality. However, the progressive <u>ad valorem</u> tax structure maybe as distortional if not more so as in a regressive or proportional tax structure since the work-leisure relationship maybe affected and the efficiency in exchange or Pareto optimality in consumption is disturbed so that the overall Pareto optimality or efficiency condition is also disturbed. A progressive <u>ad valorem</u> income taxation maybe less distortional only if the poor and rich taxpayers have identical utility of income functions and income inequality is not very large. These certainly are not the case in an LDC with large inequality in income distribution such as the Philippines, so that the progressive <u>ad valorem</u> tax structure, although possessed with a superior redistribution of income scheme that corrects for the large income inequality, may still come out to be seriously distortional insofar as efficiency (in consumption and production) and equity (whether horizontal or vertical) problems are concerned. Insofar as income taxation is concerned, the proportional tax structure may come out to be the least distortional but with less corrective redistribution effect. Serious distortion maybe due mainly from the prevalence of the free rider problem to which income taxation is most prone.

The Philippine tax structure with gross income as the tax base, has a lump sum component and in theory, a progressive <u>ad valorem</u> component. However, an LDC with large inequality in income distribution feature and the prevalence of wide-spread free rider problem especially among the high income group make the Philippines' gross income taxation scheme seriously distortional on both efficiency and equity concerns. This is aggravated by the fact that the low and middle fixed income earners, being <u>captive</u> taxpayers due to the withholding tax collection system, bear the brunt of taxation and in effect subsidizing the tax revenue shortfalls from the free riding high (variable) income taxpayers. Thus while in theory the country's gross income taxation maybe progressive or at the very least proportional, in reality it is very regressive and thus highly distortional.

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[1] From $T=t(Y-E)$, where T= tax revenue, t=tax rate, Y=income, and E=exemption, the tax structure is regressive if as Y increases T/Y decreases, proportional if T/Y is constant, and progressive if T/Y increases (Musgrave).

The efficiency and equity problems of income taxation, especially with gross income as tax base, presented above are diminished if not totally eliminated in consumption or expenditure taxation. In the first place, with consumption or expenditure as the tax base, the problems of defining the tax base and whether it should be in nominal or real terms, disappear. The free rider problem that plagues income taxation in the Philippines is virtually eliminated. Even the hard-to-tax informal sector taxpayers under the income taxation system cannot escape from consumption taxation. Insofar as equity is concerned, the arguments that form the main justifications (Kaldor, 1955; Meade Report, 1978) for consumption taxation are:

1. It is consumption that generates utility for the taxpayer rather than income.

2. Consumption represents how much the taxpayer "takes out of the social pot," rather than how much he "puts in" in income earned.

Both of these have the implication and meaning that the utility of income is derived from the utility of consumption or expenditure on goods and services – Kaldor's "pot." Income by itself generates no utility and in theory whatever utility income has must simply offset the disutility of work required of the taxpayer to earn it. Thus if the total cost of earning income in terms of the total (value of) disutility of work is taken into account and not just what the taxpayer spends to earn income, the worker-taxpayer may even end up worse off and this worsens the equity problem because the worker-taxpayer's income becomes less (by the amount of the tax) than the value of the disutility of the work that he must put in. Thus income taxation has a disincentive effect for workers to furnish more labor. This problem will be dealt with in greater detail in the next section. Without the free rider problem though, income taxation may easily allow progressivity on the basis of the ability-to-pay principle.

Consumption or expenditure taxation on the other hand, while not as distortional as income taxation with regards to equity (vertical and horizontal), may however be more distortional with regards to efficiency although as mentioned earlier, income taxation may have an equally negative effect on efficiency or Pareto optimality in production and hence on the overall Pareto optimality condition since in the long-run all costs – which include wages – are variable. The impact of consumption taxation on efficiency or Pareto optimality in consumption is, however, more direct and immediate than income taxation. With an ad valorem tax, if the various consumption goods have different rates, which must be the case if the tax structure is progressive, then the Pareto optimality or efficiency in consumption condition may no longer hold and this also results in the violation of the overall Pareto efficiency condition. The second best solution cannot also be invoked since taxation is "across the board", i.e., imposed on all commodities or expenditure items regardless of the market structures of the goods. This means that for consumption taxation to be less distortional, the tax structure can only be proportional. Ignoring the regressive tax structure which puts the burden of taxation on the low income group, a very important objective of taxation especially in an LDC with

large inequality in income distribution like the Philippines is income redistribution which calls for progressivity in the tax structure. This means that the income that makes consumption or expenditure possible cannot be ignored. Since consumption increases with income, the ability-to-pay principle may still be invoked as a rationale for progressivity in the structure of consumption taxation. In addition to this, consumption of public goods also increases with income. Under these circumstances, basic goods or necessities maybe imposed zero to very low tax rates while luxury goods or commodities consumed by the rich maybe imposed the highest possible tax rates.

