

NBER WORKING PAPER SERIES

THE JAPANESE TAX REFORM AND THE EFFECTIVE  
RATE OF TAX ON JAPANESE CORPORATE INVESTMENTS

John B. Shoven

Working Paper No. 2791

NATIONAL BUREAU OF ECONOMIC RESEARCH  
1050 Massachusetts Avenue  
Cambridge, MA 02138  
December 1988

This paper was presented at the third annual NBER conference on "Tax Policy and the Economy" held in Washington, D.C., November 14, 1988. I am indebted to Tatsu Sakai of the Ministry of Finance, to Kazuo Yagi of the Foundation for Advanced Information and Research (FAIR), Japan, and to Shuzo Nakamura, Chief Economist of the Institute of Fiscal and Monetary Policy, Ministry of Finance, Japan for sending me materials regarding the Japanese Tax Reform. I also wish to thank Mervyn King for making his working paper on the subject available. This research is part of NBER's research program in Taxation. Any opinions expressed are those of the author not those of the National Bureau of Economic Research.

THE JAPANESE TAX REFORM AND THE EFFECTIVE  
RATE OF TAX ON JAPANESE CORPORATE INVESTMENTS

ABSTRACT

Japan is in the midst of reforming its national level individual and corporation income tax systems. Last year it abandoned its large system of tax free savings accounts and lowered individual marginal tax rates. A much more radical proposal is currently being advocated by the government and is well along the way towards passage in the Diet. The new proposal would significantly lower the statutory rate for the corporation income tax, lower individual rates further and increase the tax thresholds, tax capital gains on securities for the first time, and introduce a type of value added tax. As a package, this would be the most important change in the Japanese tax system since 1950.

This paper presents a brief summary of the Japanese income tax system and the changes in it that have been enacted or proposed. It also discusses and evaluates the pressures for reform, both domestic and international. Finally, the paper looks at how the taxation of capital income in Japan has changed since 1980 and how it compares to the U.S. taxation of capital income after our 1986 tax reform. One major finding of the paper is that the effective marginal tax rate on corporate capital income in Japan has increased sharply since 1980 from roughly five percent to about 32 percent. This change, which still leaves the marginal taxation on corporate investments somewhat lower in Japan than in the U.S., is due to both changes in the Japanese tax code and the virtual elimination of inflation in Japan.

John B. Shoven  
Department of Economics  
Stanford University  
Stanford, CA 94305

## 1. Introduction

Japan is in the midst of reforming its national level individual and corporation income tax systems. Last year it abandoned its large system of tax free savings accounts and lowered individual marginal tax rates. A much more radical proposal is currently being advocated by the government and is well along the way towards passage in the Diet. The new proposal would significantly lower the statutory rate for the corporation income tax, lower individual rates further and increase the tax thresholds, tax capital gains on securities for the first time, and introduce a type of value added tax. As a package, this would be the most important change in the Japanese tax system since 1950.

This paper presents a brief summary of the Japanese income tax system and the changes in it that have been enacted or proposed. It also discusses and evaluates the pressures for reform, both domestic and international. The U.S. Tax Reform Act of 1986, with its low marginal tax rates, is among the forces for change in Japan. Finally, the paper looks at how the taxation of capital income in Japan has changed since 1980 and how it compares to the U.S. taxation of capital income after our 1986 tax reform.

Developments in the Japanese economy are worth monitoring if only because it is the second largest economy in the world and its economic performance is widely admired. It has achieved high economic growth rates, a recently stable price level, a trade surplus, and a high level of national saving and investment. In previous work (Shoven and Tachibanaki, 1988) I found that in 1980 Japan had a much lower tax wedge between the

return on investments and the return enjoyed by investors than in the U.S.. That is, in Japan the government took a smaller fraction and the investor a larger fraction of the return on a new marginal investment. One question that this paper addresses is whether that lower level of effective taxation on incremental capital income still persists in Japan in 1988 and will continue to do so if the proposed tax reforms are enacted.

## 2. The Japanese Tax System

Japan and the U.S. have the lowest overall tax burden as a percent of GDP of the major OECD countries listed in Table 1. Japan's figure (28.0 percent) is slightly lower than that for the U.S. Japan also generates far less revenue as a fraction of GDP from the household level income tax than does the U.S. In fact, Japan's revenue from the individual income tax is less than any of the countries except France. Its reliance on sales and consumption taxes is the lowest among the eleven countries. In contrast, its corporation income tax raises the highest fraction of GDP (well over twice the comparable U.S. figure). It is this heavy use of the corporation tax which made my previous result of light taxation of income from new Japanese capital investments surprising.

