1. Concept of efficiency, equity and simplicity in tax policy

Efficiency, equity, and simplicity are three among basic principles of a modern tax system.

- Efficiency: the process of redistributing national resources to the state budget by taxation always has effects to distort the distribution of social resources in the market economy. The distortion leads to deadweight losses for the whole society. In terms of efficiency, a tax policy is considered good when it reduces those losses. On the other hand, taxation is required to minimize the distortion of social resources.

sumer behavior sees a little change (for example, essential consumer goods including food and foodstuff, pharmaceutical, garments...), they must be subject to higher tax rates. Conversely, those with high elasticity, that is, the market demand will be highly sensitive to little change in prices (high grade commodities), will be subject to lower tax rates.

Regarding equity, we know that the marginal utility of income will decline when it rises. The public concerns over price hike of essential commodities will be higher than those over price hike of high grade

Mirlees, the losses to the whole society due to income tax will be minimized if the schedule of progressive income tax has only one tax rate.

The progressive income tax with only one tax rate is understood as a tax combining a tax-free amount commonly applied to all workers and one tax rate.

We will see this issue more obviously by the following formula:

$$R = \tau (Y - M)$$

where R is a payable tax, τ is a regulatory tax rate (%), Y is the total income (thousand đồng), and M is the tax-free amount.

EFFICIENCY, EQUITY AND SIMPLICITY IN TAX POLICY

by PHẠM XUÂN HOAN

- Equity: In line with this standard, the mobilization of social resources to the state budget has to be appropriately allocated to every social member via different tax instruments. The equity should be determined horizontally, that is, those persons with equal conditions for tax payment must have the same tax treatment, and vertically, that is, those with higher income must pay higher tax.

- Simplicity: The tax policy is devised for practical application, so simplicity is a very important characteristic of a good tax policy. On the one hand, it increases feasibility in the task of tax collection, on the other hand, it allows the employment of current achievements of information technology.

2. How to devise a tax policy imposed on goods?

Regarding efficiency, a good tax policy must minimize the distortion of social resource allocation (thereby reducing deadweight losses for the country). To do this, tax policies should be designed so that the change in tax rate will be inverse proportion to the elasticity of goods demand in the market. In case of commodities with low elasticity, when their prices increase due to higher tax, the con-

commodities in terms of equity. As a result, the Government is required to impose higher tax on high grade commodities and lower tax on essential ones.

The analysis of the above viewpoints indicates the formation of a tax policy, which is both efficient and equitable, seems not feasible. We may only orientate taxation on goods toward generation of revenues for the state budget. Then our top priority in designing a tax policy on goods is the simplicity of tax law with one or a few tax rates only.

In addition, the establishment of tax policy on goods with only one or a few tax rates also overcomes the current shortcomings in tax policy that it is very difficult to determine some items on the boundary of high and low tax rates.

3. How to establish tax policy on income?

Regarding efficiency, when they are subject to income tax, the workers tend to reduce their working hours and increase leisure time because then the leisure time as a kind of goods in the labor market will become cheaper, therefore, the workers use it more. This change more or less depends on each working cohort with different income. According to Jame

$$R = -\tau M + \tau Y$$

Because M is a fixed tax-free amount for everybody, τ is a regulatory tax rate, also fixed, so we can replace τM with β (fixed), then:

$$R = -\beta + \tau Y \quad (i)$$

The real tax rate will be the payable tax divided by taxable income and equal to:

$$t = R/Y = \tau - (\beta/Y) \quad (ii)$$

Calculating the partial derivative of real tax rate (t) by income Y, we obtain:

$$d(t)/d(y) = \beta/Y^2 > 0 \quad (iii)$$

The formula (ii) indicates the real tax rate is limited by the regulatory tax rate t. When the income Y soars very sharply, the real tax rate t will approximate to the regulatory tax rate τ.

The formula (iii) indicates the real tax rate is progressive at a speed of $\beta/Y^2 > 0$.

As such, the progressive income tax with one tax rate and a tax-free amount partly contains all three basic standards of a tax policy as follows:

- It is an efficient tax policy because its losses to the society is minimal (according to James Mirlees).

- It is an equitable tax policy because those persons who have the same income will pay the same tax,

those with higher income will be subject to higher real tax rate (the formula iii). Moreover, although the real tax rate is higher, its ceiling rate is still the regulatory tax rate (the formula ii).

- It is a simple tax policy because there is only one regulatory tax rate (associated with an only tax-free amount).

The evidence shows the above progressive income tax with one tax rate is not a perfect tax as concretely indicated in the following example. However, this is a food for our thought in terms of science.