By "highest possible progressive ad valorem tax rates" is meant the tax rates that maximize revenue. In this manner the tax rate structure is less distortional in terms of overall Pareto efficiency condition and, horizontal and vertical equity concerns, since for say, any goods x and y consumed by low income taxpayers 1, 2, 3,...,n,

$$MU_x^1/MU_y^1 = MU_x^2/MU_y^2 = \cdots = MU_x^n/MU_y^n = P_x/P_y = P_x(1+t)/P_y(1+t), \quad \text{and}$$

$$MU_{\hat{x}}^{n+1}/MU_{\hat{y}}^{n+1} = MU_{\hat{x}}^{n+2}/MU_{\hat{y}}^{n+2} = \cdots = MU_{\hat{x}}^m/MU_{\hat{y}}^m = P_{\hat{x}}/P_{\hat{y}} = P_{\hat{x}}(1+\hat{t})/P_{\hat{y}}(1+\hat{t}), \quad \text{for}$$

any goods $\hat{x}$ and $\hat{y}$ consumed by high income taxpayers, n+1, n+2, ... , m, MU is marginal utility and the tax rates t and $\hat{t}$ are such that $t < \hat{t}$. t maybe fixed while $\hat{t}$ may increase depending on the type of the goods.

In this regard, the interrelated problems that arise are the following:

1. Identification of "basic goods or necessities" and "luxury goods."

2. As income increases with economic growth or development, some commodities may become inferior goods and this calls for adjustment of the tax structure. What are these commodities?

The first is required to determine when to start, and the extent of, progressivity. The second is required for amendment in the tax structure as income increases due to economic growth or development over time. However, the two are closely related in that both require the identification of which goods are consumed by poor taxpayers and which goods are consumed by rich taxpayers. In both problems of consumption taxation, the identification of basic goods or necessities which will have lower tax rates than the tax rates on luxury goods maybe based on the inferior/non-inferior goods criterion for commodity differentiation based on income. This can easily be done empirically and is thus left to empirical work.

The other important advantages of consumption or expenditure taxation over income taxation are:

1) Consumption taxation needs no periodic adjustment in the tax structure due to price level changes.

2) If the tax rate structure is progressive <u>ad valorem</u>, consumption taxation is superior to income taxation as an automatic stabilizer. More so in the case of the Philippines where gross income taxation has a fixed component.

3) Drastic reduction in government expenditures on tax collection and administration.

4) Taxpayers are saved the time and inconvenience of annual filing of income tax returns – a good reason for taxpayers to favor consumption taxation. Tax administration will focus on the "tax collectors" – the producers and sellers of the goods making tax administration more efficient.

5) In the Philippines, consumption taxation may drastically reduce if not totally eliminate corruption since it leaves virtually no room for connivance between the government's tax collection agency and the taxpayers. Such connivance thrives in income taxation. Hence the free rider problem becomes virtually non-existent in consumption taxation.

The only slight advantage of income taxation over consumption taxation is that as a tax base, income is closer to the measure of individual welfare or ability-to-pay principle for taxation purposes assuming, of course, that the free rider problem - which in the Philippines is most prevalent in income taxation – is non-existent. Although in theory income taxation is relatively less distortional if a specific tax were imposed, in the long-run when income changes hence the tax relative to income changes so that on the aggregate the total tax revenue changes and hence the tax structure becomes indistinguishable to the <u>ad valorem</u> tax structure, income taxation maybe more distortional than consumption taxation because of its disincentive effect on labor supply – a problem which will be dealt with in the succeeding sections of this paper.

To punctuate this section, the effects of any tax system must be approached in a holistic perspective. In the case of a progressive tax system, its distortional effect – which maybe attenuated in consumption taxation – must be considered and weighed vis-à-vis its redistributive effect which, under a potential Pareto improvement, may redound to benefits for high-income taxpayers, e.g. in terms of more investment in human capital that improves the productivity of the low-income worker-taxpayers, increase in the supply of public goods the major consumers and main beneficiaries of which are the high-income or high-consumption taxpayers, etc. With this approach besides efficiency and equity considerations, the arguments presented indicate the superiority of consumption taxation over income taxation. This result maybe further reinforced by the disincentive effect of income taxation on the supply of labor to be shown in the next section.

III. The Effects of Income Taxation on the Labor Market

1. The Laffer Curve

Consider Fig. A below the upper panel of which graphically presents the labor market. Nominal or money wage w is measured on the vertical axis, the quantity of labor L on the horizontal axis. D_L and S_L are the aggregate demand for labor function and the aggregate supply of labor function, respectively. Both D_L and S_L are, for purposes of theoretical simplification, linear functions of nominal or money wage without tax. Nominal wage is used instead of real wage as an independent variable since it is what is actually being taxed. Real wage however, maybe used and gives the same result provided the price level is fixed otherwise everytime the price level changes the real wage must be recalculated and the corresponding tax rate revised. This is messy because as earlier mentioned the tax collector and the taxpayers must agree on the method and result of estimation of the price level.

In the upper panel of Fig. A, the prevailing equilibrium money wage without tax is w_o and the equilibrium level of employment is L_o. At the equilibrium wage w_o the total income of the total employed labor L_o is $(w_o)(L_o) =$ the rectangle Ow_oBL_o. Thus tax revenue from wage income at this initial position is zero.

Since the supply of labor as a function of money wage without tax is upward sloping, the decrease in wage after tax must reduce the quantity of labor supplied from L_o to L_1 when the tax rate $t = t_o$ is imposed so that the tax revenue from the prevailing wage w_o is $(w_o)(t_o)(L_1) =$ the rectangle $w_o(1-t_o)w_obc$ which is smaller than the rectangle $w_o(1-t_o)w_oBd$. This is realistic - workers L_1L_o quit the labor market when their wage income is reduced by the tax - which is in keeping with the behavior of workers (taxpayers) behind the Laffer curve and the well-known distortional effect of the tax.