As in the U.S., there are three levels of taxation in Japan: the national level, the prefecture (state) level, and the municipal level. If we exclude the social security payroll contributions, the individual income

**Table 1**  
**Tax Revenues as a Percent of Gross Domestic Product by Source, 1985<sup>a</sup>**

Tax Source

Country	Individual income	Corporate income	Consump- tion <sup>b</sup>	Payroll	Property	Wealth <sup>c</sup>	Total
Percent of gross domestic product							
Sweden	19.5	1.8	14.7	13.8	0.4	0.3	50.5
Denmark	25.5	2.4	2.3	17.7	0.9	0.5	48.5
France	5.8	2.0	20.8	15.4	1.2	0.4	45.6
Netherlands	8.8	3.1	19.7	12.1	0.8	0.4	44.9
United Kingdom	9.9	4.9	6.7	12.4	4.0	0.2	38.1
Germany	10.8	2.3	13.8	9.9	0.4	0.5	37.7
Italy	9.5	3.3	12.2	9.6	*	0.1	34.7
Canada	11.9	2.9	4.4	10.9	2.9	0.3	33.2
Australia	13.7	2.8	1.7	10.8	1.4	*	30.4
United States	10.4	2.1	8.6	5.2	2.7	0.2	29.2
Japan	6.9	5.9	8.5	4.8	1.6	0.3	28.0

Source: Pechman (1988), page 2. Original data from Organization for Economic Cooperation and Development, Revenue Statistics of OECD Member Countries, 1965-1986 (Paris: OECD, 1987). Figures are rounded.

\* Less than 0.05 percent.

a. Includes national and local taxes.

b. Includes sales, value-added and excise taxes, taxes on imports and exports, taxes on transfers of property and securities, other transaction taxes paid by enterprises, and miscellaneous other taxes.

c. Includes annual net wealth taxes and estate, inheritance, and gift taxes.

tax raised 40.5 percent of the revenue at the national level, whereas the corporation tax raised 30.6 percent. Of the remaining 28.9 percent, liquor taxes accounted for 4.8 percent, gasoline taxes 3.8 percent, and the inheritance and gift tax 2.7 percent. The final 15.6 percent of revenues were mainly raised by a wide variety of excise taxes. Corporate and individual income is subject to taxation at both the prefecture and municipal levels (primarily according to the "inhabitants tax"). These local governments also raise revenues through property taxes, automobile taxes, an enterprise tax, and a wide array of excise taxes.

The first thing to note about the national level individual income tax is that the individual is the taxable entity rather than the household as in the U.S. For the average single earner household, this difference is not very important. In fact, the tax of most wage earners is automatically calculated through a sophisticated withholding mechanism. Most individuals whose income is predominately wages do not even have to fill out a tax return. However, the individual basis of taxation does open up the possibility of income splitting for the self employed small businessman and those with significant sources of capital income.

The marginal tax rate structures for the national level individual income tax are shown in Table 2 for 1986, for 1987 (after the September 1987 tax revisions), and for the 1988 proposal of the Ministry of Finance. In 1986 there were 15 rate brackets with marginal rates ranging from 10.5 to 70 percent; in 1987 these were replaced with 12 brackets ranging from 10.5 percent to 60 percent; the proposal now under consideration would replace these with five brackets with marginal tax rates from 10.0 to 50

Table 2

Individual Income Tax Rates, 1986, 1987 and Proposed 1988

1986 Taxable Income (thousands of yen)	Rate (percent)	1987 Taxable Income (thousands of yen)	Rate (percent)	After 1988 Reform Taxable Income (thousands of yen)	Proposed rate
0-500	10.5	0-1,500	10.5	0-3,000	10.0
501-1,200	12.0	1,501-2,000	12.0	3,001-6,000	20.0
1,201-2,000	14.0	2,001-3,000	16.0	6,001-10,000	30.0
2,001-3,000	17.0	3,001-5,000	20.0	10,001-20,000	40.0
3,001-4,000	21.0	5,001-6,000	25.0	20,001 and over	50.0
4,001-6,000	25.0	6,001-8,000	30.0		
6,001-8,000	30.0	8,001-10,000	35.0		
8,001-10,000	35.0	10,001-12,000	40.0		
10,001-12,000	40.0	12,001-15,000	45.0		
12,001-15,000	45.0	15,001-30,000	50.0		
15,001-20,000	50.0	30,001-50,000	55.0		
20,001-30,000	55.0	50,001 and over	60.0		
30,001-50,000	60.0				
50,001-80,000	65.0				
80,000 and over	70.0				

Source: Watanabe (1988).

percent. The number of rate brackets for the inhabitants tax (local income tax) is proposed to be reduced from fourteen (with rates ranging from 4.5 percent to 18 percent) to four (with rates ranging from 5 to 15 percent). The top combined rate was 88 percent in 1986 and would be 65 percent under the current proposal.

