Finnish Corporate Tax Reforms

GOVERNMENT INSTITUTE FOR ECONOMIC RESEARCH

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Foreword

The Government Institute for Economic Research (VATT) wishes to make a contribution with this study to the analysis on the impact of corporate tax reforms as well as to place the reforms in a wider international and theoretical framework. The study is based on the results of a working group chaired by Rolf Myhrman. The working group studied the impacts of corporate tax reforms on Finnish economy. The reforms were also compared with the international trends in corporate taxation. After the liberalisation of capital movements the objective of the corporate tax system cannot be defined only from a national standpoint. A good corporate tax system is harmonious with both- the rest of national taxation and international tax systems.

The book has been written and prepared for publication primarily by Rolf Myhrman, Outi Kröger, Timo Rauhanen and Teuvo Junka from VATT. Seppo Kari from the Ministry of Finance has been responsible for calculations using the King-Fullerton method. Heikki Koskenkylä from the Bank of Finland has influenced the contents of the book in a significant way. The contribution of Maria Rehbinder and Jorma Tuukkanen from the Ministry of Finance is also acknowledged. Marjut Männistö and Sari Virtanen have assisted in the statistical analysis of the study. John Rogers has translated the text into English. On behalf of VATT, I would like to extend by sincere appreciation to all of them for completing this valuable endeavour.

HELSINKI, NOVEMBER 1995

Seppo Leppänen
Director General

CONTENTS

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ABSTRACT: Corporate tax reforms have been designed to adapt the Finnish financial and capital markets to the deregulation of international capital movements. Capital income became widely subject to taxation but at a very low tax rate. The imputation system was adopted in 1990 and the taxation of corporations and shareholders was integrated. The taxes corporations paid on distributed earnings were credited in the taxation of the shareholders. The relief from double taxation of dividends is now granted to the shareholder instead of the corporation. The tax burden of dividend-paying corporations was increased even though the tax rate was lowered to 25 per cent. The neutrality between industrial branches was increased when the possibilities to adjust earnings were almost totally abolished. The dual income tax system was adopted in 1993, and the neutrality of capital income taxation was achieved next year, too. Corporate, dividend and interest income as well as capital gains are taxed at a flat rate of 25 per cent. Now, also equity finance is as favourable as debt financing. The tax reform favours equity compared with retained earnings. The possibilities of the Finnish enterprises to raise risk capital have improved. The Finnish stock market has clearly been divided into two parts much because of the tax reforms. It is favourable for the domestic investors to get their return from dividends while foreign portfolio investors prefer capital gains. Actually, the foreign investors are seeking quick profits, thus exacerbating the stock exchange rate fluctuations. The risks of the small domestic investors are growing at the same time. On the other hand, the low corporate tax rate and the exemption from the withholding tax of dividends from direct investments favour profitable investments in Finland.

KEY WORDS: Corporate taxation, imputation system, tax reforms

Conclusions

The aim of the tax reform carried out in Finland in 1986-1993 was to promote the efficient allocation of capital. This endeavour entailed the broadening of the tax base and cutting of the statutory corporate tax rate. The aim was also to promote neutrality, deviations from which occurred in the tax treatment across various industries and types of investments, financing and investors. After the 1993 capital tax reform, taxation treated the sources of finance for investment - equity, retained earnings and debt - equally in practice. Even though the tax treatment of retained earnings turned out to be slightly more stringent than that of other financial sources of taxation, enterprises can now more easily choose between alternative forms of financing without impediments from taxation.

Finland's tax reforms have deviated from the main stream of the OECD countries. As in the other Nordic countries, the most important elements of taxation in Finland are the differentiation between earned income and capital income as well as the integration of corporate and capital income tax rates.

Taxation of Dividends

In 1990 Finland switched from the dividend deduction system to the imputation system, so that the tax relief shifted from the level of the enterprise to the shareholder. The aim was to eliminate the double taxation of dividends. A further objective was to ensure that dividend income would be taxed at least once. In the previous dividend deduction system, dividends might remain tax exempt in the state taxation at the level of the enterprise and totally out of reach of tax authorities at the level of the shareholder. This occurred if the dividend deduction was one hundred per cent and the dividend recipient was a domestic non-profit institution, a small investor receiving tax exempt dividends because of the capital income deduction, a domestic limited company or a foreign investor. When the dividend deduction was only partial, the dividends of the above-mentioned shareholders were subject only to the tax paid by the company. Other domestic shareholders were in general subject to double taxation. The tax reform was intended to remedy this flaw.

The free mobility of capital over borders was another justification for differentiating the taxation of capital income from the taxation of earned income. Earned income is taxed progressively and capital income according to a proportional tax rate. After the 1993 tax reform different types of capital income became subject to an uniform 25 per cent tax rate. This applied to dividends, capital gains as well as retained earnings. The withholding tax rate on interest income was nevertheless not raised to 25 per cent until 1994. The tax rate on the income of corporations is the same as the tax rate on capital income. The imputation system eliminates the double taxation of distributed earnings from the standpoint of domestic investors.

The imputation system brought about tax neutrality between equity and debt financing. Furthermore, it can be presumed that capital will be more efficiently allocated when dividend distribution provides a signal of the favourable financial position of a company and directs the capital to more profitable investments than before. This is more noteworthy after the liberalisation of capital movements than during the period of regulated capital movements. On the basis of this analysis it can be estimated that the possibilities of companies to conduct business are better than before the tax reform.

Retained Earnings Subject to Double Taxation

At the same time as distributed profits became subject to tax once, retained earnings became subject to double taxation as capital gains became fully liable to tax.

A fundamental attribute of the Finnish tax system entails tax surpluses that can be used to offset the compensatory tax. The tax surpluses consist of taxes paid on retained earnings and the compensatory tax is imposed when the minimum tax based on dividends exceeds the reference tax based on earnings.

The payment of a dividend always determines the minimum tax of a company. If a company nevertheless succeeds in using all of its accrued tax surpluses, the taxes of a company are determined solely on the basis of dividends paid. The tax surpluses can be used only when the company distributes previously retained earnings as dividends. The taxes paid on retained earnings are thus actually akin to a withholding tax on dividends. The connection between the tax surpluses and the compensatory tax works at the firm level as an automatic economic stabiliser. The company can use its tax surpluses accrued in an economic boom during a recession so that the dividend stream can be kept smooth. The previous dividend deduction system with a narrow tax base combined with a high statutory tax rate encouraged companies to carry out their investments during boom years. This easily led to excessive investment and misallocation of resources.

Prior to the tax reforms the main source of finance for investments were retained earnings and debt. Owing to the tax reforms the focal point of financing is shifting to equity finance and the leverage of companies is

declining. This is supported also by the fact that the tax benefit gained from debt-financed investment has been diminished by the lowering of the tax rate.

Gap Between Domestic and Foreign Portfolio Investors Has Widened

The gap in the tax treatment of domestic and foreign investors has widened after the tax reform. In the previous dividend deduction system, a foreign portfolio investor was at a disadvantage vis-à-vis domestic non-profit institutions to the extent of the withholding tax on dividends, but in a clearly better position than private individuals paying tax on dividends. The dividend income taxation of foreign investors is in the new system by far the most stringent, since as a rule they are not able to benefit from imputation credits. This would require that Finland and the country of residency of the foreign investor have a tax treaty including imputation credits, which Finland has signed with only a few countries. On the other hand, a foreign investor does not pay capital gains tax in Finland.

If the lack of neutrality with respect to the tax treatment of dividend income and capital gains of foreign investors continues to prevail, it may distort the functioning of Finnish stock market. According to the study Finland's stock market is marked by two divergent investment strategies. Domestic investors should favour long-term investments in shares, with the main income coming in the form of dividends, while foreign investors seek their returns from capital gains. The thinness of the Finnish stock market also encourages investors to seek quick gains, exacerbating the volatility of share prices. Owing to the swift fluctuation in share prices, domestic investors will be increasingly prone to seek a quick profit from the stock market. This is encouraged by the low capital tax rate as well as inflation, which over the long run raises the capital gains tax appreciably.

Foreign investors' share of the market value of listed companies' stock is estimated at 30 per cent. Foreign investors cannot pull out quickly from the Finnish stock market since this would spur a rapid fall in share prices. Since capital gains are tax exempt, they follow an active buying and selling strategy. Foreign investors might reduce their positions in the Finnish stock market gradually before the next recession. The activities of foreign investors tend to reduce the stability of share prices. At the same time the acquisition of long-term risk financing is impeded.

Integration of Imputation System into International Tax System

The liberalisation of international capital movements had a major impact in the Finnish tax legislation. In order to bolster long-term risk financing, Finland's corporate tax ought to be integrated in with the international tax environment. The imputation system should be augmented by eliminating the double taxation of dividends internationally. In principle, the single taxation of dividends paid abroad can be realised either by adopting the

residence principle in conjunction with the imputation system or the source principle, where exemptions are granted.

According to the residence principle, the capital income of a country's residents obtained from abroad and at home are taxed in the same manner. This occurs when the country of residence allows taxes paid abroad to be credited in its own taxation. Investments are directed where they generate the best return. Thus, investments are allocated efficiently.

The double taxation of national dividends can be completely eliminated in three ways: dividends paid can be completely deducted in the taxation of the company (complete dividend deduction), the corporate tax is credited in full in the taxation of the divident recipient (full imputation credit) or the dividends are completely tax exempt for the dividend recipient.

If the dividend income of domestic and foreign investors is taxed according to the same principles in the source country and the dividends received from abroad are exempt from taxes in the country of residence, then capital import neutrality will prevail and after-tax returns will converge. This situation would be achievable in the framework of a dual income tax system where the flat tax rate on dividend income would be the same as the withholding tax rate on dividends paid abroad. In the residence principle it does not matter whether the domestic investors pay dividend taxes according to a progressive income tax, schedule or a flat tax rate. Tax liability is determined in accordance with the place of domicile of the capital income recipient.

According to the source principle, capital income is always taxed only in the country where the income is generated. Capital income accumulated abroad and taxed there is tax exempt in the country of residence. Capital income of foreign residents earned domestically is taxed in the same manner as that of domestic residents. The after-tax return on investment approaches the same level in different countries. Thus, savings are allocated efficiently.

Direct investments and portfolio investments are taxed according to different principles in different countries. In the European Union the returns on direct investments are not subject to tax at source, but the dividends from portfolio investments are. The former exemplifies the residence principle while the latter follows the source principle. When the capital gains of foreign investments are tax exempt, the same return on investment is taxed in different ways depending upon the investor's stake in the company. In order to get a foreign investor to pay the tax, the source country would have to relay information on the income received by the investors to their country of residence.

In the European Union there has been a long debate about setting a minimum level for the withholding tax on interest income, the alternative to which is the obligation to declare income. It appears unlikely that agreement can be reached on this matter. In a world of free capital movements it is impossible to enforce the declaration of capital gains on shares. The capital gains of foreign investors would not be taxed in the country of residence nor in the source country. In practice it is very difficult to apply only one principle in pure form.

Burden of Corporate Taxation Increased

According to this study, Finnish tax reforms raised the effective taxation of companies despite the considerable decline in the statutory tax rate. The almost complete elimination of the possibilities to adjust earnings offset the benefit gained by lowering the tax rate, and the effective tax rate is approaching the statutory tax rate. The tax burden of companies paying dividends is higher in general than those not paying dividend. In order to safeguard the availability of risk financing, companies must pay dividends. This raises the tax burden of the overall enterprise sector. At the same time the differences in the tax burden between various types of companies have narrowed.

The tax reform prompted a shift in the relative attractiveness of various financing sources in favour of equity finance since the rise in the withholding rate on interest income increased the cost of debt financing while raising the burden of capital gains taxation increased the cost of finance via retained earnings. If shareholders want the same return on their investments as in the previous system, the full tax liability of capital gains must be compensated by higher net dividends.

The possibility of enterprises to declare dividends improved considerably as a consequence of the reform. Now when the same income is distributed to shareholders after corporate taxes, the net dividends of the shareholders rise. The result is ambiguous when the possibilities to pay dividends from untaxed funds in the old system are taking into account. Anyway, the share prices rose steeply in 1993-1994.

In the study it was found that in Finland's former dividend deduction system the overall tax burden on distributed profits was 67-80 per cent for shareholders with a marginal tax rate of 65 per cent. This group did benefit from the shift of the tax regime. The overall tax burden on dividends declared by listed companies in 1993 was 25 per cent. All other groups that were taxed less than once lost their relative advantage. The overall tax burden of dividends distributed only from taxable profits was considerably eased for all recipients regardless of their legal status. When the company paid dividends also from untaxed funds the picture is notably different. The overall tax burden became heavier for all dividend recipients except for natural persons who have not enough deductible interest expenses or whose dividend income exceeded the capital income deduction.

Corporate Tax Reform as a Spur to Growth

In spite of tightening of the corporate taxation we can draw a conclusion that Finland's corporate tax reform has clear economic growth-promoting effects. Prior to the corporate tax reform the tax burden varied considerably by industrial sector, which indicates distortions in the allocation of economic resources. The tax burden of the financial sector was lighter than that of other sectors as its effective tax rate was lower than in other types of businesses throughout the 1980s. The tax burden of capital-intensive industries was

lower than labour-intensive industries. As the possibilities to adjust earnings were almost completely eliminated in the tax reform, the neutrality between different industries increased.

The tax reform has lowered the required return on investments financed via equity and retained earnings in the 1990s. The required return on investments financed via debt has risen to the same level as those financed via equity. The investment-specific tax wedges have significantly narrowed and come closer in magnitude. The relative position of different types of investments - machinery and equipment, buildings and inventories - has not been changed in the tax reform. The required return on machinery and equipment is still the lowest and inventories the highest. Applying the King-Fullerton method in a multi-country context brought the result that a comparatively low tax rate and wide tax base will favour the making of marginal investments in the country in question. The tax reforms would appear in this respect to foster the development of Finland's production structure. Even though the corporate and capital tax reforms are clearly supportive of economic growth, they are not in complete harmony with the rest of the tax system. Inconsistencies occur between national and international taxation and especially between taxation of earned income and capital income.