As the tax rate t increases, tax revenue increases up to the tax rate $t = t_1 > t_o$ at which it reaches its maximum since at point A of the segment OB of the linear supply of labor function OS_L, $AB = OA$ so that $AB/OA = 1.0$. Thus at point A, the maximum tax revenue from wage income is $(w_o)(t_1)(L_2) =$ the rectangle $w_o(1-t_1)w_o\alpha A$ at which the quantity of labor supplied - still at the prevailing wage w_o that is being taxed - decreases further from L_1 to L_2. Thereafter as the tax rate increases, revenue starts to decrease until it is zero at the confiscatory tax rate say, $t = t_3$ since at the wage after tax $w_o(1-t_3)$ which may still be positive, all workers withdraw from the labor market. It should be noted that as shown by the supply of labor curve, not all workers (taxpayers) react in the same way to changes in the tax rate, which is to be expected because not all of them have the same perception of what is a tolerable or intolerable tax burden. However, as the tax rate increases, there is an increasingly unanimous reaction of workers to what would be the confiscatory tax.
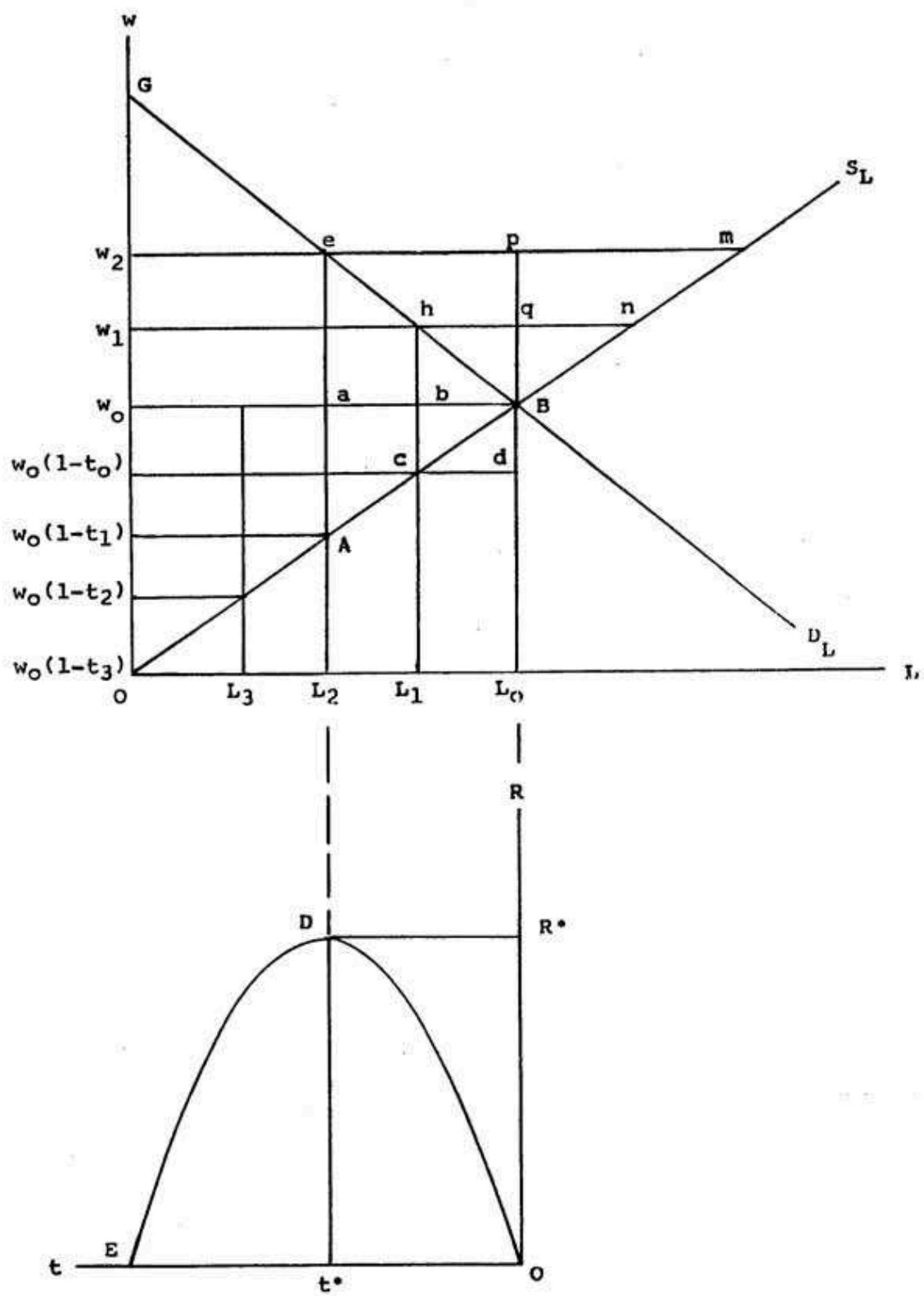
Fig. A

At this juncture, it is important to note that the confiscatory tax rate which in the example shown in the upper panel of Fig. A is t_3, need not be 100.0 percent. The confiscatory tax rate at which all workers withdraw from the labor market will depend on the workers' perception of the tax burden hence it can be any rate, perhaps much lower than 100.0 percent. For example, a 70.0 percent tax on wage income or even non-wage income maybe <u>considered</u> confiscatory by taxpayers for being a very heavy tax burden. The British tax on tea that sparked the American war of independence must have been much lower than 100.0 percent. Thus a confiscatory tax rate maybe defined as that tax rate which workers(taxpayers) feel as too onerous so that they either avoid paying the tax or, all or most of them quit the labor market altogether. Whatever is the confiscatory tax however, the shape of the curve that emerges from this discussion is shown in the lower panel of Fig. A.