The puzzle of why the marginal rates for the individual income tax are relatively high and revenues relatively low is partially answered by the generous levels of the tax thresholds (the level of income below which no tax is paid). Table 3 shows that the threshold level of wage and salary income for a one earner family of four will have increased by almost 36 percent in two years if the latest proposals are adopted. The proposed tax threshold for a family of four is 3,198,000 yen or \$26,000 at the current exchange rate (123 yen/dollar), more than twice the tax threshold in the U.S. for a family of the same composition (the sum of the U.S. system's standard deduction and personal exemptions for a family of four was \$8,300 in 1986 and \$12,800 in 1988). Note that the average annual wage income in Japan is roughly 4 million yen. It appears that the Japanese have used their relatively low reliance on individual income tax sources to increase the progressivity of their tax system rather than to enjoy the efficiency that could have come from lower marginal rates. This feature of relatively high income thresholds is long standing and was one of the primary reasons why Pechman and Kaizuken (1976) found that only 33 percent of Japanese national income was reported as taxable income in 1970, compared with 59 percent for the U.S. at that time. Despite the high top rates, note that Tables 2 and 3 together imply that under the new proposal a worker with a

Table 3

Income Tax Threshold for a family of four (employee, spouse, two children, one between 16 and 22 years old).

	1986 (thousands of yen)	1987 (thousands of yen)	After 1988 Reform (thousands of yen)
Basic Exemption	330	330	350
Exemption for Spouse	330	330	350
Special Exemption for Spouse	-	165	350
Exemption for Children	330 330	330 330	350 450
Employment income <sup>a</sup> deduction	872	951	1,124
Deduction for Social insurance premiums	165	183	224
	<u>2,357</u>	<u>2,619</u>	<u>3,198</u>

Source: Ministry of Finance

<sup>a</sup> 40% of first 1,650,000 yen in salary plus 30% of amount between 1,650,000 and 3,300,000 yen plus 20% of amount between 3,300,000 yen and 6,000,000 yen plus 10% of amount between 6,000,000 and 10,000,000 yen plus 5% of the amount over 10,000,000 yen. The minimum employment income deduction is 570,000 yen.

family of four would remain in the 10 percent national income tax bracket until his earnings reach 7,162,650 yen or \$58,233. This income level (where the Japanese rate will jump from 10 to 20 percent) is at least twenty percent higher than the income level for a family of four where the U.S. rate jumps from 15 to 28 percent. About 90 percent of all workers in Japan will face the lowest marginal rate and many will remain in the lowest tax bracket for their entire planning horizon. This last feature effectively eliminates the problem of timing income so as to minimize taxes.

In principle, the Japanese individual income tax system applies to aggregate income (such as interest income, dividend income, rents, business income, wages, retirement income, timber income, capital gains, etc.). In practice, many of these income sources are eligible for special treatment. Retirement income and timber income are always taxed separately, and interest, dividends, and capital gains are often taxed separately at the taxpayer's option.

The treatment of interest income has been amongst the most generous of these special treatments. Until the September 1987 tax reforms, there were two special features of the law favoring interest income. First, Japanese taxpayers were allowed to have four types of tax free savings plans offering tax free interest. The types of tax free interest were

- i. Interest accruing from postal savings when the principal does not exceed 3 million yen.

- ii. Interest income or distribution of profits from deposits, bonds, and debentures, open-end bond investment trusts, or specific stock investment trusts if the amount of principal in total does not exceed 3 million yen. This provision is called the "Small Saving Tax Exemption" ("Maruyu" in common Japanese).
  
- iii. Interest on central-government and local-government bonds, not exceeding 3 million yen in total face value.
  
- iv. Interest income or distribution of profits received in accounts set up for the formation of employees' assets, particularly for housing and pensions. Various forms of monetary assets are eligible for this exemption. It requires, however, that the employees commit to savings contracts that are withheld from their wages and that the total amount of principal does not exceed 5 million yen.

Summing up these four items, an individual could have had up to 14 million yen (\$113,821) in nontaxable forms. If the household had several members, the amount of nontaxable savings could be increased accordingly. A family of four could have legally held over \$455,000 in tax free saving vehicles. Further, there was widespread evidence of abuse of this system, with accounts being held in fictitious names. Nagono (1988) estimates that over 70 percent of all personal saving took advantage of these tax exempt vehicles with 13.5 trillion yen (\$110 billion) escaping the tax base.

The tax exempt saving system was abolished in the 1987 reform except for those deemed truly to need social assistance (the elderly, single parent families, and the handicapped). It has been replaced with a flat tax on all interest income (withheld at source) of 20 percent, with 15 percent collected for the national government and 5 percent for local taxes.