4. Application to the analysis of Vietnam's income tax policy

The Ordinance on Income Tax effective from July 1, 2001 regulated five progressive tax rates applied to high-income Vietnamese nationals as follows:

Income	Regulatory tax rate
Below 3 million	0%
3 to 6 million	10%
6 to 9 million	20%
9 to 12 million	30%
12 to 15 million	40%
Over 15 million	50%

In addition, the ordinance also stipulates the additional tax rate of 10% imposed on the excess of 15 million if the after-tax income exceeds 15 million. However, we temporarily ignore the additional tax rate for our research purpose.

Based on regulations of the Ordinance, in Table 1, income earners in the column 1 will pay tax as stated in the column 2 and thus their real tax rate will be calculated in the column 3.

Method 1

We assume we apply the progressive income tax with one tax rate and a tax-free amount for all workers, what will happen?

We make linear regression of the column 2 by the column 1, we have the following regressive result:

R = -2,065.6 + 0.3897Y
=>   M = -2,065.6/0.3897
       = -5,300 (thousand đồng)

The tax-free amount calculated by this method is some 5.3 million đồng and the regulatory tax rate 39% (Notably, the tax-free amount and the regulatory tax rate which are found depend on the figures of public income in the column 1, Table 1. Here, the author assumes most of Vietnamese have monthly income under VND40 million).

As such, the method 1 may be ap-

plied, that is, to use a kind of progressive tax with the standard tax-free amount of VND5.3 million and one only tax rate of 39%.

If applying this method, those having income stated in the column 1 will have to pay tax in the column 4 and therefore, their real tax rate is calculated in the column 5.

In comparison with the regulatory tax rate (the column 3), the payable tax will be higher for those earning an income from 6 to 22 million. This is a shortcoming of the progressive tax with one tax rate because the policy has high progressive rates for those having rather high income. However, it may avoid overregulation by tax for the high-income earners.

Method 2

We assume R has linear relation not only with Y but also with Y^2. Then making the linear regression of the column 2 by the column 1, we find the following equation:

$R = -500 + 0.189\ Y + 0.829 \cdot 10^{-5} \cdot Y^2$

The second method is assumed as follows: To design an income tax model with a free-tax amount of VND0.5 million, a regulatory tax rate of 11% and a progressive coefficient of 0.00000829.

Payable tax = [(taxable income x 11%) + (taxable income)^2 x 0.00000829] - tax-free amount (VND0.5 million).

The real payable tax and real tax rate calculated by this method is indicated in the columns 6 and 7.

We can see clearly this method has a real tax rate (column 7) approximate to the real regulatory tax rate (column 3) within the monthly income of VND30 million. Above this threshold, the real tax rate increases very fast, for example, the real tax rate is 51% for a monthly income of VND50 million, 60% for VND60 million, and 68% for VND70 million. To avoid the collection of high tax from these high-income cohorts, the method should be associated with a ceiling tax rate. For example, an income of more than VND50 million will be subject to one only tax rate of 50%.

5. Conclusion

When designing a tax policy, we should deliberate and choose different targets. The tax policy for commodities should aim at increasing revenues for the state budget, it shouldn't be associated with social or industry policies. Thereby, we will have a simple policy of indirect tax which has less tax rates and is easily administered. The two methods mentioned above indicate the Government still collect the progressive income tax logically by its simple policy of progressive income tax with less tax rates ∎

Table 1: Income tax by different calculations (thousand đồng)

Taxable income	Current calculation		New calculation 1		New calculation 2	
	Payable tax	Real tax rate	Payable tax	Real tax rate	Payable tax	Real tax rate
1	2	3 = 2/1	4	5 = 4/1	6	7 = 6/1
0	0	0	0	0	0	0
3,000	0	0	0	0	0	0
3,500	50	1.43	0	0	0	0
4,000	100	2.50	0	0	73	0
5,500	250	4.55	78	1.42	350	6.37
6,000	300	5.00	273	4.55	452	7.54
7,200	540	7.50	741	10.29	715	9.92
8,500	800	9.41	1,248	14.68	1,025	12.06
9,000	900	10.00	1,443	16.03	1,152	12.81
10,200	1,260	12.35	1,911	18.74	1,474	14.45
11,500	1,650	14.35	2,418	21.03	1,850	16.09
12,000	1,800	15.00	2,613	21.78	2,002	16.68
13,500	2,400	17.78	3,198	23.69	2,482	18.39
14,000	2,600	18.57	3,393	24.24	2,651	18.93
14,200	2,680	18.87	3,471	24.44	2,719	19.15
15,000	3,000	20.00	3,783	25.22	3,000	20.00
20,000	5,500	27.50	5,733	28.67	4,996	24.98
22,000	6,500	29.55	6,513	29.60	5,910	26.87
30,000	10,500	35.00	9,633	32.11	10,231	34.10
35,000	13,000	37.14	11,583	38.09	13,470	38.49
40,000	15,500	38.75	13,533	33.83	17,124	42.81
45,000					21,192	47.09
50,000					25,675	51.35
60,000					35,884	59.81
70,000					47,751	68.22