FINNISH CORPORATE TAX REFORMS

INTRODUCTION

The tax reforms undertaken in the 1980s in the western industrialised countries began in the United States. Martin Feldstein, who played a major role in shaping the tax reforms of the United States, grouped the new areas of emphasis into four closely related phenomena:[1]

1. Behaviour regulating incentives,
2. capital formation,
3. efficient use of resources and
4. opposition to budget deficits.

The tax reforms of the United States in the 1980s concentrated upon promoting saving and investment. The reforms also emphasised the aims to allocate economic resources efficiently so that tax distortions would remain as slight as possible, but so that the revenue requirements of the public sector would be satisfied. The leading western industrial countries applied the principles adopted by the United States in its tax reform.

In the Nordic countries the tax reforms carried out in recent years have followed their own structural line, the most important elements of which are the differentiation between earned income and capital income as well as the integration of corporate and capital tax rates. Prior to the tax reform, a notable feature of the taxation of Nordic limited companies was the high nominal tax rates.[2] Taxable income could indeed be reduced via considerable possibilities to use reserves and accelerated depreciation. The effective tax rate of companies was ordinarily on the level of 15-25 per cent.

Having high nominal tax rates and a narrow tax base could create problems. Enterprises typically had unused potential for adjusting earnings. This together with differences between financial statements and taxation, such as tax allowances and tax deductions, meant that retained earnings were treated more leniently in taxation than distributed profits. The taxation of capital gains was also more lenient than taxation of dividends. The capital needed by companies was accumulated by traditionally profitable companies and the reallocation of risk capital spawned efficiency losses for the overall economy. The broadening of the tax base in line with the tax reform was assessed to alleviate this dilemma.

The old tax system had brought about other types of neutrality problems. The payment of dividends by a limited company could be subject to double taxation in the taxation of the company and its owners. On the other hand, the expenses related to liabilities were deductible. For this reason equity financing was more expensive than debt financing. Finnish companies in particular were often rather indebted.

The Finnish corporate tax reform followed the principles originating in the United States regarding the broadening of the tax base and cutting of tax rates. The reforms also followed the Nordic trends in differentiating between

[1] Feldstein (1993:4323)

[2] The corporate tax rates in 1984 were: Finland 60 %, Sweden 52 %, Norway 51 % and Denmark 40 %.

earned income and capital income in taxation and combining the tax rates for corporations and capital income so that the tax revenues remain unchanged. In Finland one of the main goals was to eliminate the double taxation of dividends and ensure that all dividend income would be taxed at least once. The tax reforms were linked to the process of deregulating the financial markets.

The starting year for the corporate tax reform can be regarded as 1986, when the tax rate for corporations was lowered, the burden of capital gains taxation raised and reserve practices changed. The period of the old tax system came to an end in 1990, when the dividend deduction system was phased out in the taxation of distributed profits. Since the dividend deduction was granted only in state taxation, distributed profits were potentially subject to double taxation. In practice dividends were rarely taxed twice. About 65 per cent[3] of all dividends paid in Finland were tax exempt for the recipient or taxed at a low withholding tax rate.

In the imputation system of 1990-92 dividends received were subject to the income tax rate of the dividend recipient. As a part of this reform the previously tax-exempt dividends received by a domestic limited company from another domestic limited company became taxable. Also the dividends paid to foreign investors previously subject to the withholding tax were included in the tax liability of the dividend-paying enterprise. Thus the tax reform aimed at neutrality also with respect to the dividend income received by various types of shareholders.

In 1993 Finland switched to a dual income tax system where income is divided into capital income and earned income. Furthermore, starting at the same time the income of an unincorporated firm has been taxed as the entrepreneurs' and partners' income, which is divided into earned and capital income on the basis of the net worth of the firm. This is also applied to dividends received from unlisted companies. The reform provided for the uniform and neutral tax treatment of enterprises and capital income. A further aim was to make the tax treatment of alternative sources of financing as equitable as possible. The tax reform was to be implemented so that the tax burden of enterprises would remain at the level prevailing prior to the reform.

In the reform special emphasis was placed on the corporate tax rate and the general simplicity of the tax system. For this reason, a solution was arrived at where almost all reserve provisions used to adjust the taxable income of the enterprises were abolished and the corporate tax rate was lowered to 25 per cent. Corporations were no longer subject to municipal income tax. With the exception of certain transitional provisions, the new system went into effect in 1994, when the withholding tax on interest income rose to 25 per cent, i.e. the same as for other capital income.

[3] Committee Report 1987:39

Low tax rates do not, however, tell us directly whether the burden of capital income taxation and corporate taxation have been eased or whether our taxation is in harmony with international developments.

In the imputation system the dividend policy determines the company's minimum taxes, which are credited fully in the taxation of the dividend recipient. The tax related to dividends is ultimately paid by the company, since the company must itself run a high enough profit to be able to declare a dividend and pay the consequent taxes. The payment of taxes shifts from the shareholder to the company. Since capital gains are taxed in the same way as other capital income, in the situation where the company does not distribute all profits as dividends a problem may arise regarding the double taxation of retained earnings.

The aim of this study is to evaluate whether the tax reforms implemented in Finland have improved the financial position of companies and especially the possibilities for financing investments. The effects of the tax reform are evaluated from the standpoint of the dividend policy of companies and functioning of the stock market.

The outline of the study

Chapter 2 introduces the basic concepts of corporate taxation and international capital income taxation. In chapter 3 the background and motives of the Finnish tax reforms are presented.

In chapter 4 the impact of various income and expense components of the effective tax rate are evaluated using VATT's panel data on large industrial companies. VATT's firm-specific data bank has been used to evaluate the distribution of companies' effective tax rates in the whole enterprise sector. Chapter 5 gives the effects of the corporate tax reforms on the operative possibilities of the company. The calculations are made using the static Firm Microsimulation Model (YRI) and panel data on large industrial firms. In the latter approach it is possible to take into consideration one of the main features of the Finnish imputation system - the interaction between tax surpluses and compensatory taxes. In chapter 6 a comparison between the dividend deduction system (old) and the imputation system (new) is produced from the standpoint of dividend recipients of different legal status.

Chapter 7 evaluates the neutrality of various sources of finance in the old and new system. The functioning of the Finnish stock market is analysed in line with Tobin's q theory. Finally, in chapter 8 we use the King-Fullerton method to investigate the required return on profitable marginal investment before and after the tax reform of 1993. The analysis is widened to include the required return on different types of investments both in a Finnish and in multi-counry context.

2

NATIONAL AND INTERNATIONAL DOUBLE TAXATION

Corporate taxation is rarely of appreciable fiscal importance to the economy. Therefore its necessity is often called into question. The corporate income tax can nevertheless be of use in government stabilisation and structural policy in influencing the level, pattern and timing of investment in the corporate sector. Opinions differ, however, on the desirability and efficiency of this kind of behaviour modification of firms.

Other reasons for taxing companies have been that society is thus compensated for the infrastructure services used by companies. The taxes paid by companies are nevertheless insufficient for this. It has also been thought that the limited personal liability granted by society to shareholders could be compensated via corporate taxation. The pricing of legal liability is perhaps, however, impossible. Companies are not the actual taxpayers since taxation is ultimately aimed at physical persons and their ability to bear the burden of taxation as wage earners, consumers, savers and shareholders.[1]

In addition to taxing the return on investment, the availability of financing and public investment subsidies as well as the level of the public and economic infrastructure affect the establishing of companies. The significance of these factors varies both by region and in line with the different stages of business activities. The company must also take into consideration the short- and medium-term demand prospects for different market areas as well as the price of capital relative to other factors of production. Tax considerations are thus not the only nor even always the most important grounds in the decision making of companies, but they are gaining in significance[2].

2.1 *Different Income Concepts in Corporate Taxation*

Corporate taxation can be studied from the perspective of either the broad concept of income or pure profits. The latter approach is more theoretical, but it can be used to justify the neutrality requirement of corporate taxation.

According to the ***broad concept of income,*** i.e. the Haig-Simons-Schantz[3] conditions, it is of prime importance to ensure that the income formation of the enterprise sector is taxed once and according to the same principles as other income. It is not absolutely necessary to tax a firm's profits at the level of the firm if the integration of the tax system ensures that the profits will be taxed in the owners' taxation. The use of corporate taxation is nevertheless often desired owing to its source tax properties.

The corporate tax as a source tax extends to the capital income of companies with foreign ownership that would otherwise not be subject to

[1] OECD (1991) and EC Commission (1992)

[2] Romppanen - Leppänen (1994)

[3] Haig (1921) and Simons (1938)

taxation. Furthermore, the retained earnings of companies are subject to taxation. In the latter case the personal taxation of shareholders is postponed - and simultaneously eased by the interest benefit - to a time when the retained earnings are cashed in as dividends or capital gains. Since tax has already been paid on retained earnings, it should be credited when the capital income is taxed on the level of the shareholder.

If the firm can be taxed on the basis of so-called ***pure profits***, taxation will not cause distortions in the investment decisions of firms. The firm's pure profit consists of net income in excess of the remuneration of all factors of production, including capital.[4] When defining pure profits, the depreciation on fixed capital is calculated in accordance with true economic depreciation and all financial costs are deducted in full. This kind of tax system is neutral with respect to investment.

There are nevertheless problems in the definition of pure profits since it is difficult to estimate true economic depreciation and the actual costs of financing. A return on equity cannot be deducted in any OECD country. Since the traditional corporate tax is levied also on the return on share capital, equity finance is more expensive than other forms of financing.

Since it has not been possible to implement a neutral corporate tax based on pure profits, the distortions occur in the tax treatment across industrial sectors, the financial structures of firms, company forms, types of investment or the investors themselves. Taxation distorts economic decisions in accordance with economies' degree of openness, size, inflation and risk factors.[5] Despite practical problems the neutrality of corporate taxation and more general capital income taxation is a vital concept of tax policy and a widely accepted goal.

A critique of the broad concept of income, based on the so-called optimal tax theory, that has been put forth in recent times can be evaluated from the perspective of the neutrality goal of corporate taxation.[6] Since capital income is free to move across national borders, its tax elasticity are appreciably different than before and much higher than the tax elasticity of other income. In this type of situation uniform tax treatment leads to very low level of taxes or flight of investment and capital from the country in question. In fact, there should be a return to differentiated tax treatment of different types of income and a forsaking of the uniform tax rates adopted in line with the broad concept of income. Taxation should be focused on relatively immobile factors of production.

The counter-argument presented in support of the broad concept of income is that a source tax type of corporate taxation plays an important role

[4] Pure profits can originate from environmental factors such as natural resources or infrastructure and monopoly factors. A company's know-how, organisation as well as the skills of the management and workers can also help to generate pure profits. In principle it would be a surplus or interest-like income, the taxation of which would rank the value of all factors of production in the same position. This type of taxation would be neutral.

[5] Koskenkylä (1987)

[6] Tanzi (1994)

in safeguarding the tax base of personal income taxation.[7] The corporate tax rate would in addition have to be at approximately the same level as the highest marginal tax rate in personal income taxation. If the corporate tax rate is appreciably lower, income and taxes will be diverted to the enterprise sector that do not belong there. After Finland switched to the dual income tax system in 1993, the pressure has grown to convert the more stringently taxed earned income into the less stringently taxed capital income. The difference is one of the highest in the western industrialised countries.

2.2 *Taxation by Country of Residence and Source*

International corporate taxation should be planned so that saving and investment are allocated efficiently between countries and so that different income within countries could be taxed uniformly.

Capital income can be taxed according to either the residence principle or the source principle or, as is commonly the case, a mixture of the two. The taxation principle affects the real after-tax return on investment as well as the incidence of saving and investment.

Applying a mix of the principles without special arrangements leads to the international double taxation of capital income. International tax harmonisation and co-ordination is largely a question of by which principle should the taxation of different countries be standardised.

Residence Principle

According to the residence principle, tax liability should be determined in accordance with the place of domicile of the capital income recipient. As a consequence, the capital income of the residents of the same country - of both natural and legal persons - earned abroad and at home are taxed uniformly.

If all countries applied the residence principle, the residents of no country could avoid taxation in their home country and gain a comparative advantage by investing abroad. Investments will be aimed where they generate the best return. Market pressures will force the required pre-tax return on domestic investments to the same level as in the rest of the world, i.e. pre-tax returns will converge. The required return on marginal investment will be the equilibrium interest rate of the international capital markets, but the after-tax yields can vary across countries.

If the residence principle is realised globally, the international allocation of capital would be efficient only if all countries adhered to the strict conditions determining the tax base for capital income. According to these

[7] Gordon - MacKie-Mason (1994)

so-called Haig-Simons-Schantz conditions, distortions such as accelerated depreciation, tax-exempt capital income and other deviations from "correct accounting" would not be allowed. According to Hans-Werner Sinn[8], harmonisation of international income taxation should start with standardisation of the tax base. In particular, depreciation should be determined on the basis of true economic wear and tear. Only after this should tax rates be harmonised, if this is necessary.

Different tax rates for capital income would indeed affect saving, since the net after-tax returns of different countries' residents would vary. This would spur differences across countries with respect to consumption and saving. Saving would be an object of taxation and capital taxation would affect the global distribution and level of saving.

Source Principle

The source principle refers to the case where capital income is taxed only in the country where the income is generated. All capital income accumulated and taxed abroad is tax-exempt in the country of residence. Foreigners are taxed like domestic residents on capital income earned domestically. Domestic investments now have to generate an after-tax return corresponding to the net-of-tax interest rate prevailing on global markets. The after-tax return on investment will converge. A better return will be required on investments in countries with high taxation than in those with low taxation. Thus the global distribution of investment will be distorted. When the source tax is applied, the returns on investments at home will be taxed while capital taxation will not influence the global distribution of saving. Under these conditions, there will be no differences in saving and consumption across countries.[9]

The welfare effects of the source and residence principles can be appraised by comparing the relative significance of the distortions in consumption and production.[10] The welfare effects are determined by 1) substitution effects between current and future consumption and 2) the substitutability of domestic and foreign investment.