The second tax advantage offered on interest income is separate taxation. Even before 1987, interest received on savings deposits and similar accounts (other than tax exempt ones) was subject to a separate 20 percent withholding tax at source and then could be excluded from taxable income in filing a return. For other forms of interest income (bond interest, etc.) the taxpayer could aggregate it with taxable income or pay a separate tax of 35 percent. None of interest income was subject to the marginal rates ranging up to 70 percent shown in the rate schedule. This separate taxation option will remain available if the present reform package is adopted.

The taxpayer also has the option of separate taxation of dividend income. Again, this effectively shields the dividend recipient from the highest marginal tax rates in Table 2. For dividends the marginal rate for the optional separate taxation is 35 percent as long as the recipient owns less than five percent of the outstanding equity and as long as the amount of dividends received from that corporation is less than 500,000 yen (roughly \$4,000). Rich investors can avoid these limits through diversification. However, separate taxation is unavailable on the dividends of closely held corporations. For small dividends, there is even a better treatment. If an individual receives a dividend of less than

100,000 yen (\$800) from a company (excluding mutual funds) then he may elect separate taxation at the marginal rate of 20 percent.

In addition to the advantages of separate taxation, dividends are lightly taxed at the individual level due to another feature of the individual tax law. For taxpayers with ordinary taxable income of less than 10 million yen (\$81,300), a tax credit amounting to ten percent of dividends received is allowed. For those with higher taxable incomes, the credit is reduced, although it always exceeds five percent. The basic ten percent credit means that the maximum marginal rate of national level taxation of dividends (which occurs under separate taxation) is effectively 25 percent (10 percent for small dividends).

Capital gains on securities are not taxed in Japan, although the current proposal would change this. It would give taxpayers the option of paying a tax equal to one percent of the value of the stock transaction or to pay a separate tax on the actual gain at the rate of twenty percent. The one percent of sales value option implies that capital gains on securities will still be very lightly taxed in Japan relative to their current treatment in the U.S. (fully taxable at ordinary rates upon realization). Capital gains on land and buildings are taxed separately in Japan with the terms depending on the holding period.

Before the 1987 tax reform, corporate capital return was extremely lightly taxed at the personal level in Japan. Most of interest income completely escaped taxation as did all of capital gains on securities. Dividends had the option of separate taxation and thus escaped the marginal rates that went up as high as 70 percent. If the Ministry of Finance proposal is adopted, this will have changed substantially. Almost

all interest income will be separately taxed at a 20 percent rate. However, capital gains will still be lightly taxed and dividends will still be eligible for a tax credit and optional separate taxation with a 35 percent rate.

The general outline of the corporate income tax in Japan is not terribly different from the United States. As in our country, the tax base is corporate profits or the excess of gross revenue over total costs. Included in costs are the interest payments on debt obligations (both bonds and bank loans). In other words, interest expenses are deductible as in the United States. The corporate tax is approximately a flat rate system (also as in the United States) with slightly lower rates applying to only very small corporations.

The Japanese corporation income tax differs from the American one in its treatment of dividends paid and inter-corporate dividends. The current Japanese tax system attempts to partially offset the double taxation of corporate equity income by taxing dividends paid at a lower rate than retained earnings. The current national rates are 42 percent for retained earnings and 32 percent for dividends paid (reduced in 1987 from 43.3 and 33.3 percent, respectively). The effective rates including local taxes are approximately 55 and 45 percent respectively. The Ministry of Finance estimates the overall marginal corporate tax rate on equity income as 51.55 percent in 1988 (down from 52.92 percent in 1986). This compares to their estimate of the U.S. rate (including state corporation income taxes) of 40.34 percent.

The current reform proposal would phase out this separate treatment of dividends and returned earnings. It proposes that the national corporation

income tax rate be set at 37.5 percent for 1990 and beyond. While this is only slightly higher than the U.S. corporate rate of 34 percent, the difference widens when you take state and local level taxation into account. The Ministry of Finance estimates that the total Japanese corporate rate would be 49.99 percent under their proposals compared to the U.S. figure of 40.34 percent.

Unlike the U.S. tax system, the Japanese corporation income tax has always exempted intercorporate dividend income from the tax base, thus avoiding double taxation. However, the new proposal adopts the U.S. practice of partial taxation of dividends received by a corporation. It proposes including 10 percent of corporate dividends received in the corporate tax base in 1989, with 20 percent (the U.S. figure) inclusion in 1990 and thereafter.