The perfectly symmetrical curve ODE in the lower panel of Fig. A - a result of the linear labor supply function OS_L in the upper panel - which shows the tax revenue function $R = f(t)$ is the Laffer curve.[2] The Laffer curve can also be generated whatever is the prevailing wage that is taxed. If instead of the equilibrium wage w_o the prevailing wage that is taxed is w_1 at a tax rate that yields the tax revenue equal to the rectangle $w_o(1-t_o)chw_1$, and then w_2 at a tax rate that yields the maximum revenue shown by the rectangle $w_o(1-t_1)Aew_2$, and so on, a curve of similar shape as ODE in the lower panel of Fig. A is generated. OBG being a triangle, maximum revenue is the rectangle $w_o(1-t_1)Aew_2$ since $AB/OA = eB/Ge = 1.0$. Thereafter as the tax rate increases, revenue decreases. The Laffer curve need not be perfectly symmetrical since if it is, given the range of the tax rate, it will simply be the rate at the middle of the range that will maximize revenue. It is only for purposes of theoretical simplicity that the linear supply of labor function shown in the upper panel of Fig. A which yields the perfectly symmetrical Laffer curve in the lower panel whose maximum tax revenue is at point D at the tax rate t^* is used in this study.

In Fig. B, the upper panel shows two examples of non-linear supply of labor functions, OS_{L1} which yields maximum tax revenue at point A_1 or, at point M at tax rate t_1 of the non-symmetrical Laffer curve OME (lower panel) derived from it, and OS_{L2} which yields maximum tax revenue at point A_2 or, at point N at tax rate t_2 of the also non-symmetrical Laffer curve ONE derived from it. The single-peak feature of the Laffer curve comes from the positive slope throughout of the labor supply function, whether linear or non-linear. The highly unlikely non-linear labor supply curve with unitary elasticity is ruled out.

It is clear that unless the actual shape of the labor supply curve is known, the actual shape and peak point of the Laffer curve cannot be determined and hence the tax rate that maximizes revenue. Also, where the economy is on the curve cannot be

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[2] The linear supply of labor function is $L = bw_o(1-t)$ where w_o is the wage that is being taxed at the rate t. Whence, the tax revenue function (Laffer curve) is $R = bw_o(t-t^2)$. Since w_o is fixed, $R = f(t)$.
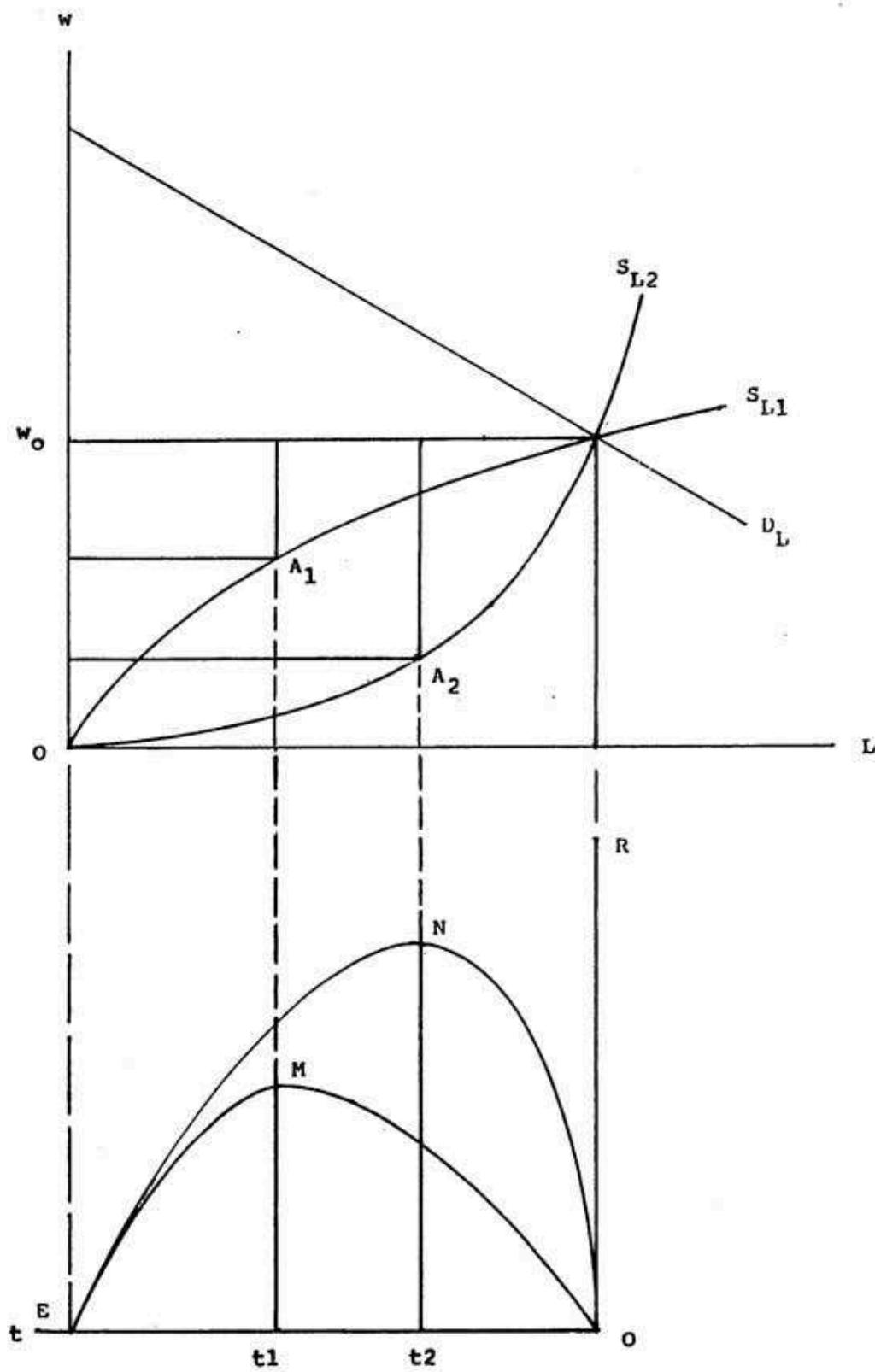
Fig. B