It is generally assumed that the substitutability of current and future consumption is low and the substitutability of international investments high. An alternative to current consumption is future consumption, i.e. current saving. If the taxation of saving is not likely to lead to increased consumption, taxation does not distort economic decision making. If this is true, it is better to tax saving than investment in order to accumulate a certain amount of tax revenues. The unfavourable welfare effects of taxation are then smaller. The residence principle would thus lead to smaller welfare losses than the source principle.

[8] Sinn (1990c)

[9] Sinn (1990c)

[10] Giovannini (1989)

The above-mentioned conclusion is based on the presumption that the demand for investment is sensitive to the cost of capital, one element of which is taxation. On the other hand, the elasticity of saving with respect to after-tax returns would be small. Recent studies have nevertheless arrived at contrary results. A study using Nordic data for 1965-90 found that corporate taxation does not have a significant impact on the level or the timing of long-term industrial investment.[11] An increasingly common perception about savings is nevertheless that, in a world of free capital mobility, the investments in debt instruments are sensitive to changes in taxation. The shift of capital to Luxembourg after the adoption of the source tax on German deposits is a good example of this.

There are other problems with applying the residence principle. The administration of the system is complicated, since bank secrecy and the lack of declaration obligations prevents in many cases the monitoring of foreign income. In practice the source principle is applied in tandem with the residence principle.[12] Furthermore, in the case of the residence principle it is possible to defer the payment of future taxes on international capital income by postponing the repatriation of profits. The realisation of taxation in line with the broad concept of income closely related to the residence principle, i.e. the Haig-Simons-Schantz conditions including in particular giving up the use of accelerated depreciation, has proven to be an unrealistic goal in practice.

Hans-Werner Sinn[13] has criticised the source principle together with true economic depreciation practice favoured by the European Commission. This kind of combination maximises the disturbances spawned by differences in tax rates. The tax rates on capital income vary greatly within the European Union. A system of accounting according to the true economic depreciation would indeed fit well with the residence principle, but in the context of the source principle immediate write-offs should be applied. It would therefore appear that since many countries apply the residence and source principles simultaneously, there would be leeway for accelerated depreciation even from a theoretical perspective.

2.3 *Neutrality of International Capital Movements*

In international practice the source country is generally regarded as having the right to tax income generated within its jurisdiction. Thus the country of residence can alleviate the double taxation of income received from abroad by using tax credit, exemption or deduction schemes. The OECD has made

[11] Dufwenberg - Koskenkylä - Södersten (1994)

[12] Vapaavuori (1991)

[13] Sinn (1990c)

so-called model convention that Finland has followed to a large extent in its own tax agreements.

Under the *credit method* the country of residence taxes the income received from abroad at the same tax rate as domestic income and credits taxes paid abroad against domestic taxes. The upper limit of the tax credit is the amount that the country of residence would alone have taxed. This constitutes a limited or normal tax credit. If the tax rate of the source country is higher than that of the country of residence, the final tax rate is the tax rate of the source country. In this case the country of residence does not credit the taxes paid in the source country in full. The tax credit method almost always entails a possibility to defer taxes: the capital income from abroad is not taxed until the income is repatriated.

In the *deduction method* taxes paid abroad are deducted from taxable income in the home country. The foreign tax liabilities are treated in the same way as expenses incurred in earning income. They are deducted from the total taxable income in the country of residence and the tax is determined by this residual income. In this system double taxation continues to prevail to a certain extent internationally, thereby discriminating against investment made abroad.[14] Therefore the deduction method is not recommended to be used as a common method: it will not be analysed further in this study.

The *exemption method* refers to the case where only the source country taxes the income earned abroad.

The application of the credit or exemption method depends upon whether the aim is capital export neutrality or capital import neutrality.

Capital export neutrality (CEN) prevails when the tax system does not put investments at home in a better position than those directed abroad. Investors face the same effective tax rate on capital income, regardless of whether they invest at home or abroad. If all states follow the residence principle and full credit method, global capital export neutrality is achieved, so that taxation does not affect whether investments are directed to the home country or abroad. Investment is thus allocated efficiently globally; taxation nevertheless distorts the relation between saving and consumption in countries.

Capital import neutrality (CIN) prevails when domestic and foreign investors obtain the same after-tax return on capital in any country concerned. If all countries follow the source principle and give complete tax exemptions to foreign capital income, capital import neutrality is achieved. The mobility of capital guarantees the efficient allocation of global saving. Since the tax rates of the source countries nevertheless vary, the required yields on investment are distorted across different countries.

If effective marginal tax rates on capital income were identical world-wide, the neutrality of capital exports and imports would be achieved simultaneously. It is unrealistic, however, to expect such far-reaching international tax

[14] Vapaavuori (1991)

harmonisation in the near future. Policy makers must indeed place ahead one or the other form of neutrality.

Capital export neutrality (CEN) is associated with the residence principle and the tax credit method. In the research tradition CEN is regarded as a more desirable economic state than CIN in accordance with the exemption method and source principle.

CEN leads to efficiency in investment and inefficiency in saving while CIN has precisely the opposite effect. If the tax elasticity of saving is small and the tax elasticity of investment high, it would be more appropriate from the standpoint of welfare effects to strive toward CEN and tax saving instead of investment. In this manner taxation would produce fewer drawbacks for economic decisions. But if the opposite view is closer to the truth, CIN would be a more desirable alternative, i.e. it would be better to tax investment than saving.

It is natural that after the liberalisation of capital movements the source principle and exemption method have gained in significance. Investors actively seek the highest returns and this easily leads to tax competition, thereby eroding the base for taxation of corporate and capital income.

2.4 *Harmonisation of National and International Dividend Tax Systems*

The relief from the double taxation of dividends or its complete elimination can be realised at either the level of the dividend recipient or dividend-paying company. The tax relief can be realised either via the imputation system or the dividend deduction system. The aim is to get away from the classic system, where relief from double taxation is not granted or it is very modest.

The *imputation system* of corporate taxation refers to a system where there is a direct connection between the corporate tax actually paid (distributed profits) and the tax relief (credit) realised in the shareholders' personal income taxation. The tax relief can be implemented so that the corporate tax levied on distributed profits is either completely or partially deducted as a withholding item in the final tax due from the dividend recipient. The taxable income of the dividend recipient is regarded as the sum of this tax credit and the (cash) dividend. A full tax credit would eliminate the double taxation of dividends and safeguard that they will be taxed at least once.

If there is no clear connection between the company and the tax credit received by the shareholder, this is referred to as relief received by the shareholder. Partial dividend tax relief can entail, for example, some sort of capital income deduction. Complete relief turns the system into a *tax-exempt dividend system*. Tax relief can be granted to the shareholder at the same time as the dividend deduction system is used at the level of the firm. This type of taxation prevailed in Finland before 1990 when the switch was made to the imputation system.

The *dividend deduction system* refers to the narrowing of the tax base of a company paying a dividend so that the dividends distributed on equity can be either fully or partially deducted in the taxation of the company. The former method eliminates the double taxation of dividends completely.

Is the tax levied on dividends in the imputation system the tax of the company or the shareholder? The taxes paid by the company in the imputation system are regarded as being for the benefit of the shareholder either partially or completely. Since a company must show earnings at least as large as its distributed profit and the related tax levied on it, the tax associated with the dividend is always paid by the company. Thus the dividend tax is considered to be one of the taxes belonging to the dividend-paying company.

The dividend recipient is in turn taxed on the sum of the corporate tax credit (imputation credit) and net dividends. Thus the tax credit is deducted from the taxes as in the case of a withholding tax. When the dividend recipient is taxed at the same tax rate as the company paying a dividend, the company pays the related tax on behalf of the shareholder in full. From the standpoint of the dividend-paying company the legal status of the dividend recipient is irrelevant (private individual, limited company, foundation etc.). The company has to pay the tax in any case on both the distributed and undistributed earnings. In addition the company bears the primary responsibility for the dividend tax.[15]

There is disagreement about how the relief or elimination of the double taxation of dividends should be realised. It seems that regardless of whether the imputation or dividend deduction system is chosen, on the national level the two schemes end up having similar properties. This is supported by the fact that in a closed economy saving and investment are balanced. In this case taxation is aimed at both saving and investment regardless of whether a company or a household is taxed. In an open economy from the standpoint of free mobility of international capital, it is nevertheless of significance how the taxation of dividends is arranged.

The double taxation of national dividends can be completely eliminated in three ways: dividends paid can be completely deducted in the taxation of the company (full dividend deduction), the corporate tax is credited in full in the taxation of the dividend recipient (full imputation credit) or the dividends are completely tax exempt for the dividend recipient (table 2.2). The latter alternative was exemplified by the corporate tax reform proposal recently withdrawn in Sweden.

The single taxation of dividends paid abroad can be realised by applying either 1) the residence principle and the credit method as well as the consequent capital export neutrality and efficient allocation of investment or 2) source principle and the exemption method as well as the consequent capital import neutrality and efficient allocation of saving.

[15] In Finland the dividend recipient is liable for the tax only in the case when there is reason to suspect that the company has not paid its taxes. The law on the imputation system stipulates that a company must pay income tax on at least a third of the amount of dividends distributed during the tax year.

	Source country		Residence country	
	Dividend-paying company	Dividend recipient	Method of tax relief	Neutrality of capital
Complete dividend eduction system	no tax	tax	credit exemption	export neutrality import neutrality
Full imputation crediting of corporate tax system	tax	no tax / tax	credit exemption	export neutrality import neutrality
Tax-exempt dividend system	tax	no tax	exemption	import neutrality

Table 2.2. Elimination of Double Taxation of Dividends.

In the complete dividend deduction system, capital export neutrality prevails if the source country taxes dividend recipients and all countries of residence grant a complete credit with respect to the source tax. Thus the required yields on investment converge and in accordance with the residence principle the residents of a country receive the same return on investments made at home and abroad. In general domestic investors pay dividend taxes according to a progressive income tax schedule and foreign investors according to the flat withholding tax rate. If the tax rate of the source country is higher, the maximum credit is the tax paid in the country of residence. The neutrality condition does not hold in this case. This principle does not disturb the capital export neutrality.

If the dividend income of domestic and foreign investors is taxed according to the same principles in the source country and the dividends received from abroad are exempt from taxes in the country of residence, then capital import neutrality will prevail and after-tax returns will converge. This situation would be achievable only in the framework of a dual income tax system where the flat tax on dividend income would be the same as the withholding tax rate. In practice the dividend deduction system can thus in principle lead to either capital export neutrality or import neutrality depending on the tax system and whether the countries of residence apply the credit or exemption methods on dividend income earned abroad.

The full imputation credit of corporate tax also has links with the residence and source principle. Capital export neutrality is realised when the imputation tax credit is granted in all source countries also to foreign investors, who are taxed in their country of residence. The traditional tax system based on broad income with its withholding taxes works well as a basis for this principle.

Capital import neutrality prevails when the dividend income of foreign investors is not taxed in their country of residence and the source country taxes them in the same way as domestic residents. Capital import neutrality

would be realised in a dual tax system where capital income is taxed at a flat rate.

If in a dual income tax system the tax rate on capital income is the same as the corporate tax rate, this situation approaches a tax-exempt dividend system where dividends are paid at the level of the firm. Capital import neutrality prevails only if the dividend income that is tax exempt in the source country were tax exempt also in all countries of residence. The capital export neutrality associated with the residence principle cannot be realised in this system because the taxation of dividends is not integrated. In this case the taxes of the dividend recipient cannot be credited in the country of residence. In this system the situation of the source country also weakens since foreign investors are subject to the same tax treatment as domestic investors. A "weapon" like a imputation credit necessary in the tax agreement negotiations is not available in this case.

Even though the single taxation principle deeply imbedded in the imputation system is well justified on the national level, it may have drawbacks for international capital movements. The tax burden on dividends received both from abroad and those paid abroad has generally been eased in tax agreements: the dividends paid to the direct investments of Finnish companies[16] from the countries with tax agreements are tax exempt in Finland. Furthermore, the withholding tax paid on dividends in the neighbouring country is taken into account when calculating possible compensatory taxes.

The dividends paid on direct investments in a particular country are subject to at least double taxation owing to the compensatory tax. This kind of a system does not favour a system where the foreign subsidiaries of a multinational group are in the ownership of a company located in Finland. Since the beginning of 1995 the compensatory tax was eliminated in situations where the dividend on direct investment[17] received from abroad by a Finnish company is redistributed to foreign shareholders of the company. The reforms benefit, for example, the transit companies that intermediate profits from Russia's expanding markets to other countries.

The tax systems of the OECD countries with respect to direct investment are based on the source principle and exemption procedures. This favours capital import neutrality and efficient allocation of saving, which is in harmony with the tax elasticity prevailing in a world of free capital mobility. The residence principle would be a more desirable alternative from the standpoint of financing investment and preserving the tax base, and it is generally applied in the taxation of portfolio investment. The ease of concealing income, however, constitutes a problem. In order to dampen the tax competition associated with the source principle, countries should not be able to decide alone about their tax rates nor their tax base regulations.

[16] The requirement is at least a 10 per cent voting stake in the dividend-paying company.

[17] The limit for direct investment is 25 per cent of the equity of the dividend-paying company.

Moderate tax competition nevertheless has its good side: it harmonises the taxation between different countries. Harmonisation of taxation can be promoted also actively by agreeing upon tax rates or tax systems internationally.

3

BACKGROUND AND AIMS OF TAX REFORMS

After the first oil crisis a change occurred in the way of thinking in economic theory in the United States. In this connection the view of general tax policy was revised. Practically all western countries have implemented tax reforms following the example of the United States.

The current Finnish corporate income tax system is also marked by broad tax base and low tax rate. The general line of the Nordic countries' tax reforms nevertheless diverged from the mainstream. This is reflected in Finland by the imputation system and especially the dual income tax system with differentiated taxation of capital income and earned income. The former system was introduced in 1990 and the latter in 1993.

3.1 Corporate Taxation in OECD Countries and Finland

In almost all OECD countries corporate taxation has been marked by reforms whereby corporate tax rates have fallen substantially since the mid-1980s (figure 3.1). Exceptions include Turkey, Japan and Italy. Finland's 25 per cent corporate tax rate was the lowest of the OECD countries in 1995.