The Japanese tax system permits several types of tax-free reserves which serve to reduce reported corporate earnings and therefore taxes. These reserves include the (1) reserve for bad debts, (2) reserve for returned goods, (3) reserve for employee bonus payments, (4) reserve for retirement allowances, (5) reserve for repairs and product guarantees, (6) reserve for overseas market development for small and medium-sized corporations, etc. In 1986 the reserve fund for price fluctuation was abolished.<sup>1</sup>

It is the interaction of the Japanese corporation and individual income tax which can create very low effective taxation of corporate capital income. Given that the corporate statutory rate is relatively high and

---

<sup>1</sup> As something of an aside, it might be noted that these reserve accounts lower corporate earnings and may partially explain the traditionally high price-earnings ratios on Japanese equity securities.

the individual rates on interest relatively low, interest payments are in effect subsidized. The cost to a corporation of making a 10 percent interest payment will be roughly 5 percent even if the new proposed rate structure is adopted. On the other hand, the investor will receive 8 percent (after the 20 percent tax). This net subsidy clearly reduces the cost of capital. It also is less effective at lower nominal interest rates.

### 3. The Pressures for Reform

The previous section described most of the elements of the enacted and proposed tax reform. Those include virtual elimination of the tax free savings account system except for people in special circumstances, reducing the number of brackets and the highest rates for the individual income tax, raising the individual income tax's threshold income levels, lowering the basic rate of the corporation income tax and eliminating the different treatment of dividends paid and retained earnings, curtailing the use of corporation reserve accounts, and introducing a tax on intercorporate dividends.

There is one additional major component of the proposed tax reform. That is the introduction of a new consumption-type value added tax. The current proposal is for a broad based 3 percent tax with very limited exemptions. There would be an exemption for very small enterprises (sales less than \$240,000) and a simplified procedure available to small and medium-sized firms (sales under \$4 million). A large number of specific excise taxes (the commodity tax, the playing-cards tax, sugar excise tax, admission tax, travel tax, electricity tax, timber delivery tax, etc.)

would be repealed. The commodity tax currently applies to a number of luxury goods. However, in an economy as dynamic as Japan's, many of the taxed items (e.g. air-conditioners, television sets, refrigerators, etc.) are no longer appropriately considered luxuries.

There are a number of separate pressures for Japanese tax reform that can be identified. These include compliance problems with the existing tax system and a widespread feeling that it is unfair, international trade frictions and pressures encouraging the Japanese to adopt a more pro-consumption tax system, concern about the international mobility of factors, particularly capital and entrepreneurs, in the face of a Japanese system with comparatively high marginal tax rates, projections that government revenues will need to expand significantly to deal with the rapid growth of the retired population, and concern that corporate tax revenues would be jeopardized (through transfer pricing and financial arbitrage) unless the Japanese corporation income tax were roughly harmonized with the recently changed U.S. tax system.

a. Compliance Problems and Fairness Considerations

Fairness issues are probably the biggest motivator of the Japanese reform movement. The same may well have been true in the U.S. One very important aspect of the Japanese compliance and fairness problem is referred to as "10-5-3" or sometimes "9-6-4". These numbers refer to the fact that it is commonly believed that 90-100 percent of the income of workers is subject to tax, whereas only 50-60 percent of business income (particularly the income of small businesses) is

reported, and only 30 to 40 percent of farm income is subject to tax. This widely perceived inequality has been documented in the research of Ishi (1984) and Honma (1984). The problem is thought to have gotten worse in the past twenty years (Noguchi, 1988). The introduction of a VAT is thought to help this 10-5-3 problem in two ways. First, the required record keeping and invoice reporting will improve income reporting on the income tax. And, second, the VAT itself will be borne by all consumers relatively evenly.

A second aspect of the compliance problem is that there is no taxpayer identification scheme (similar to the U.S. social security number or taxpayer ID number) in Japan. This facilitated the abuse of the Maruyu saving system and adds to the general impression that the wealthy could conceal income from taxation. There has been tremendous political opposition to the introduction of an ID system. The result has been increasing use of a withholding at source system (now for interest income as well as wages and proposed for capital gains). It is hoped that the combination of withholding taxes and a VAT will considerably improve the fairness of the Japanese tax system.

b. The Aging Society

The Japanese position in Table 1 as the least taxed major OECD country is largely due to its relatively light social security burden. Japan has one of the lowest fractions of the populations which is elderly, but it also is aging faster than any other major economy. The upper panel of Table 4 shows that the number of people of working age

per elderly person in Japan is projected to fall from 5.9 in 1985 to 2.3 in 2020. This ratio is, of course, of utmost importance for pay-as-you-go national retirement schemes such as those in Japan and the U.S. Some of the expenses of Japanese social security coverage are paid for out of general revenues and the expectation is that the reliance on general revenues will have to be increased. The lower panel of Table 4 shows that while Japan has had the lowest fraction of elderly in their population between 1950 and 1985, by 2000 their elderly fraction will be more than 30 percent greater than in the U.S. and by 2020, they will have the highest fraction of elderly of the five countries shown. It is projected that the fraction of the Japanese population which will be over 65 will be more than twice the fraction that are currently elderly in either the U.S. or Japan. The 28 percent total tax load shown in Table 1 is expected to rise to about 50 percent, unless the design of the social security system is altered. The proposed new VAT, which would be introduced with an initial 3 percent rate, is thought to have the potential to be a major future contributor to the necessary revenues to deal with the aging population. If it is to be so, of course, it will be necessary to raise the tax rate markedly.