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determined. The actual shape of the supply of labor curve however, cannot be determined theoretically but only through empirical work. Once the actual shape of the supply of labor function is known, the actual shape of the Laffer curve will also be known and, given the actual tax rate, where the economy is on the curve can be precisely determined.

From the derivation of the Laffer curve, the following general conclusions are drawn, regardless of the shape of the supply of labor curve:

1) As the tax increases, the level of employment decreases.

2) On the upward sloping side of the Laffer curve up to its peak point where tax revenue is maximum, there is a trade-off between revenue and employment (or total output), that is, as the revenue increases (decreases) employment (or total output) decreases(increases), while on the downward sloping side of the curve, as the tax revenue decreases(increases) employment (or total output) correspondingly decreases(increases).

The first of these two general conclusions is no more than the result of the behavior of workers in response to the increasing tax as described earlier that yields the Laffer curve. It has, however, serious implications on the behavior of wage and employment or total output since the wage that is being taxed cannot remain unchanged because it must give way as the tax erodes the level of employment.

With regards to the second, the trade-off between revenue and employment along the uphill side of the curve makes it difficult, if not impossible, to maximize tax revenue without increasing unemployment and consequently, decreasing the level of total output.

The actual shape of the Laffer curve as derived from the actual shape of the supply of labor function, given the prevailing wage, has however, certain important implications on the presence and extent of the trade-off between revenue and the level of employment. If the actual shape of the curve is *ONE* in the lower panel of Fig. B so that the tax rate that maximizes revenue is very low, the trade-off may not exist at all or at most it maybe very weak making revenue maximization possible with little or no decrease in the level of employment hence with little or no decrease also in the level of total output. Indeed, if the true maximum point of the Laffer curve is very close to the vertical (revenue R) axis, the tax rate that maximizes revenue maybe considered by workers to be low and tolerable enough tax burden so that the trade-off is non-existent - tax revenue is maximized and the full employment level of total output is intact. There is no distortion in the labor market. On the other hand and in sharp contrast to this, the trade-off between revenue and employment becomes effective and more pronounced as the peak point of the Laffer curve occurs farther away from the vertical axis along with the revenue-maximizing tax rate. In all of these cases, the crucial variable is the revenue-maximizing tax rate - the higher this is, the greater will be the extent of the trade-off.

Both of the general conclusions however, have very significant implications with respect to fiscal and/or monetary policies when linked with the behavior of nominal wage and the level of employment due to the income tax. This aspect of the theoretical derivation of the Laffer curve will be the highlight of the following section.

2. The Behavior of Wage and Employment

The focal point of this section is the more significant first general conclusion of the preceding section that the quantity of labor supplied must fall as the tax on the prevailing money wage increases because the wage after tax to which the supply of labor responds decreases and as this takes place the wage offer (without tax) of employers increases. With this result from the derivation of the Laffer curve, an attempt is now made to explain the impact of the tax on the behavior of wage and the level of aggregate employment (or unemployment) which is perhaps, the most important concern of macroeconomic policy as it affects the level of total output.

Consider the upper panel of Fig. A once more. It is clear that the equilibrium wage w_0 that is being taxed cannot keep on prevailing under the distortional impact of the tax which is, to decrease the level of employment as workers who consider the tax burden increasingly onerous <u>withdraw</u> from the labor market thus pushing the demand price for labor upward beyond w_0. When money wage after tax falls to $w_0(1-t_0)$, the withdrawal of labor L_1L_0 from the labor market shrinks the quantity of labor supplied to L_1 thus raising the demand price for labor to w_1, the money wage (without tax) that employers are willing to pay L_1 of labor. Concomitantly, an excess of supply over the demand for labor at the demand price w_1 equal to the horizontal line segment hn opens up. Under competitive condition the adjustment process towards the full employment equilibrium wage w_0 cannot take place because the situation is brought about by the exogenously determined tax, not by any transitory disequilibrating endogenous change in the labor market.

The questions closely related to this are: (a) what happens to the workers L_1L_0 who withdrew from the labor market when money wage after tax decreases to $w_0(1-t_0)$ from the prevailing money wage before tax w_0? (b) will they remain unemployed and go on welfare or receive unemployment benefits which are all tax free for the rest of their lives? To answer these questions, consider the workers' supply of labor decision in response to the tax which reinforces further the downward wage inflexibility. The amount of labor L_1L_0 = the line segment $hq = cd$ that withdrew from the labor market due to the decrease in their wage income after the tax may <u>rejoin the labor market if the money wage offer of employers is high enough to offset the tax</u> w_0t_0 or a large enough part of it. That is, these workers <u>revise</u> their supply price $\overline{w}$ such that $\overline{w} - w_1 = w_0t_0$ which must be matched by employers' demand price.