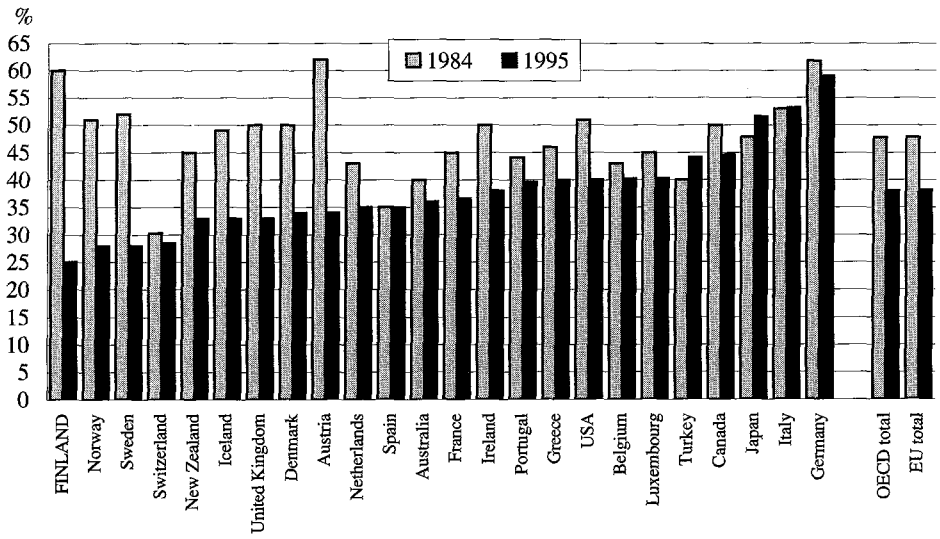

Figure 3.1 Tax Rates on Corporate Retained Earnings in OECD Countries in 1984 and 1995 (Source: KPMG Wideri).

However, the statutory tax rate does not tell much about how the tax burden - the effective tax rate - actually varies in the enterprise sector since the broadness of the tax base (taxable income) differs greatly by country. In general, high statutory tax rates have been associated with a narrow tax base.

The tax base is typically deemed to include the income received by a firm from all sources. On the other hand, all costs associated with generating taxable income and maintaining the property of the firm are deductible. The tax base can be further narrowed, for example, by allowing for tax-exempt income, reserves to adjust earnings, accelerated depreciation and various kinds of tax relief for taxable income. Differences occur in the tax base in different countries also with respect to tax treatment of dividends. When relieving the double taxation of dividends in the dividend deduction system, the tax base of the company distributing a dividend narrows; no corresponding narrowing occurs in the imputation system. The treatment of losses also varies by country. Losses can generally be deducted from the tax base either in future or past years via carry forward/back methods.

Owing to the narrowness of the tax base the taxes paid by enterprises are often of minor fiscal significance to the economy nor do high nominal tax rates necessarily generate high tax revenue. For example, in Germany where the total corporate tax rate was the highest in the OECD in 1995, corporate taxes represented only 1.1 per cent of gross domestic product (figure 3.2). The income taxes levied on Finnish enterprises as a percentage of GDP were the sixth lowest of the OECD countries in 1994.

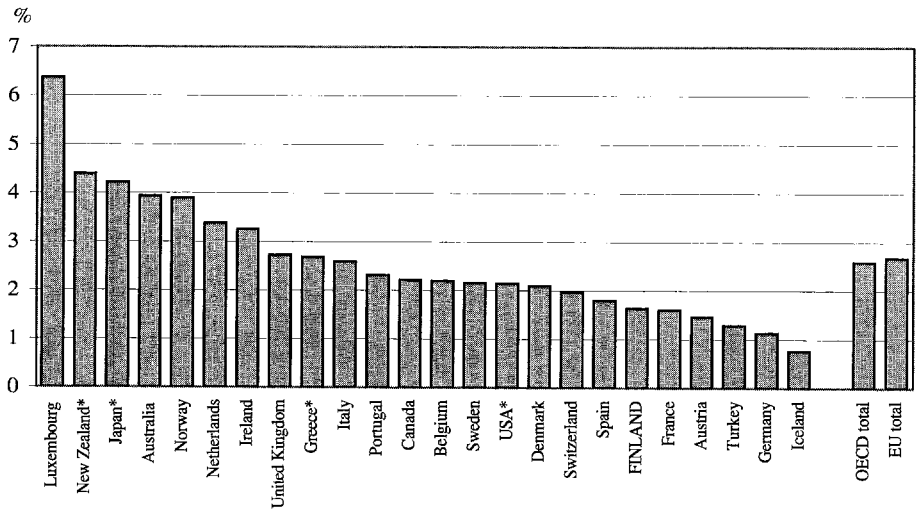

Figure 3.2 *Corporate income taxes in the OECD and EU countries as a percentage of GDP in 1994, preliminary figures (Source: OECD, 1995), * = in 1993.*

The revenue of Finland's corporate tax in the years 1980-93 are presented in figure 3.3. Total business enterprises comprise the income and possible wealth taxes of corporations (limited companies and co-operatives), partnerships and self-employed persons. The taxes of enterprises other than corporations include to some extent taxes paid on non-business-related activities.

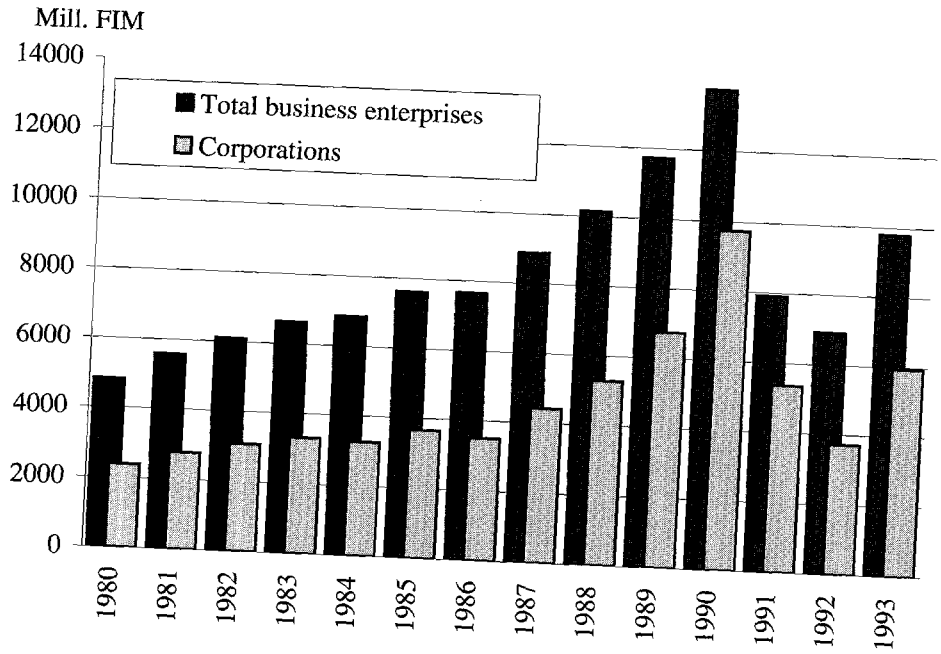

Figure 3.3 *Taxes of Total Business Enterprises and Corporations in Finland in 1980-1993 (Source: National Board of Taxes).*[1]

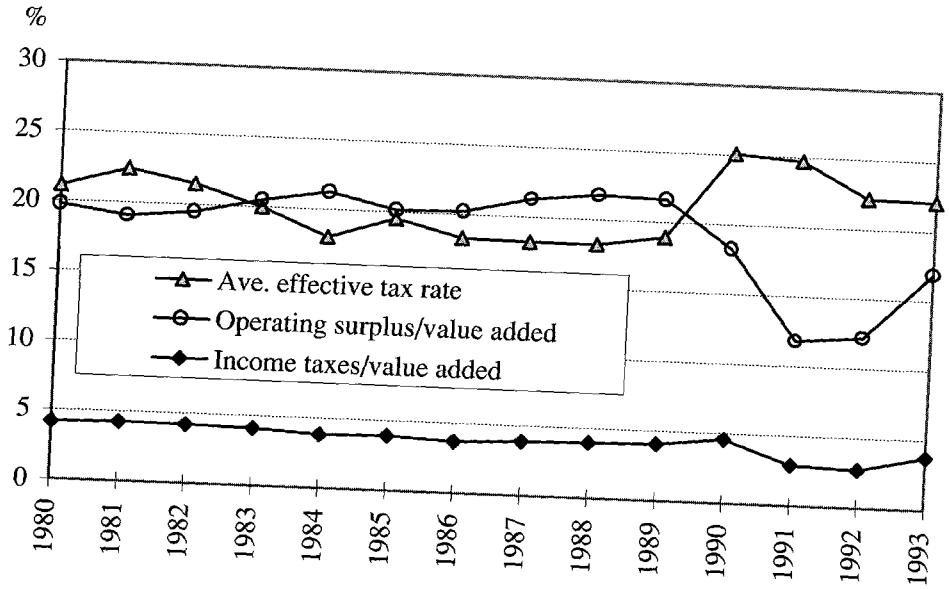

Figure 3.4 *Operating Surplus and Taxes of Business Enterprises Relative to Value Added and Average Effective Tax Rate in Finland in 1980-1993 (Sources: Statistics Finland and National Board of Taxes).*

[1] The imputation credit related to dividends received has been deducted from taxes in 1991-1993. In 1990 the imputation credit received by enterprises totalled about FIM 200 million, in 1991 about FIM 3 billion, in 1992 about FIM 2.5 billion and in 1993 about FIM 700 million.

In figure 3.4 the operating surplus and income taxes of business enterprises are depicted as a percentage of value added. In the same figure the average effective tax rate on business enterprises is calculated as income taxes as a percentage of the operating surplus[2].

Except for the recession year of 1986 taxes levied on companies grew until 1990, when the taxes of corporations rose an exceptional 44 per cent and taxes of overall business enterprises climbed 17 per cent over the previous year. The nominal amount of business enterprises' tax revenues declined during the severe economic recession of 1991-92 by over 40 per cent from the 1990 level. In 1993 the taxes of business enterprises rose substantially.

The ratio of enterprises' taxes to value added reflects the large changes in the tax revenues of 1990-1993. In 1990 taxes as a percentage of value added grew appreciably, hitting lows in 1991-1992 and returning to the long-term level in 1993. The operating surplus relative to value added fell sharply already in 1990 and continued to plunge in 1991, but started to rise already in 1992. The relationship between companies' taxes and operating surplus is depicted by the average effective tax rate. Its trend was almost a mirror image of the relative changes of the operating surplus until the crash in the economy in 1991. In 1993 there occurred a clear change: the portion of taxes remained stable compared to 1992 in spite of higher earnings in 1993.

3.2 *Imputation System*

Finland had applied a dividend deduction system until 1990, when the imputation system was adopted [3]. In the old system a company did not pay state tax on dividends distributed on new share capital and dividends paid on old share capital were only partially subject to tax.

Since at the same time distributed profits were tax exempt for companies or lightly taxed, all dividend recipients did not pay tax. In the old system a limited company avoided tax [4] completely if it did not distribute the dividends to private individuals. The taxation of private individuals was eased to the extent that dividend income could be included in the capital income deduction. The taxation was less than complete if the dividend recipient was a tax-exempt non-profit institution. The dividends paid to foreign owners

[2] Value added (value added of entrepreneurial activities minus imputed bank service charges minus agriculture, forestry and fishing and ownership of dwellings) = wages + employers' social security contributions + depreciation + other indirect taxes - subsidies + operating surpluses.

[3] According to permanent Finnish tax rules the dividend deduction was 40 per cent, which was temporarily changed to 60 per cent. According to other regulations dividends distributed on new share capital were 100 per cent tax deductible. Before calculating the dividend deduction the tax exempt domestic dividends and group contributions were subtracted from distributed dividends.

[4] The dividends received by one domestic limited company from other domestic limited company were tax exempt to prevent so-called chain taxation.

were lightly taxed in accordance with tax agreements or completely tax exempt. In practice dividends were rarely taxed twice. In fact about 65 per cent [5] of all dividends in Finland were tax exempt or subject to a low withholding tax. Since of the shareholders only the natural persons were subject to double taxation, the old system had led to the institutionalisation of share ownership; companies owned increasing stakes in each other and private individuals were crowded out of the stock market.

In addition to Finland, also in Denmark, France, the United Kingdom and Canada the large shares of tax-exempt shareholders and dividend income paid especially abroad were more important motives for adopting the imputation system and ensuring the single taxation of dividends[6].

As the possibilities for income adjustment and tax exempt income have for the most part been eliminated, the taxable income corresponds to the true earnings of enterprises. Retained earnings are taxed at the same tax rate as distributed profits, in contrast with the dividend deduction system, where distributed profits were subject to lower tax owing to the dividend deduction. In the new imputation system the taxation of enterprises continued to be based on taxable income. If a company nevertheless distributes a gross dividend exceeding its profits, it has to pay tax based on the distributed dividend. A comparison tax is calculated for the company on the basis of its taxable income, against which is compared the minimum tax based on the distributed dividends. If the comparison tax is less than the minimum tax, the company is obliged to pay a compensatory tax. The compensatory tax can be offset with tax surpluses, which accrue from the taxes paid on prior retained earnings. The tax surpluses can be accumulated from the previous ten-year period. The corporate taxes of the imputation system are determined according to the following equations:

(3.1) *Taxes = Statutory tax rate * Actual earnings + Compensatory tax - Tax surpluses*

(3.2) *Compensatory tax = Statutory tax rate * (Gross dividends - Actual earnings)*

The compensatory tax is assessed only when the profits in distributed exceed earnings, i.e. gross dividends exceed actual earnings.

(3.3) $$\textit{Tax surpluses} = \sum_{t=-10}^{-1} \textit{(Statutory tax rate * Retained earnings)}$$

The tax surpluses are taken into account only in cases where the compensatory tax would be assessed.