c. Labor Supply and the Brain Drain Fear

Reducing the progressivity of the individual income tax is an important and intentional element of the Japanese tax reform. Noguchi (1988) reports that high salaried workers whose incomes are roughly 10

Table 4  
The Aging of Japan

	1985	2000	2010	2020
Ratio of Working Age Population (20-64) to Elderly Population (65+)	5.9	3.7	2.8	2.3

Ratio of Elderly (65 and over) to Total Population  
(in percent)

	1950	1970	1985	2000	2020
Japan	4.9	7.1	10.3	16.3	23.6
West Germany	9.4	13.2	14.5	16.7	21.2
France	11.4	12.9	12.4	14.7	18.0
United Kingdom	10.7	12.9	15.1	15.3	17.8
United States	8.1	9.8	11.7	12.0	15.4

Source: Watanbe (1988), page 13.

million yen (\$81,300) or more have been exerting strong political pressure for relief. This pressure was increased by the flattening of the marginal tax rate schedules in both the U.S. and the U.K.

There has been little opposition to lowering the top marginal rates. Due to the possibilities for separate taxation, they are only applicable to the high salaries of top executives, entertainers, athletes, etc. There seems to be concern about the labor supply effects of the high tax rates. More pointedly, there is concern about the location decisions of high tech international firms. Hasegawa (1988) states that "the burden it (the Japanese tax system) imposes on high-income earners is undeniably an impediment to the flow of elite business personnel into Japan." He feels that Japanese businesses now are trying to lure high-caliber foreign talent to Japan, but that they are finding both traditional labor practices and the tax systems to be severe handicaps. Further, he worries about a "brain drain" away from Japan as executives find that they can locate facilities abroad with lower labor costs and more attractive tax environments.

d. Financial Arbitrage and Transfer Pricing

At least as worrisome as a loss of high skilled labor (or an inability to attract top talent to Japan) is a possible capital outflow due to Japan's relatively steep corporate tax rate. With the U.K. having lowered its statutory corporate rate from 45 to 35 percent in 1986 and with the U.S. having dropped its rate from 46 to 34 percent,

many Japanese are worried about their international competitive position with respect to this tax.

The problem of having a high statutory corporate rate is not only that capital will locate elsewhere, but also that reported domestic profits of international companies may be transferred abroad. Multinational companies have a strong incentive to borrow in countries with high tax rates in order to lower equity profits there. Further, the use of internal transfer pricing can shift reported profits from higher rate countries than those with lower rates. It is possible that high corporate rates thus become counter-productive in terms of generating revenue. This type of argument, and the concerns of transfer pricing and international borrowing, have been major pressures for lowering corporate rates in Canada as well as in Japan.

If the current reform is adopted, Japan, the U.S., and the U.K. will have very similar rates of corporate taxation at the national level. The rates will range from 34 to 37.5 percent. Such a narrow range probably stops most accounting practices designed solely for relocating profits.

#### 4. The Effective Rate of Taxation on Corporate Capital Income

My earlier work with Tachibanaki (Shoven and Tachibanaki, 1988) found that the Japanese government got a very small percentage (4.4%) of the return on domestically financed incremental investments in 1980, while the investor (on average) got 95.6 percent of the return. In this section, the methodology that gave us that finding is summarized and the results are

recalculated for 1985 and for the 1988 proposed reform package. The new results differ dramatically from the earlier study.

The Shoven and Tachibanaki study used the same methodology as King and Fullerton (1984). What is examined is the total tax wedge between the return of an incremental investment and the return realized by the investor or financier. The approach takes into account both company level taxation and personal level taxation.

In this paper I use exactly the same methodology. In fact, I use the "PTAXJAP" software made available by Mervyn King. This software adapts the King-Fullerton approach to the Japanese tax system. The input tax parameters are those I developed with Tachibanaki, appropriately updated to 1985 and to reflect the reform proposal.