Suppose $\overline{w}_1 = w_1$ in Fig. A, that is employers'demand price w_1 matches labor's revised supply price $\overline{w}_1$, hence all workers who are willing to work will get the wage w_1. At this now prevailing wage w_1 however, only L_1 can be employed while the quantity of labor that is willing to work is $w_1 n$ hence there is <u>involuntary unemployment</u> equal to the horizontal line segment hn - the excess of the supply of labor over the demand for labor at the prevailing wage $\overline{w}_1 = w_1$. The line segment hn includes not only $L_1 L_o = hq = cd$, the quantity of labor that withdrew due to the tax but are now willing to rejoin the labor market at the wage w_1 but also those who will join the labor market qn at the same wage.

The prevailing wage w_1 is <u>inflexible downward</u> due to the income tax that workers offset by raising their supply price that is matched by employers' demand price as the level of employment is eroded by the tax. Thus, unless the tax is removed or perhaps drastically reduced to such rate or amount that <u>all</u> workers consider as tolerable tax burden relative to whatever wage will prevail, the adjustment process towards the previous full employment equilibrium wage (without tax) w_o will not take place. (If a reduction of the tax is made, the consequence of this on revenue will depend on where the economy is on the Laffer curve and the extent of the trade-off between revenue and employment). In effect, when workers raised their supply price to $\overline{w}_1 = w_1$ in response to the tax, the downward rigidity of money wage <u>nullifies</u> the segment On of the supply of labor function OS_L so that it now becomes the curve $w_1 n S_L$ giving rise to underemployment equilibrium where the prevailing equilibrium nominal wage is now w_1 and the equilibrium level of employment is L_1. With the decrease in the level of employment, total output must fall.

The tax on wage income has thus created unemployment by preventing the money wage to fall freely to the full employment equilibrium wage w_o and for total output to increase correspondingly. The extent of the response of workers to the tax through changes in their supply price and the consequent size of unemployment will depend on the tax rate. An increase in the tax rate, for example from t_o to t_1, will raise their supply price $\overline{w}$ to $\overline{w}_1 = w_1$ the demand price for labor of employers when labor supply shrinks further from L_1 to L_2 thus shifting the horizontal segment of the supply of labor function upward resulting in increased unemployment ($em > hn$). The new wage w_2 that is established is again inflexible downward. Thus, as the tax increases and employment decreases, labor's counteracting wage increases, further raising unemployment and reducing total output.

The same result is obtained whatever is the prevailing nominal or money wage that is being taxed. For example, if w_2 is the prevailing underemployment equilibrium wage that is taxed, then labor's supply price $\overline{w}$ will be such that $\overline{w} - w_2 \approx w_2 t$. That is, workers keep on countering the tax that they consider unbearable, by raising their supply price hence shifting upward the horizontal segment at the higher wage that will then be established. In general, whatever is the prevailing money wage w_p that is being taxed, as long as workers counter the tax and pass it on to employers - a perfectly rational behavior

no different from what firms do to the tax on their income or output which they pass on to consumers - by raising their supply price $\bar{w}$ so that $\bar{w} - w_p \approx w_p t$ there will be unemployment at the wage that will then be established that is inflexible downward even under competitive condition. In this regard, it is important to note that since labor's supply price is such that $\bar{w} - w_p \approx w_p t$ or $\bar{w} \approx w_p + w_p t$ which shows $\bar{w}$ as an increasing function of the tax rate t, it is clear that when the tax is removed (t=0), $\bar{w} = w_p = w_0$ the full employment equilibrium wage. That is, when t=0, wage becomes fully flexible and under competitive condition the adjustment towards the full employment equilibrium wage shall take place.

A theoretical rationale for the well-known Keynesian wage stickiness downward and its consequent less than full employment equilibrium level of total output is thus provided namely, that wage rigidity downward is simply due to the tax that raises the demand and supply price of labor above its full employment level and prevents its adjustment towards full employment. Simply put, wage rigidity downward is nothing more than the distortional effect of the income tax on the labor market. Accordingly, involuntary unemployment maybe redefined as follows: workers consider themselves involuntarily unemployed when they are looking for work but cannot find work at the prevailing money wage that employers are willing to pay and that workers consider will offset the income tax.

As a digression and by way of concluding this section, the distortional effects of the income tax and the imposition of a minimum wage on the labor market are briefly compared. The slight difference lies in the causal sequence of the changes in wage and employment. While in the case of income tax it is the decrease in the level of employment as workers withdraw from the labor market due to the tax that drives up the wage, in the case of the minimum wage imposition, it is the compulsory wage hike that decreases the level of employment. Both the income tax and the minimum wage are; however, exogenously determined and have the same distortional effect on the labor market - they increase wage above the equilibrium level and make it inflexible downwards creating unemployment even under competitive condition and concomitantly reducing the level of total output.

IV. The Effects of Consumption Taxation on the Labor Market

As in Sec. III, this section discusses the effects of consumption or expenditure taxation on the goods and labor markets with a partial equilibrium approach.