[5] Committee Report 1987:39

[6] Committee Report 1987:39

The compensatory tax and the tax surplus can be regarded as being of significance from the standpoint of counter-cyclical policy. During boom years there is no reason for the company to worry about paying taxes by showing earnings higher than gross dividends, since the tax surpluses accrued from taxes paid on retained earnings can be used when determining taxes paid on distributed profits in later years. The interest loss owing to the time difference nevertheless reduces the value of the tax surpluses somewhat. During a recession the actual earnings are often lower than the desired gross dividend, and the company can use the tax surpluses to avoid the compensatory tax. The tax surpluses act as automatic cyclical stabilisers. On the other hand, the extensive possibilities for earnings adjustment associated with the former dividend deduction system strengthened the cyclical fluctuations by lowering the taxes paid by companies in boom years. In contrast, in recession years for example, the reserves used for adjusting earnings were released and companies showed more taxable income than true earnings.

3.3 *Reform of Capital Income and Corporate Taxation*

Another major corporate tax reform was launched in 1993 in connection with the tax reform of capital income. Both reforms are currently still in effect with virtually no changes. Following the Nordic example Finland implemented an income tax system where the flat tax rates for capital income and the central government's corporate taxation (both tax rates 25 per cent) was differentiated from the progressive taxation of earned income. In this connection the corporate taxation of municipalities was discontinued but earned income was still subject to municipal and related taxes. In contrast with other Nordic countries Finland did not ease its income tax schedule so that the marginal tax rates remained unchanged [7].

The prime elements of the corporate tax reform were the cutting of the corporate tax rate and the broadening of the tax base. The imputation system remained intact with certain small modifications. The taxation of partnerships, in contrast, changed. The so-called halving method used in general partnerships and limited partnerships was discontinued. According to this method the company was liable for half of the taxable income of the company. The other half of the tax liability was divided among the partners. After the reform the entire income of the partnerships was divided among the partners for income tax purposes.

A partner's income from a partnership, income of self-employed persons, agricultural income and other dividends than those distributed by listed

[7] Ministry of Finance 1992:23

companies (with imputation credit) are divided into capital income and earned income. Capital income is regarded as that part of the firm's income that corresponds to a 15 per cent return on the net worth of the company, with the remainder being earned income.

The most important measure taken to broaden the tax base of corporate taxation was the discontinuation of inventory and operating reserves. The possibility to make operating reserves has nevertheless still been retained for self-employed persons and partnerships.

The tax base was broadened so that the capital gains from fixed assets such as real estate and securities became taxable regardless of the length of ownership. Furthermore the replacement reserve was reduced and the maximum depreciation on acquisition costs of buildings was lowered. The deduction of entertainment expenses were limited from the previous practices.

After the tax reforms, taxable income will be calculated more in line with the principles of accounting-based income than previously. Inventories will be valued in accordance with the lower of cost or market value principle. The standardised credit loss reserve was discontinued and the deduction of the losses on sales receivables occurs according to the same principles as in accounting.

The main elements of the 1993 corporate tax reforms were as follows:

- the possibility to undervalue securities belonging to trading assets was eliminated,
- the possibility to undervalue other inventories was eliminated.
- the use of operating reserves was discontinued except in the case of private enterprises and partnerships
- the maximum depreciation on retail buildings, warehouses, plants and workshops etc. was lowered from 10 and 9 per cent to 7 per cent,
- the maximum depreciation on residential housing and office buildings etc. was lowered from 5 to 4 per cent,
- the deductibility of entertainment expenses was lowered to 50 per cent of their total sum,
- the partial tax exemption on the sales of real estate and shares belonging to fixed assets was eliminated,
- the corporate tax rate was lowered to 25 per cent,
- the FIM 100,000 tax rate relief band was eliminated,
- the standardised credit loss reserve was eliminated and replaced by write-offs in line with the actual value of receivables,
- the guarantee reserve was replaced by guarantee-specific deduction rights
- the possibilities to establish replacement reserves were diminished.

However, already in May 1993 legislation was passed providing for a temporary hike in the depreciation allowances of productive investment. The

law gave the possibility to take a maximum of 14 per cent annual depreciation of the declining balance in 1993 and 1994 instead of 7 per cent on the acquisition costs of a plant or workshop taken into use in 1993 or 1994. The maximum depreciation on new machines and equipment was correspondingly 30 per cent instead of 60 per cent. The law was intended to bring about productive investments swiftly at the right time from a counter-cyclical policy standpoint.

The 1993 capital and corporate tax reforms were justified primarily as making taxation of capital income and corporations more uniform and neutral [8]. This goal had not been achieved by the comprehensive tax reform of 1989-91. It was regarded as important to improve the horizontal tax neutrality between various forms of capital income.

Second, the international competitiveness of the tax system became one of the fundamental objectives of the reform. The deregulation of the financial markets spurred pressure to lower the tax rates on capital income.

Third, the reforms were intended to improve the position of risk capital as opposed to debt financing in the financial structure of companies. The improvement of the competitiveness of dividend income compared to interest income means reducing the tax advantages of debt financing. The low tax rate on the retained earnings of limited companies also improves the possibilities to use this source of financing.

Fourth, the adoption of a uniform tax rate was intended to prevent or minimise the possibility of tax arbitrage [9].

Since the dividend deductions of the 1989 tax system have been discontinued and the possibilities for adjusting earnings and receiving tax exempt income have been phased out almost completely, the taxable income of corporations will converge toward true earnings and the statutory tax rate will approach the effective tax rate. In the new system the elimination of possibilities to adjust earnings was compensated by the lower tax rate.

Table (3.1) provides an example of the 1993 corporate tax reform by illustrating the impact of eliminating earnings adjustment possibilities on unrestricted shareholders' equity and the formation of internal financing. The basis for comparison is the 1989 tax system. The example does not include dividend distribution. The effective tax rate is fixed at 25 per cent.

Even though in the old system (1989) and the new system (1993) the effective tax burden on the company remains unchanged, the systems differ with respect to accumulation of retained earnings. In the old system a high statutory tax rate in combination with possibilities to adjust earnings affected a company's unrestricted shareholders' equity only to the extent that they reduced the company's taxes. This increased the possibilities to pay dividends and invest. Furthermore, the use of reserves and depreciation

[8] Ministry of Finance 1991:28

[9] For purely tax reasons the financial investments financed via debt are more worthwhile in a situation where capital income is tax exempt or lightly taxed and where interest expenditures are tax deductible. This phenomenon is called tax arbitrage.

	High tax rate with earnings adjustment possibilities		Low tax rate without earnings adjustment possibilities
Actual earnings	100		100
- Earnings adjustment	50		-
= Taxable income	50		100
- Tax (50%)	25	(25%)	25
After-tax income	25		75
Increase in unrestricted shareholders' equity (=after-tax income)	25		75
Internal financing (earnings adjustments + after-tax income)	75		75

Table 3.1 *Impact of Tax Rate and Earnings Adjustment Possibilities on Unrestricted Shareholders' Equity and Internal Financing.*

increased the companies' internal financing, i.e. the funds available for investment and repayment of debt.

Changes in the system did not have an impact on companies' internal financing since the amount of internal financing augmented by use of reserves and depreciation in the old system corresponded to the internal financing in the new system boosted by the lower tax rate. This conclusion holds in cases where a company's effective tax rate in the old system corresponds to the new statutory 25 per cent tax rate. All in all the new system made the increasing of unrestricted shareholders' equity more transparent than in the old system.

The critics of the dual income tax system have seen at least two kinds of problems with the reforms. First, the vertical fairness of the overall tax system suffers when the burden of capital income taxation is lighter than that of earned income. This leads to pressures to transform earned income into capital income, thereby eroding the revenue from income taxes and social security contributions, as well as expansion of the so-called grey economy. These kinds of features prevailed already in Finland's old tax system in the form of tax exemptions for capital gains and interest income. In the new system the transformation of income has nevertheless been eased since the owners can decide themselves whether they take income regularly as earned income or dividends.

Second, the tax system is vulnerable to cyclical fluctuations in the economy and sensitive to growing inflation. The tax treatment of capital gains in particular tightens automatically in an economic boom when the rate of inflation has a tendency to accelerate. The low corporate and capital income tax rates were justified as compensating for the fact that full nominal value of capital gains became taxable and the possibilities of companies to use reserves were eliminated in practice.

3.4 *Impact of Eliminating Possibilities to Adjust Earnings*

Besides the shift to the imputation system, the most important changes in the corporate tax reform were the elimination of possibilities to adjust earnings and the lowering of the statutory tax rate. This section takes a look at the connection between adjustment of earnings and the tax rate.

In the old dividend deduction system, the income subject to taxation was obtained by subtracting tax exempt income, appropriations from reserves and tax deductions from the actual earnings of the company. Furthermore, in state taxation it was possible to make a dividend distribution deduction, which was 60 per cent or in the case of new share issues 100 per cent of the distributed dividends (exc. tax exempt dividend income and group contributions). A company could also be subject to municipal presumptive income taxation. The taxable income of the company was determined in accordance with its dividend policy and the need to accumulate unrestricted shareholders' equity. The company had leeway in this respect depending upon its possibilities to adjust earnings.

Corporate taxes were determined in the dividend deduction system in accordance with the following equation:

(3.4) *Statutory tax rate * (Actual earnings - Tax exempt income - Dividend deduction - Change in reserves - Excess depreciation) + Presumptive municipal tax = Effective tax rate * Actual earnings*

From the above equation it should be noticed that the greater the possibilities to adjust earnings, the wider the gap between actual earnings and taxable income. Thus the statutory tax rate is clearly higher than the effective tax rate and measures poorly the true tax rate and the tax leeway of companies.

The effective tax rate of a company is calculated as the tax liability divided by the actual income. This ratio measures the overall tax burden of the company, and at the same time it is a neutral measure when comparing the distribution of the tax burden, for example, by industry or size and form of companies.

In the following we will first evaluate the broadening of the tax base in the dividend deduction system assuming that the company distributes all of its profits earned during the fiscal period to its shareholders. Thereafter we will look at the situation where a portion of the profits are retained in the company.

Company distributes entire profits of period to shareholders

When a company distributes all of its profits earned during a fiscal period to its shareholders, the equation depicted above can be presented in mathematical form as follows:

$$(3.5) \quad T = t * [\, AE - A - (1 - \frac{t_m}{t}) * d_d * D \,] + T_{mp}$$

When the entire profits of a period are distributed to the shareholders, the dividends are calculated from the following equation:

$$(3.6) \quad D = (AE - A) - T$$

By substituting this tax equation and solving for the statutory tax rate gives:

$$(3.7) \quad t = \frac{\overline{T} - T_{mp} - t_m * d_d * (\overline{AE} - A - \overline{T})}{\overline{AE} - A - d_d * (\overline{AE} - A - \overline{T})}$$

Where T = taxes
t = statutory tax rate
AE = actual earnings
A = earnings adjustment
t_m = municipal tax rate
d_d = dividend deduction percentage
D = dividends
T_{mp} = presumptive increase municipal tax
$\overline{AE}$ and $\overline{T}$ are given.

In the following analysis the ratio of taxes to actual earnings, i.e. the effective tax rate, is kept constant. The effective tax rate is set at 25 per cent, which corresponds to the empirically observed tax rate prior to the tax reforms in the period 1981-1985. The actual earnings are set at 100 for reasons of simplicity (see effective tax rate chapter 4). No presumptive increase in taxable income for municipal tax purposes is assumed to take place so that the value of the parameter T_{mp} is zero.

In figure 3.5 the effective tax rate is fixed at 25 per cent. The x axis depicts the amount of earnings adjustment as a percentage of actual earnings. The y axis depicts the statutory tax rate.

The various dividend deduction alternatives are presented in three cases: in the first alternative dividends can be deducted in full from taxable income in state taxation (curve d_d= 100%), in the second alternative 60 per cent of dividends can be deducted from earnings (curve d_d= 60%) and in the third alternative dividends cannot be deducted at all from earnings (curve d_d= 0%).

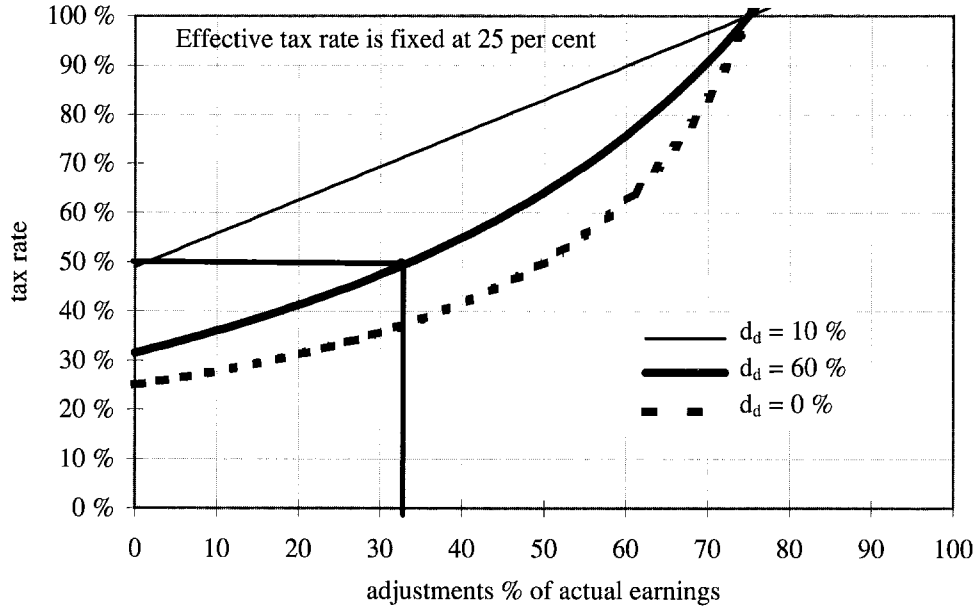

Figure 3.5. Combination of Earnings Adjustment and Statutory Tax Rate in Dividend Deduction System, d_d= dividend deduction percentage.

If the statutory tax rate is 50 per cent, the effective tax rate turns out to be 25 per cent if the dividend deduction percentage is 60 and the ratio of earnings adjustments to actual earnings is slightly less than 35 per cent. If on the other hand a dividend deduction of 100 per cent is allowed and the ratio of earnings adjustments to actual earnings is still about 35 per cent, then the statutory tax would have to rise over 70 per cent for the effective tax rate to remain at 25 per cent.