As in Shoven-Tachibanaki (1988) and King-Fullerton (1984), the tax wedge and effective tax rate is calculated separately for different types of assets, financial instruments, industries, and type of investor. Three types of assets (machinery, buildings, and inventories), three financial instruments (debt, retained earnings, and new equity issues), three industries (manufacturing, commerce, and other, which is mostly construction, transportation, communications, and utilities), and three classes of investors (households, tax-exempt institutions, and insurance companies) are distinguished. All told then, there are three possibilities in each of four categories, which means that there are 81 different combinations. All investments, are assumed to earn a real return of 10 percent. The software calculates the net return earned by the investor for each of the 81 combinations, as well as the total taxes collected for each. Features of the tax law that are taken into account

include accelerated depreciation, inventory accounting, investment tax credits, the deductibility of interest payments from the corporate income tax, the treatment of capital gains, and the interaction of taxation and inflation in the tax system.

Table 5 contains the effective tax rate (the tax wedge divided by the gross real return) results for Japan for 1985. The figures are calculated for three rates of inflation, 0 percent, 5 percent, and 10 percent. The figures in each row refer to the average marginal tax wedge for 27 different combinations of investment flows. For example, the number for "machinery" with 5 percent inflation is 18.9 percent. This is the average marginal tax wedge for machinery investments in three different industries, using three sources of finance, and for three different classes of owners. Similarly, the number for debt (-28.6 percent) is the average for three types of debt financed assets in three industries with three different classes of owners. The pattern shown in Table 5 for 1985 is quite similar to the results in Shoven and Tachibanaki (1988) for 1980. Both sets of results show that the overall effective marginal tax rate was low at 10 percent inflation, but substantially higher at lower rates of inflation. The main reason for this inflation effect is that the effective tax rate on debt financed investments declines rapidly as nominal interest rates rise. In 1985 Japan had a total (national plus local) corporate tax rate of 57 percent for retained earnings. Given that interest payments were deductible from this tax and were very lightly taxed at the individual level, a net subsidy resulted for debt financed investments. The effective tax rate for equity financed investments actually rises with inflation, primarily due to unindexed depreciation deductions.

Table 5  
 Effective Marginal Tax Rates (%)  
 in Japan, 1985

	Inflation Rate		
	Zero	Five	Ten
<b>Asset</b>			
Machinery	23.0	18.9	10.0
Buildings	27.2	18.4	3.9
Inventories	39.6	23.0	6.2
<b>Industry</b>			
Manufacturing	30.2	23.8	13.8
Other Industry	24.0	10.4	7.6
Commerce	35.0	23.3	9.7
<b>Source of Finance</b>			
Debt	2.9	-28.6	-64.8
New Share Issues	57.6	72.2	84.7
Retained Earnings	51.9	60.8	67.1
<b>Owner</b>			
Households	23.8	9.9	-7.6
Tax-Exempt Investors	26.6	15.1	0.1
Insurance Companies	57.8	70.0	78.8
<b>Overall</b>	29.6	20.1	7.0

Despite the fact that the pattern of the numbers in Table 5 is similar to those for 1980, the "best guess" effective marginal rate of taxation on corporate investments in Japan changed considerably between 1980 and 1985. Shoven and Tachibanaki (1988) estimated the overall figure to be 4.4 percent in 1980. However, that result depended on a specification of the expected rate of inflation which was taken as the average of the inflation rates experienced in the 1970s (9 percent). By 1985, Japan had experienced several years of 2 percent inflation. If that is taken as the expected rate of inflation, the overall tax rate for 1985 is about 26 percent.

The effective tax rate calculations for the current proposal are shown in Table 6. The increased tax on interest income, the reduced corporate tax rate, the elimination of the differential between retained earnings and dividends, and the new capital gains tax on profits on securities are all captured in the model. The tax reform would slightly increase the effective corporate tax rate at zero inflation and would make the tax rate much less sensitive to inflation. The large potential subsidy to debt financed investments is largely eliminated by the reduction in the statutory corporate tax rates and by the increase in the taxation of interest income at the individual level.

The "best guess" overall effective tax rate for new corporate investments in Japan after the implementation of the 1988 tax reform proposals is 31.8 percent. The reason that this number is chosen from the bottom row of Table 6 is that there is now a remarkable degree of price level stability in Japan. Consumer prices rose 0.6 percent in 1986, 0.1 percent in 1987, and are expected to increase about 0.4 percent in 1988.