Consider Fig. C below the upper right-hand panel of which shows a typical firm's or an industry's supply and demand curves where the quantity of a good or composite good or output is a function of the good's price or the price level only, all other variables in the supply and demand functions are held fixed, since what will be shown here are
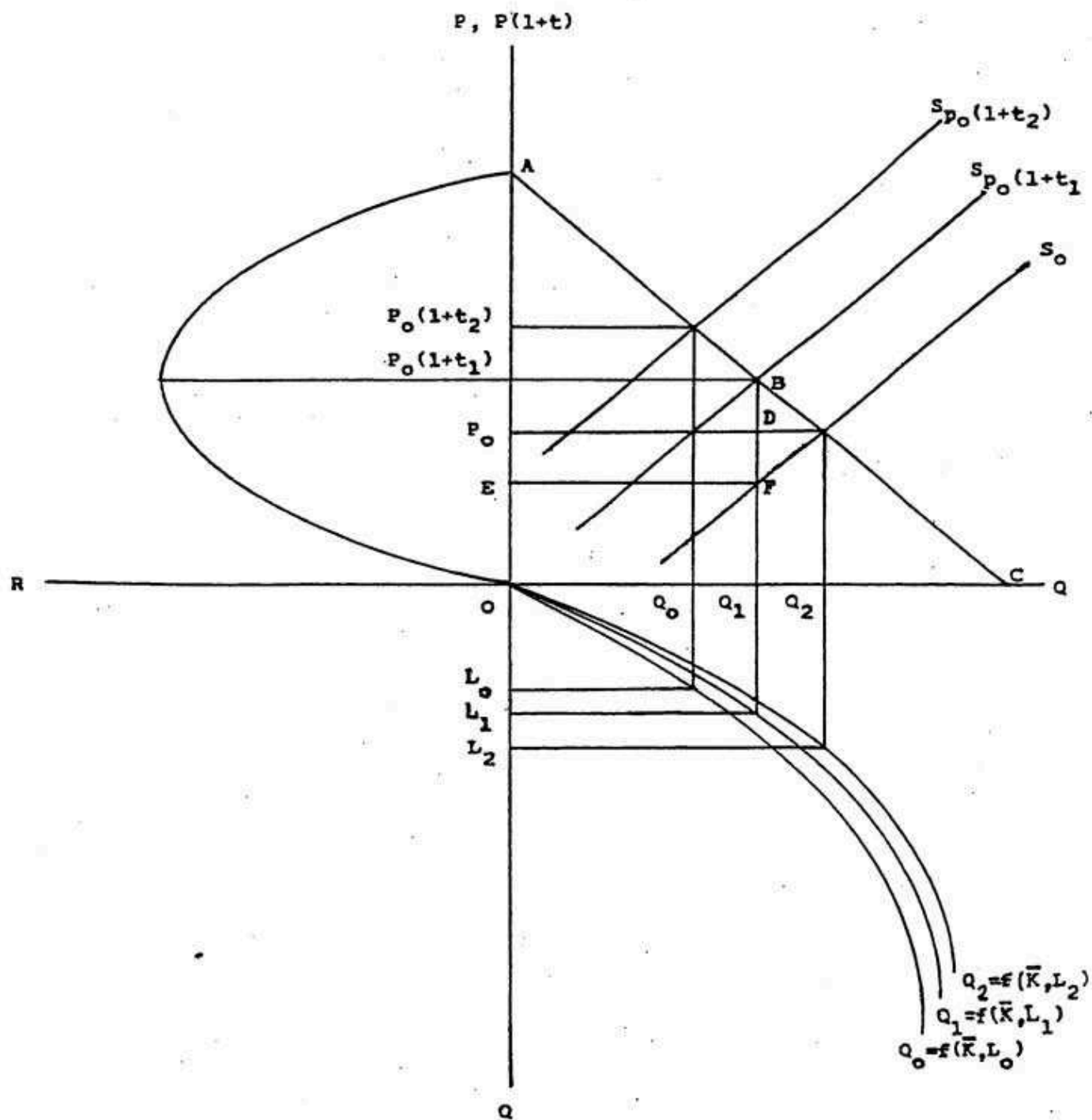
P, P(1+t)

A

$S_{P_o(1+t_2)}$

$S_{P_o(1+t_1}$

S_o

$P_o(1+t_2)$

$P_o(1+t_1)$

B

D

P_o

E

F

R   C   Q

O Q_o Q_1 Q_2

L_o

L_1

L_2

$Q_2 = f(\overline{K}, L_2)$

$Q_1 = f(\overline{K}, L_1)$

$Q_o = f(\overline{K}, L_o)$

Q

Fig. C

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simply the effects of consumption taxation directly on the goods market, and indirectly on employment hence on the labor market. S_o is the supply curve without tax while AC is the demand curve.

With an ad valorem tax on a unit of the good $t=t_1$ the supply curve shifts leftward (upward) from S_o to $Sp_{o(1+t_1)}$ since to the suppliers or producers the tax is a cost and they will shift the tax burden to consumers. Total tax revenue is the area $EP_o(1+t_1)BF$ which is shared by consumers and producers/suppliers, $P_oP_o(1+t_1)BD$ by consumers, EP_oDF by suppliers. Any deadweight effect is offset by the redistributive objective of the tax. Given the demand curve the tax has the effect of raising the equilibrium price (after tax) and reducing output level from Q_2 to Q_1 which, in turn, decreases employment from L_2 to L_1 then to L_o as the tax increases from $t=t_1$ to $t=t_2$. These effects go on as the tax rate t increases.