According to the business tax register of the National Board of Taxes, the total amount of dividends granted the 100 per cent deduction was FIM 1.3 billion and those granted the 60 per cent deduction was FIM 1.0 billion. Since the deduction amounts are of about the same magnitude, the "correct" tax rate would be between the 100 and 60 per cent curves. In this way the earnings adjustment percentage and the tax rate would rise to about 60 per cent, given that the effective tax rate is 25 per cent. Until 1986 the statutory tax rate was 60 per cent.

The above-presented calculations indicate that the size of the dividend deduction and other earnings adjustment possibilities have a profound impact upon the level of the effective tax rate.

The lower curve in the figure, where the dividend deduction is zero, corresponds to a situation where the 1993 imputation system prevails and the possibilities to adjust earnings have been eliminated for the most part. The curve crosses the y axis (= no earnings adjustment possibilities) at the 25 per cent point, which is the corporate income tax rate adopted in 1993. Now that

the statutory tax rate in the imputation system is the same as the effective tax rate, the lowering of the statutory tax rate from 50 per cent to 25 per cent by itself was not such a radical measure.

Only a portion of profits is distributed as dividends

In the case where a portion of the earnings is retained in the company, the dividends are calculated as follows:

(3.8) $D = (AE - A) - RE - T$

where RE = retained earnings.

By denoting the term $d_r = \frac{D}{D+RE}$ to depict the distributed dividends divided by the sum of retained earnings and dividends, the above equation takes the form

(3.9) $D = d_r * (AE - A - T)$

This implies that tax equation (3.5) should be modified to:

(3.10) $T = t * [\, AE - A - (1 - \frac{t_m}{t}) * d_d * d_r * (AE - A - T) \,] + T_{mp}$

from which we can solve the statutory tax rate

(3.11) $$t = \frac{\overline{T} - T_{mp} - t_m * d_d * d_r * (\overline{AE} - A - \overline{T})}{\overline{AE} - A - d_d * d_r (\overline{AE} - A - \overline{T})}$$

In the equation the actual earnings and tax have been fixed.

Figure 3.6 illustrates the impact of distributing dividends on the need for adjusting earnings when the company does not pay out all of its profits as dividends. Curve $d_r = 1$ corresponds to the situation in the previous figure where all after-tax profits are distributed to the shareholders and 60 per cent of the dividends can be deducted from earnings ($d_d = 60\%$). In other cases the curves depict the impact of raising the share of retained earnings. The more profits retained in the company, the greater the need for means to adjust earnings if the effective tax rate is intended to be kept unchanged. This is because the decline in the distribution of dividends also reduces the dividend deductions.

When the statutory tax rate is, for example, 50 per cent, and dividends are not distributed at all ($d_r = 0$), an effective tax rate of 25 per cent would require that earnings adjustments correspond to at least 50 per cent share of actual earnings.

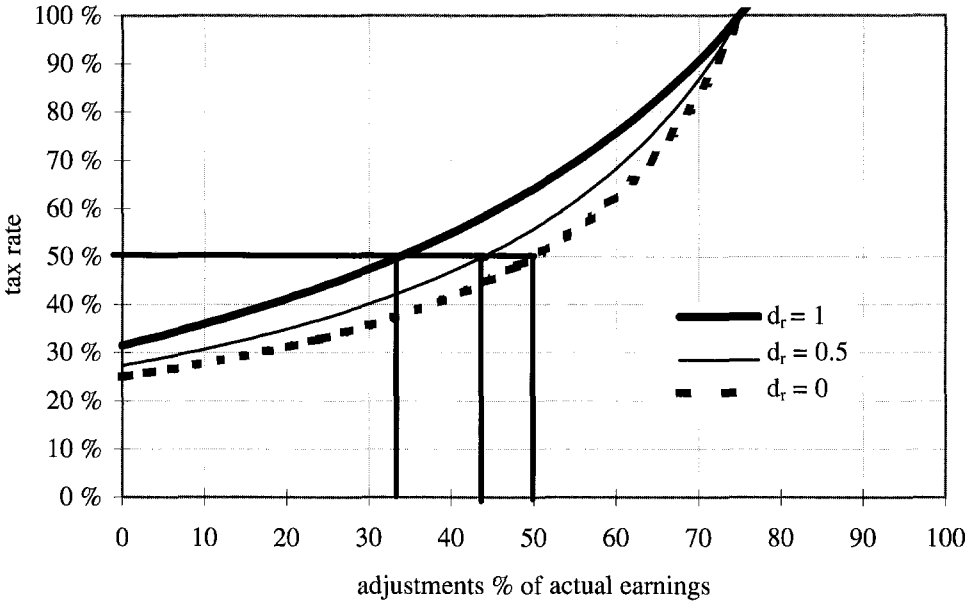

Figure 3.6. Combination of Earnings Adjustments and Statutory Tax Rate in Dividend Deduction System, dividend deduction percentage 60 % and the share of dividends relative total earnings, d_r, varies.

If on the other hand profits are distributed in full to the dividend recipients (d_r= 1), over 30 per cent share of actual earnings would suffice. If the potential for adjusting earnings is sufficient, i.e. for example at least 50 per cent of actual earnings, the company can freely choose how much of the profits to distribute and how much to retain in the company. Insufficient possibilities to adjust results can, due to tax reasons, lead to excessive distribution of dividends. The excessive payment of dividends decreases taxable income via the growing dividend deduction, while the share of retained earnings decreases.

The effective tax rate used in the figures above has been the average effective tax rate of companies, 25 per cent. Since the tax base was broadened in the tax reform by, among other things, cutting back on possibilities to adjust earnings, this had to be offset by at the same time lowering the statutory tax rate and eliminating presumptive income taxation so that the tax burden would not to be increased or eased. If the effective tax rate remains unchanged when shifting from the old system to the new one, the tax burden of companies would remain unchanged.

The average effective tax rates in the old system did not, however, tell the whole truth regarding the stringency of taxation, because companies did not use all possibilities to adjust earnings (figure 3.7 and 3.8). There would have been plenty of room for firms' extra manoeuvres. The unused possibilities to adjust earnings will play a significant role in estimating the impact of the shift of the tax regime on the financial state of companies.

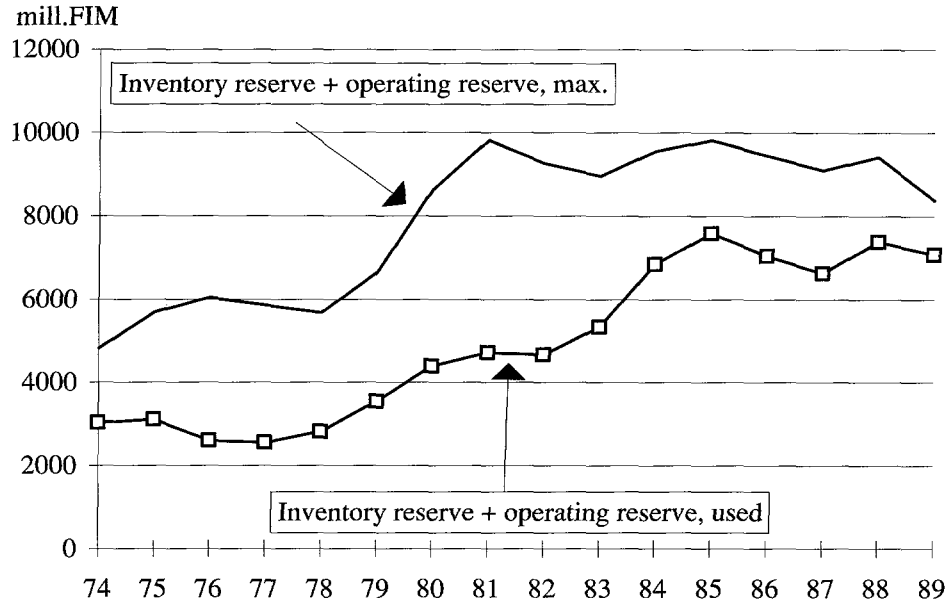

Figure 3.7 Maximum of Inventory Reserve + Operating Reserve and Used Reserves in Large Industrial Firms in 1974-1989.

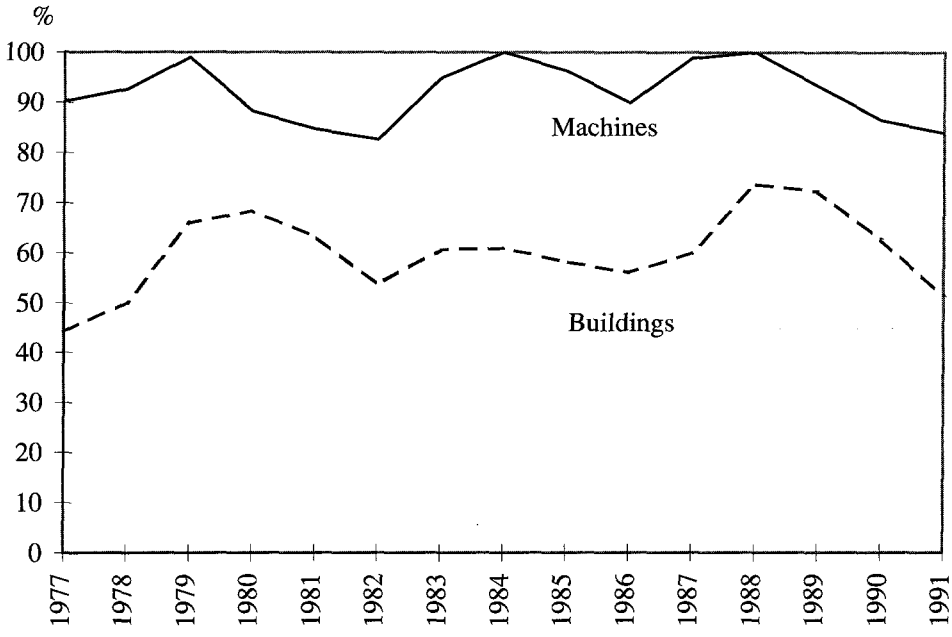

Figure 3.8 Used Depreciation of Non-financial Sector in 1975-91 (Source: Statistics Finland).

4

AVERAGE EFFECTIVE TAX RATE OF COMPANIES

Changes in the overall tax burden of companies can be evaluated by using effective tax rates. This measure can be used also to compare the interfirm tax burden. One of the reasons for the tax burden to vary among companies is the different possibilities of companies to adjust earnings both in terms of quantity and quality. For example, capital-intensive companies primarily use depreciation and labour-intensive companies use wage-based operating reserves. The neutrality of taxation can also be affected by the size of the company, the legal form of the enterprise, age and stage of development.

The average effective tax rate (*ATR*) is defined as the taxes accrued during the fiscal period (T) relative to true pre-tax profits (P_t).[1]

(4.1) $ATR = T/P_t * 100$

No accounting earnings computation perfectly measures true economic income. We estimate the effective tax rate denominator by exploiting two alternative measures with varying degrees of earnings adjustment items. We call them *broad income and narrow income.*

4.1 *Effective Tax Rate Measures*

In the case of the effective tax rate[2] based on the narrow income, taxes and true pre-tax profits are calculated as follows:

(4.2) $T = T_p + T_f$

(4.3) $P_t = P_a + T_p + CR$

where T_p = taxes deducted from fiscal period profits
T_f = taxes covered out of shareholders' equity
P_a = after-tax profit in fiscal period
CR = change in reserves.

In the income statement taxes are presented so that the taxes covered by shareholders' equity are deducted from the taxes accrued in the fiscal period so that we obtain the taxes deducted from the fiscal period profits (T_p). In the equation the tax concept (T) denotes the taxes corresponding to the tax liability of fiscal period, so that the taxes covered out of shareholders' equity (T_f) are added to the taxes deducted from fiscal period profits (T_p).

[1] Effective tax rates can be calculated also on the basis of the functional income. This is based on the figures of the National Accounts. In this case the true earnings depicts the income of all activities belonging to the individual industrial sectors. The corresponding taxation figures are not available since taxes are levied on individual firms. An approximation for taxes can be made using the aggregate figures for various sectors compiled from financial statements.

[2] The effective tax rates are calculated using data from the following sources:
- Financial statement statistics 1981-1992 (Statistics Finland),
- Bank statistics 1981-1992 (Statistics Finland and Bank of Finland),
- Insurance company statistics 1981-1991 (Ministry of Social Affairs and Health) and
- Data bank of corporations 1990 (VATT).

When calculating narrow income, accounting profits are summed with the taxes paid from the fiscal period profits (T_p) and the net change in reserves (CR).

In the case of the effective tax rate[3] based on broad income, pre-tax profits (P_t) are calculated as follows:

$$(4.4) \quad P_t = P_a + T_p + CR + OA - EPF + ITF \pm DCA$$

where P_a = after-tax profit in fiscal period
T_p = taxes deducted from fiscal period profits
CR = change in reserves
OA = other appropriations,
EPF = expenses paid out of funds
ITF = income transferred to reserves
DCA = cumulatively adjusted under-/overdepreciation.

Taxes are determined in the same way as in the effective tax rate of the narrow income. True income is calculated so that it includes all realised income while all unrealised expenses deducted from income are added back.

When calculating the broad income, the profits (P_a) determined for financial accounting purposes are adjusted by the change in reserves (CR) and the taxes from the fiscal period profits (T_p). Income has also been adjusted for other appropriations in conjunction with the closing of the accounts (OA). The other appropriations adjustment includes the elimination of imputed merger profits and losses as well as unrealised exchange rate changes. Expenses paid out of funds (EPF) have been deducted from profits and income transferred to reserves (ITF) have been added to profits. Depreciation (DCA) has been calculated in accordance with actual physical wear and tear by cumulatively adjusting the firm-specific depreciation figures of the basic data over the entire period under investigation. Depreciation in line with the true economic depreciation has been calculated using a rate of 15 per cent on the declining balance for machinery and 5 per cent for buildings.

4.2 *Effect of Earnings Adjustments on Effective Tax Rate*

The impact of various income and expense components included in the broad income has been evaluated using VATT's data on large industrial companies .[4] The tax and income components have been calculated for each

[3] The large industrial company data bank of VATT is used for 1974-1989.