Table 6  
 Effective Marginal Tax Rates (%)  
 in Japan under the 1988 Tax Proposal

	Inflation Rate		
	Zero	Five	Ten
<b>Asset</b>			
Machinery	26.5	27.8	25.7
Buildings	30.1	28.2	22.2
Inventories	39.7	32.3	24.5
<b>Industry</b>			
Manufacturing	31.9	31.5	28.3
Other Industry	28.0	23.2	15.4
Commerce	36.0	32.1	26.3
<b>Source of Finance</b>			
Debt	13.5	-2.1	-2.1
New Share Issues	57.3	75.0	91.2
Retained Earnings	46.5	54.7	60.2
<b>Owner</b>			
Households	27.3	21.9	13.9
Tax-Exempt Investors	23.6	15.8	5.3
Insurance Companies	54.7	67.7	78.0
<b>Overall</b>	<b>31.8</b>	<b>29.4</b>	<b>24.3</b>

The overall conclusion that I draw from Table 5 and 6 is that the effective rate of taxation of new investment in Japan has risen substantially since 1980. Most of that increase has taken place because of the elimination of inflation. The tax reform itself would increase the effective tax rate slightly (at zero percent inflation) and take a major stride in making the system less sensitive to inflation, should it return. The tax incentives for debt, while still considerable, would be substantially reduced.

The effective tax rate faced by Japanese investors on domestic corporate investments remains lower than the effective tax rate faced by American investors on U.S. corporate investments. The difference has narrowed, however. At four percent inflation, Fullerton (1987) found that the 1986 tax reform raised the overall U.S. effective tax rate on new corporate investment from 29.4 percent to 41.1 percent. The U.S. tax reform's main accomplishment in this area was evening the treatment of different corporate assets (e.g. plant vs. equipment) by eliminating the investment tax credit on equipment and by adjusting depreciation lifetimes. Tables 5 and 6 indicate that the differences across asset type were not great in Japan even before their reform. What neither country has addressed is the substantial difference between the treatment of owner occupied housing and corporate capital investments.

## 5. Conclusion

The Japanese tax reform proposals are extremely significant. The probable changes in their system are at least as fundamental as those

contained in the U.S. 1986 Tax Reform Act. The taxation of the formerly tax free savings accounts, the introduction of a tax on security capital gains, and the adoption of a VAT will greatly improve the perception of fairness of the system. The VAT is likely to be the tax vehicle that will permit Japan to finance its rapidly growing dependent elderly population. And, a combination of several elements in the reform and the almost complete absence of inflation have caused the effective tax rate on corporate capital income to increase to a point where it is comparable, although still lower, than the corresponding U.S. figures. The reforms of 1987 have already reduced the tax system's bias towards debt and made its effects on investment incentives less dependent on the rate of inflation.

### References

- An Outline of Japanese Taxes (1986) Printing Bureau, Ministry of Finance under authorization of Tax Bureau, Ministry of Finance.
- Fullerton, Don (1987) "The Indexation of Interest, Depreciation, and Capital Gains and Tax Reform in the United States" in Journal of Public Economics, A.B. Atkinson and N.H. Stern (eds.), 32(1):25-51.
- Hasegawa, Keitaro (1988) "Tax Reform from a Global Perspective," in Japan Echo, Tokyo, Japan: Japan Echo Inc., 15(2):46-9.
- Honma, Masaaki, Ihori Toshihiro, Atodi Masumi and Murayama Junki (1984) "Shotokuzei Futan no Gyoshukan Kakusa (Inter-occupational Inequality of Income Tax Burden)," Kikan Gendai Keizai, No. 59, pp.14-25 (in Japanese).
- Ishi, Hiromitsu (1984) Zaisei Kaikaku no Ronri (The Logics of Fiscal Reconstruction), Nihon Keizai Shinbunsha (in Japanese).
- King, Mervyn, (1987) "The Japanese Tax Reform Proposals," mimeo, London School of Economics.
- King, Mervyn and D. Fullerton (1984) The Taxation of Income from Capital. A Comparative Study of the United States, the United Kingdom, Sweden, and West Germany, Chicago: Chicago University Press.
- Nagano, Atushi (1988) "Japan," in World Tax Reform. A Progress Report, Joseph A. Pechman (ed.), Washington D.C.: The Brookings Institution, pp. 155-61.
- Noguchi, Yukio (1988) Tax Reform Debates in Japan, mimeo, Hitotsubashi University, Tokyo Japan.
- Pechman, Joseph A. (1988) "Introduction," in World Tax Reform. A Progress Report, Joseph A. Pechman (ed.), Washington D.C.: The Brookings Institution, pp. 1-14.
- Pechman, Joseph A. and K. Kaizuka (1976) "Taxation," in H. Patrick and H. Rosovsky (eds.), Asia's New Giant, Washington, D.C.: The Brookings Institution.
- Reports by Tax Commission on Tax Overhaul (1988) Hiroshi Watanabe (ed.).
- Shoven, John B. and Toshiaki Tachibanaki (1988) "The Taxation of Income from Capital in Japan," in Government Policy Towards Industry in the United States and Japan, John Shoven (ed.), Cambridge University Press, pp.51-96.