The upper left-hand panel of Fig. C shows the symmetrical total revenue curve that is generated by successive increases in the tax rate. Total revenue R as a function of the tax rate t has the same shape as the Laffer curve in Fig. A in the case of income taxation, reaching its maximum at point B on the demand curve where $AB=BC$, i.e., the demand curve is of unitary elasticity. The shape of the total revenue function may also be modified by the shape of the demand curve in strict parallelism to the shape of the supply curve as discussed in Sec. III and shown in Fig. B in the case of income taxation, hence its discussion need not be replicated here.

Given the aggregate or industry supply and demand curves for any taxable good, both of which are neither perfectly elastic nor inelastic, the following observations are clear:

1) The ad valorem tax raises costs thus decreasing supply (shifting the supply curve leftward/upward) resulting in less employment and output.

2) This decreasing employment cum decreasing output continues as the tax rate increases. Concomitantly, a tax revenue function which rises along the inelastic segment of the demand curve up to the point where it is of unitary elasticity, and then decreases along the elastic segment of the demand curve, (left upper panel of Fig. C) similar to the Laffer total tax revenue function is generated. Given the demand curve, this enables the determination of the tax rate that maximizes tax revenue. As in the income tax case, the maximum point of the curve, or the tax that maximizes revenue in the case of consumption taxation will depend on the shape of the demand curve.

3) Unlike in the income tax case where the tax revenue is borne solely by the wage earners, in consumption tax the total tax revenue is not entirely borne by consumers when the tax is shifted to them by producers or suppliers but is shared by both.

The important implications of the above vis-à-vis income taxation as discussed in Sec. III are:

1) Both tax systems are inflationary in that both result in output reduction. In consumption taxation, the inflationary effect is attributed to the producers or suppliers shifting the tax burden to consumers and since the tax raises costs, the decrease in supply decreases output and employment, while in income taxation the inflationary effect is due to the decrease in employment resulting from the negative effect of the tax on workers' labor supply decision, which in turn decreases output.

2) While consumption tax creates no involuntary unemployment (unless the supply of labor function is perfectly elastic) but a falling wage as the demand for labor decreases (the demand for labor function shifts leftward/downward), income taxation results in involuntary unemployment which is distortional of efficiency and equity. Consumption taxation creates no distortional effects on both the goods and labor markets.

3) The result that both tax schemes are inflationary means that any negative effect of either tax systems on total tax revenue due to the decrease in income as employment decreases, maybe offset by inflation itself, perhaps more so depending on the inflation rate.

4) With regards to the negative effect on employment of either tax schemes where income taxation results in involuntary unemployment while consumption taxation does not, the obvious reason for this is that while the tax on income is a tax on the work that labor "puts in" in the production process – a disutility that must be offset by wage - the tax on consumption is a tax on what one takes out from the total output menu which has a positive utility. Put differently, while the tax on income has a direct impact on workers-taxpayers' welfare, the tax on consumption has only an indirect effect because after all, all commodities are substitutes in the budget constraint which means that consumers do not make any distinction among the commodities that they help produce – all they care about is the utility that they derive directly from the various goods, whether produced by them or by others.

5) While income taxation has a direct distortional impact on the labor market by affecting wage and labor supply decision which induces involuntary unemployment and consequently distorts production, its distortional effect on equity is also clear. Since producers being recipients of variable (profit) income are affected only by the progressivity of the tax structure, the induced involuntary unemployment effect of income taxation maybe of such an extent – depending on the tax rate structure and the rate of progressivity – that worsens income distribution. These effects are not present in consumption or expenditure taxation which hardly affects equity (horizontal and vertical) since consumers are free to choose the level of their consumption based on their income and the commodity mix that they consume many of which are substitutes. In income

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taxation, income recipients have no choice on the wage or income level that they should have at a point in time. From these discussions, it can be concluded that consumption taxation is less distortional – equity or efficiency-wise – than income taxation. Furthermore, consumption taxation allows virtually no avenue for free riders, reaching even the difficult-to-tax informal sector and professional variable income recipients. From all these consumption taxation emerges as superior to income taxation.

V.   Conclusion

While income taxation has an advantage over consumption taxation as being more in keeping with the ability-to-pay principle and thus accords with equity considerations especially vertical equity, it does not however sit well with the preference revelation requirement which means that the free rider problem that pervades in the Philippine tax system cannot be resolved. In the Philippines, this major problem is even exacerbated by corruption in both the tax collecting agencies and the taxpayers. Furthermore, in the Philippine tax system, the fixed component of gross income taxation mollifies this plus factor of income taxation in that it dilutes income taxation's consonance with horizontal and vertical equity concerns of taxation.

In the long-run when all costs are variable, income taxation loses any advantage it has over consumption taxation in terms of both tax systems' distortional effects on equity and efficiency. As the arguments have shown, income taxation may come out to be more distortional both on equity and efficiency than consumption taxation.

Consumption taxation, provided it is based on a progressive ad valorem tax structure that will take into account the distributive objective especially in an LDC such as the Philippines where income distribution is highly unequal, has the advantage of at least drastically minimizing the non-preference revelation and its closely related free rider problems, if not eliminating them altogether. And, in the long-run if the tax structure is properly designed, it comes out better than income taxation since it has minimal distortional effect on efficiency which is butressed by the comparison of the tax systems' effects on prices, output, and employment in Secs. III and IV. In Sec. III, the distortional effect of income taxation on the labor market is absent in consumption taxation discussed in Sec. IV.

Finally, weighing the arguments pro and contra of the two tax systems, consumption taxation has an edge over income taxation even if only for its effectiveness to overcome non-preference revelation and the free rider problems that plague the Philippines' present tax system.

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