[4] The data is comprised of the financial statements of 39 industrial companies for 1974-1989. Its coverage of industry's total net sales in 1974 was 36 per cent and 25 per cent in 1989. Due to mergers between the companies originally included, the data comprises 30 companies in 1989.

company, but the tax rates are presented as the average effective tax rate (ATR) on the aggregate level. The analysis covers the period 1974-1989. It ends the last year the dividend deduction system was in force.

In the calculations the tax factors are kept unchanged, but various earnings adjustment components are gradually taken into the denominator depicting the true earnings[5]. The second column of table 4.1 is the statutory tax rate. To its right are the effects of individual components of income and expenses. A positive ATR means that the component raises the effective tax rate while a negative sign means that it has a decreasing effect. In the last column on the right the effective tax rate is calculated by dividing taxes by broad income.

ATR 1 presents the effect of the difference in accounting earnings and taxable income[6]. While the statutory tax rate was 50 per cent in 1989, the difference between taxable income and accounting income reduced the

Year	Statutory tax rate	Diffrence between tax and accounting income	Change in reserves	Pension fund appropriations	Exchange rate changes	Merger differences and group contributions	Income transferred to funds	Expenses paid out of funds and capitalised interests	Depreciation difference	Broad effective tax rate
		ATR 1	ATR 2	ATR 3	ATR 4	ATR 5	ATR 6	ATR 7	ATR 8	
1974	60	-19.6	-28.6	-0.1	-0.7	-0.1	-0.4	0.1	-3.1	7.5
1975	60	-8.0	-10.9	8.0	-0.9	-6.5	-4.5	7.1	-0.2	44.1
1976	60	50.8	-224.9	2.3	-5.6	-122.8	2743.7	-2950.7	606.4	139.2
1977	60	129.5	-81.7	2.7	-44.2	1.1	-8.7	3.4	-141.0	-78.9
1978	60	-10.0	-26.5	2.4	-3.1	-1.8	-2.0	0.0	3.5	22.5
1979	60	-26.3	-20.5	0.1	-0.6	0.0	-0.9	0.0	-2.9	8.9
1980	60	-28.3	-18.4	1.8	-0.4	0.0	-1.1	0.1	-3.8	9.9
1981	60	-7.6	-24.5	1.3	-4.6	0.6	-3.8	0.5	-1.9	20.0
1982	60	22.7	-33.2	2.4	-18.1	-0.3	-9.7	0.3	18.7	42.8
1983	60	-29.0	-13.8	-0.1	-1.8	-0.1	-5.1	0.1	0.0	10.2
1984	60	-37.7	-13.9	-0.1	-0.5	-0.1	-0.5	0.0	-0.7	6.5
1985	60	-44.4	-5.5	-0.1	0.1	-0.2	-0.6	0.0	0.4	9.7
1986	50	-33.0	-1.7	0.1	-0.4	-0.5	-4.9	0.0	0.9	10.5
1987	50	-37.8	-1.4	-0.5	-0.3	2.8	-4.4	0.1	-0.2	8.3
1988	50	-44.6	-1.2	-0.6	0.0	0.0	-0.6	0.1	-0.3	2.8
1989	50	-29.6	-6.2	-1.2	0.0	0.5	-1.7	0.2	-1.9	10.1
Ave. 80-85	60	-20.7	-18.2	0.9	-4.2	0.0	-3.5	0.2	2.1	16.5
Ave. 86-89	50	-36.3	-2.6	-0.6	-0.2	0.7	-2.9	0.1	-0.4	7.9
Ave. 80-89	56	-26.9	-12.0	0.3	-2.6	0.3	-3.2	0.1	1.1	13.1

Table 4.1 Formation of Effective Tax Rate from Different Earnings Adjustment Components in 1974-1989. large company data, %.

[5] See also the effective tax rate concept in Committee Report 1987:39, Auerbach and Poterba 1987, Poterba 1991.

[6] The positive sign for ATR 1 can mean that items deducted for financial accounting purposes have not been approved for deduction from income for tax purposes. The difference has also been affected by the amount of presumptive taxes. A negative sign for ATR tells that deduction have been made for taxation purposes that were not made in financial accounting (e.g. dividend deduction) or not all accounting-based income has not been considered as taxable (e.g. tax-exempt capital gains or interest income included in the income statement).

effective tax rate to 20.4 per cent. The most significant differences in tax and accounting income stemmed from the dividend deduction made in central government taxation as well as the tax-exempt capital gains included in the income statement. When the change in reserves were added to income, the effective tax rate declined further to 14.2 per cent. When all earnings adjustment components were taken into account, the effective tax rate fell to 10.1 per cent, i.e. about 40 percentage points lower than the statutory tax rate.

When ATR 1 and ATR 2 are deducted from the statutory tax rate (difference between tax and accounting income and change in reserves), we obtain the effective tax rate based on the narrow income. The effect of these items on the effective tax rate of broad income is large, while the significance of other earnings adjustment components is rather modest. In the 1980s other earnings adjustment components together (ATR 3...ATR 8) lowered the average effective tax rate by 4 percentage points. The most important of these were depreciation differences and income transferred to reserves. The impact of the change in reserves was 12 percentage points.

The average effective tax rate in the 1980s is obtained from the statutory tax rate in the following manner:

Tax rate/ earnings adjustment component	percentage point	%
Statutory Tax Rate (ave)	56	
Effective tax rate	13	
Difference	43	100
- Difference between tax and accounting income	27	63
- Change in reserves	12	28
- Other earnings adjustment components	4	9

Of the difference between the statutory tax rate and the effective tax rate in the 1980s, an average of 63 per cent was based on the difference between tax and accounting income (incl. effects of municipal presumptive taxation), almost 30 per cent was due to changes in reserves and almost 10 per cent other earnings adjustment components.

The firm-specific effective tax rates were affected to a great extent by the possibilities available to companies to adjust earnings. In order to avoid an increase in taxes a company has been able to minimise its taxable income by adjusting its earnings in good years. The loss balancing has also reduced taxable income. Thus the ratio of taxes to true earnings has decreased and the effective tax rate fallen. During bad years the company may have been obliged to adjust its earnings to be better than they actually were for non-tax reasons. For example, the reduction of inventories may have led to releasing of reserves. Also the lowering of the maximum reserve percentages in the tax reforms has had the same impact. A company in a weak financial position had probably been subject also to presumptive taxes. For this reason the taxes relative to true earnings have grown and the effective tax rate risen.

Figure 4.1 compares the extremes of the tax rates, the tax rate based on the profits of the income statement (ATR taken into consideration) and the tax rate based on the broad income (ATR 1...ATR 8 taken into consideration) during the years 1978-1989. In addition it presents the most commonly used effective tax rate based on the narrow income (ATR 1...ATR 2 taken into consideration).

The recession in the beginning of the 1980s appears as a sharp peak in all the measures in 1982. In that year companies' earnings were worse than on average. The dividend distribution was lower than normal, so that the effect of the dividend distribution deduction on the effective tax rate was slight. Since companies were nevertheless taxed by municipalities on the basis of presumptive income, the effective tax rate rose clearly. For example, in 1982 the difference between the tax- and accounting-based income boosted the effective tax rate above the statutory tax rate.

During the overall period under investigation the effective tax rate has, regardless of the measure used, exhibited an opposite trend to that of profitability. Profitability improved in 1983-1984, weakened in 1985, improved again in 1986-1988 and gradually began to decline in 1989. During a boom the tax burden of companies has been relatively lighter than during a recession. This in combination with the cyclical sensitivity of our production structure has steepened our cyclical fluctuations compared to our competitors.

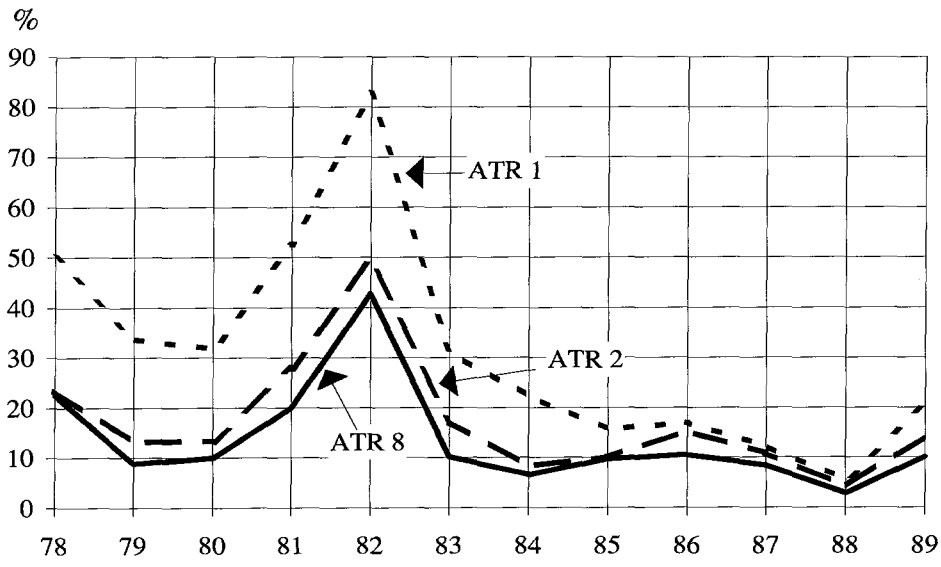

Figure 4.1 Effective Tax Rates of Large Industrial Companies in 1974-1989, % [7].

[7] The effective tax rate has been named according to which component has last been taken into consideration in the calculations. For technical reasons 1974-1977 has been omitted from the graph; ATR 1 was over 100 % in 1976-1977 and ATR 8 was negative in 1976.

Since corporate taxation has not been based on true earnings and the statutory tax rates have been high, taxation can be thought of as strengthening the cyclical fluctuations owing to the higher tax burden during booms and the lighter tax burden during recessions. The need to adjust earnings during booms has also contributed to peaks in investment. Corporate taxation has functioned procyclically.

In the 1993 corporate tax reform the taxation of earnings was tied more closely to accounting income and the remnants of presumptive taxation were abolished, so that the difference between tax- and accounting-based income has decreased. Since 1985 the possibilities to use reserves were cut back and after 1993 they were eliminated completely. Also the significance of income transferred to funds decreased as capital gains became fully liable to taxation.

4.3 *Effective Tax Rate of Narrow Income*

Effective tax rates have been calculated in table 4.2 for 1976-1992 in line with the narrow income using aggregate statistics broken down separately for the real and financial sectors. In the tax rates only the effect of the change in reserves on earnings has been taken into account.

Year	Statutory Tax Rate (corporations)[1]	Real sector	Financial sector[2]	Total enterprise sector
		Effective tax rate		
1976	60	50		
1977	60	71		
1978	60	37		
1979	60	24		
1980	60	23		
1981	60	29	16	27
1982	60	29	21	28
1983	60	26	23	26
1984	60	23	19	23
1985	60	24	17	23
1986	50	29	15	27
1987	50	20	11	19
1988	50	11	8	11
1989	50	22	18	21
1990	42	36	23	33
1991	40	neg.	neg.	neg.
1992	36	neg.	neg.	neg.
Ave.	1981-85	26	19	25
Ave.	1986-89	20	13	20
Ave.	1981-90	25	17	23

[1] An average municipal tax rate of 17 per cent (incl. church tax) has been used.
[2] Includes banks and insurance companies.

Table 4.2 Statutory Tax Rate and Effective Tax Rate in Real Sector (SIC 2-7) in 1976-1992 and in Financial Sector (SIC 8) and Total Enterprise Sector in 1981-1992, %

The weak profitability of companies raised the effective tax rate in the 1970s. In 1977 it rose higher than the statutory tax rate. In the early 1980s the effective tax rate remained relatively stable as the economy grew steadily. There were no major changes in the tax system either. The effective tax rate for the total enterprise sector averaged 23 per cent in 1981-1990. The effective tax rate of the real sector, 25 per cent, was clearly higher than in the financial sector, where it was 17 per cent.

The period of the corporate tax reform began actually in 1986 with the greater changes taking place in 1989-1991. In 1986, 1990 and 1991 the corporate tax rate was lowered and correspondingly the possibilities to adjust earnings were reduced. The effective tax rate of companies declined in the latter half of the 1980s by an average of 5 percentage points compared to the first half of the 1980s. The adoption of the imputation system in 1990 raised the effective tax rates appreciably and they rose higher in the 1990s than ever in the 1980s.

The new system accumulated more tax revenues than the old system. The streamlining of the possibilities to adjust earnings and the growth of profits had a profound impact on the financial statements, so that the normal trend whereby the effective tax rate fell when profitability rose no longer prevailed. As the economy went into a severe recession in 1991 and 1992 the effective tax rate turned negative. The true income of companies was in the red.

The calculations at the aggregate level nevertheless give a distorted picture of the tax burden of different companies. First of all, the dispersion of effective tax rates across companies can be large. A few individual companies, typically large or with extremely divergent results, can affect the aggregate effective tax rate to a considerable extent. The results can also be distorted by the fact that the corporate taxes are divided by the sum of negative and positive net profits. At the extreme a few tax-paying companies can raise the effective tax rate appreciably if unprofitable companies lower the earnings of the total enterprise sector near zero.

4.3.1 Distribution of Effective Tax Rate Across Companies

VATT's firm-specific data [8] has been used to evaluate the distribution of companies' effective tax rates. In the analysis the sample data has been raised to the level of all corporations. The year for evaluation is 1990, when the imputation system was adopted for the first time. The firm-specific data has been divided into companies distributing and those not distributing dividends as well as companies with positive and negative earnings. The analysis of the enterprise sector begins with the median, which tells where the midpoint of the effective tax rate lies. It also tells whether the tax rate is evenly distributed in the enterprise sector.

[8] The data bank comprises the financial statements and tax information of 4483 limited companies or co-operatives for the year 1990. The sample has been brought to the national level of limited companies by using multipliers. Since the sample is weighted toward large companies, the smaller companies represent a larger group of companies.

Effective Tax Rates	Average	Median
Entire sample	46	3
Agriculture and forestry	12	34
Mining and quarrying	45	39
Industry	41	3
Energy and water	52	19
Construction	34	11
Trade	67	0
Hotel and restaurants	27	0
Transport and communication	neg.	6
Services	42	0

Table 4.3 Weighted Average on Aggregate Level of Corporations' Effective Tax Rates and Median Tax Rates in 1990 by Branch, %

From table 4.3 it can be seen that individual companies can have a considerable impact on the aggregate figures. The effective tax rates on the aggregate level are considerably higher than the median rates except for transport and communications. The tax rate for the aggregate enterprise sector is 46 per cent, while half of the firm-specific effective tax rate does not exceed 3 per cent.

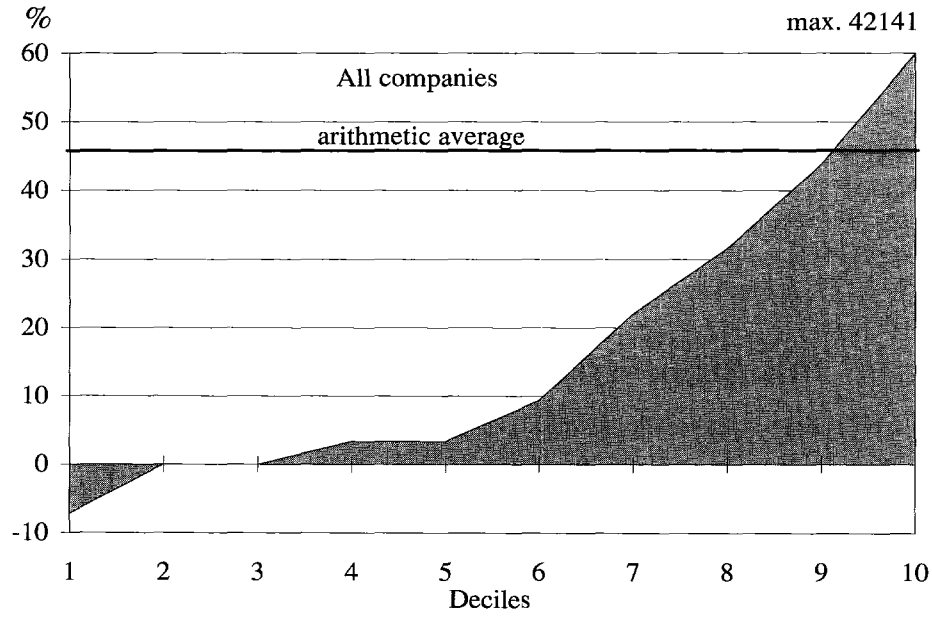

Figure 4.2 Effective Tax Rate by Deciles and Arithmetic Average of Aggregate Level in 1990, % [9]

[9] The high maximum value for the effective tax rate is attributable to the very low true earnings, which has resulted from the releasing of reserves. Taxes are determined on the basis of taxable income, which are higher than the true earnings. The same situation prevails if the company is subject to municipal presumptive taxation because of low income.

From figure 4.2 we can see that the effective tax rate changes in different deciles. Only 10 per cent of the companies are above the average of the aggregate level and in about 70 per cent of the companies the tax rate is below half of the average of the aggregate level. Accordingly the aggregate effective tax rate poorly describes the tax burden on the overall enterprise sector.

4.3.2 Dividend-Distributing and Nondistributing Companies

The sample consists of profitable and unprofitable companies with about two thirds of the companies' true income being positive and one third negative. Only slightly less than 20 per cent of the companies pay dividends while in the rest the profits are retained [10]. Only a small portion of the unprofitable companies pay dividends to their shareholders.

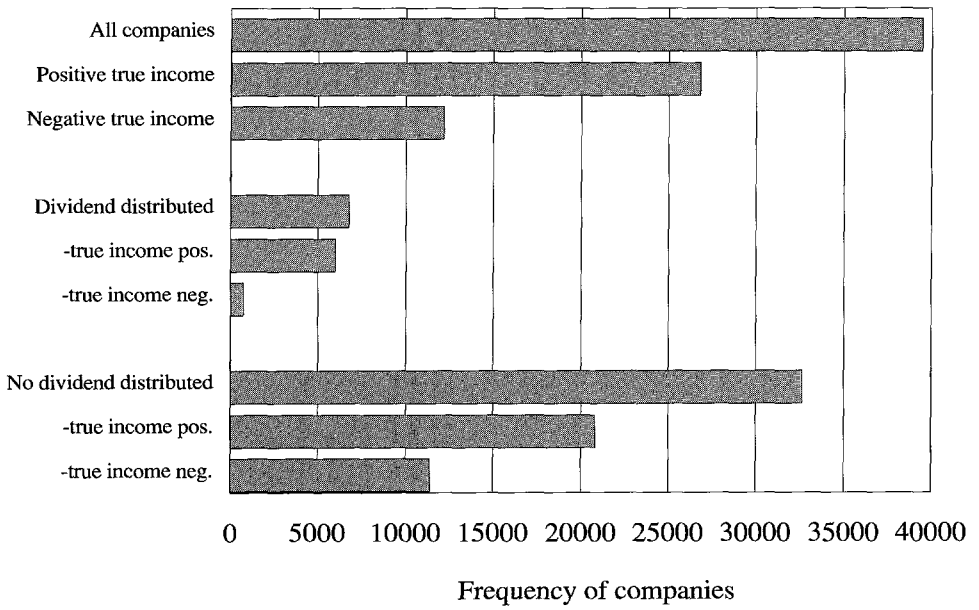

Figure 4.3 Frequency of Companies by Profitability and by Dividend Distribution Policy in 1990. [11]

[10] The relative scarcity of companies paying dividends is due partly to the fact that the number of firms in the sample has been raised to the aggregate company level. In large companies the payment of dividends is more common than in small ones. According to the tax registers of the National Board of Taxes, about 8500 companies paid dividends in 1990 while about 10000 companies paid dividends in the previous year.

[11] The data has been calculated on the basis of VATT's company data bank to correspond to all corporations.

Table 4.4 presents effective tax rates separately for profitable and unprofitable companies. In 1990 the median effective tax rate of profitable companies was 18 per cent, while for all companies it was 3 per cent. The unprofitable companies thus lowered the median significantly. A fourth of the profitable companies had effective tax rates over 34 per cent while another fourth of these firms had rates below 3 per cent.

	Lower Quartile	Median	Upper Quartile
True income positive	3	18	34
True income negative	-12	-2	0

Table 4.4 Effective Tax Rates of Profitable and Unprofitable Companies in 1990, %.

There are also difficulties in interpreting the effective tax rates across companies. For example, the tax rates of companies subject to presumptive taxation are often higher than the statutory tax rate. The presumptive taxation of unprofitable companies leads to a situation where the effective tax rate is negative. This kind of municipal taxation no longer has an effect on the calculations since it was abolished in 1993. After the adoption of the imputation system a corresponding situation could arise because a company distributing dividends is obliged to pay taxes even if its taxable income is zero.

Taxes in the imputation system are no longer paid solely on earned income, but rather a minimum tax is determined on the basis of dividends. If the minimum tax is greater than the tax determined according to its taxable income, the company is obliged to pay a compensatory tax. On the other hand, it is possible to credit the tax surpluses accrued from taxes on retained earnings against the compensatory tax. Even though in the new system the link between taxes and the company's earnings in the fiscal period was loosened, over the long run taxes will continue to be determined in accordance with the company's earnings. Thus the effective tax rate is an interesting measure also in the imputation system. Owing to the imputation system the effective tax rate is analysed in the following by decomposing the company data into dividend-distributing and nondistributing companies.

The effects of dividend distribution on the effective tax rate is readily apparent from table 4.5. The effective tax rate of companies with positive earnings that distributed dividends was clearly higher than that for companies that did not distribute dividends. The adjacent figures present the effective tax rate of profitable companies by deciles separately for those distributing and those not distributing dividends.

From the figures it can be seen that the payment of a dividend raises the effective tax rate appreciably. Nevertheless in ten per cent of the companies not distributing dividends the effective tax rates are higher than the statutory

	Lower Quartile	Median	Upper Quartile
True earnings positive:			
Dividend distributed	22	31	40
No dividend distributed	3	8	29
True earnings negative:			
Dividend distributed	-96	-49	-20
No dividend distributed	-9	-2	0

Table 4.5 Effective Tax Rate of Companies Decomposed by Profitability and Dividend Policy in 1990, %.

tax rate. On the one hand, this is due to the releasing of reserves that decreases the denominator of the effective tax rate. On the other hand it is also caused by presumptive taxation, which raises the numerator of the effective tax rate. In VATT's company data base about a third of the companies released reserves. This was spurred, among other things, by the fact that in 1989 after a prolonged boom the reserves were in many companies at their maximum, and the possibilities to create reserve had been gradually reduced.

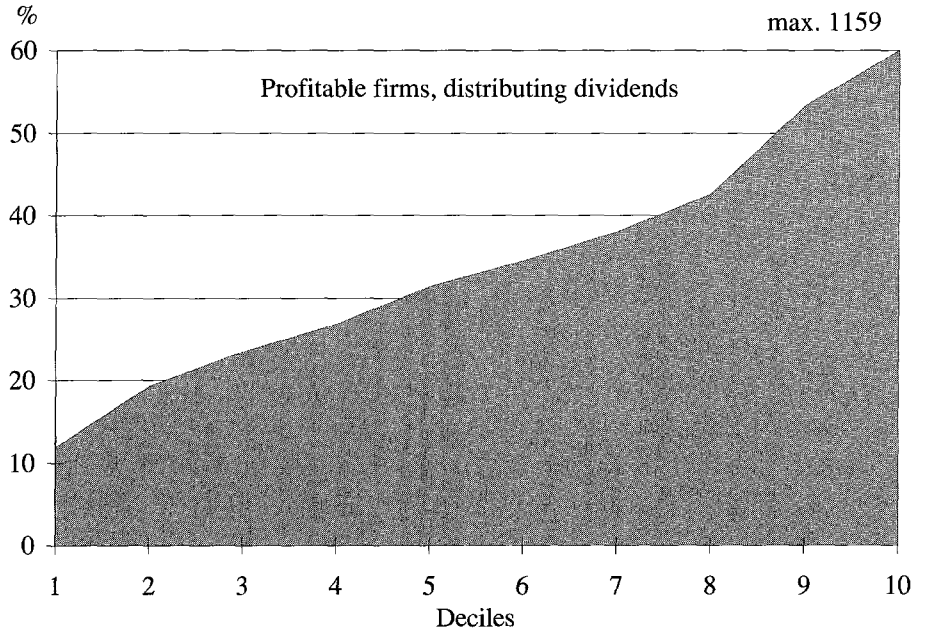

Figure 4.4 Effective Tax Rate of Profitable Firms Distributing Dividends by Decile in 1990, %.[12]

[12] The high maximum values for the effective tax rate are due to the fact that true earnings, used as the denominator for taxes, are very low.

5

EFFECTS OF CORPORATE TAX REFORMS

The interpretation of the dividend tax in the imputation system as a withholding tax of the company enables comparison between the dividend deduction system (old) and the imputation system (new). The starting points are distributed dividends and retained earnings. The new system is more competitive than the old one if it gives the company the possibility to distribute at least the same amount of dividends and to raise shareholders' equity by at least the same amount as in the old system.

Calculations on the impact of the tax reform - whether the tax burden is increased or eased - were made with the YRI microsimulation model at The Government Institute for Economic Research (VATT)[1] and with panel data on large industrial firms. The former is based on cross-section data, to which the tax parameters of various tax systems are applied. In the cross-sectional analysis it is not possible to take into consideration one of the main features of the imputation system, which allows tax surpluses accumulated in boom years to offset the compensatory taxes of slump years, and thus maintain a steady dividend stream. This interaction is investigated using the time series data on large industrial companies.

5.1 *Tax Reforms - Static Analysis*

The microsimulation model was used to simulate the various stages of the comprehensive tax reforms separately for the years 1989, 1990 and 1991 with the basic data from the years 1986 and 1987[2]. In the simulations we used the base years' taxable income. In this way the amount of the tax liability obtained in the simulations indicates the direct impact of the tax reform on the operative possibilities of the company. The simulations were based on hypothesis of alternative dividend distribution policies in the new system.

The imputation system, which came into effect in 1990, was developed throughout the early 1990s. Calculations based on 1990 data were carried out on the basis of the Tax Reform Acts of 1991-1993. Companies were presumed to have already adjusted their dividend policies in line with the new regime. The calculations proceed in two stages: first the tax effects are compared in a situation where the dividend distribution remains unchanged. After this we investigate the situation where the company follows not only the same dividend policy but also keeps retained earnings unchanged. In the latter

[1] The microsimulation models and the company data bank applied to them were build in the Planning Secretariat of the Ministry of Finance. After the reorganisation of activities they were transferred to the Government Institute for Economic Research. The calculations of the effects of corporate tax reforms have been made in the Planning Secretariat/VATT.

The data banks used in calculations were as follows:
1986 company data bank 514 companies, coverage in terms of net sales 40 %; 1987 company data bank 1600 companies; and 1989 and 1990 data bank 4500 companies, coverage 78 %.
All data in the company data bank have been obtained from the business tax register of National Board of Taxation.

[2] To illustrate the 1993 tax reform the basic data from 1990 was taxed in accordance with the 1991, 1992 and 1993 tax parameters.

alternative the cyclical policy or expansive behaviour of companies remains unchanged.

5.1.1 *Effects of 1989-1991 Comprehensive Tax Reforms*

The dividend deduction system remained in force still in 1989. In this system the taxation of companies and shareholders is separated. The dividend income received by shareholders was added to their other income and taxed in accordance with their marginal tax rate. This resulted, as a rule, in double taxation of distributed profits. On the other hand, small amounts of dividend income qualifying for the capital tax deduction were tax-free for the shareholder. In the imputation system the taxation of companies and shareholders was integrated.

In the imputation system of 1990 and 1991 the income of shareholders included the net dividend and the tax paid by the company. The gross dividend was in turn taxed at the marginal tax rate of the shareholder. Single taxation was carried out by crediting the shareholder for the tax paid by the company. In the end distributed dividends were taxed according to the tax rate of the shareholder.

The taxes of companies in the imputation system continue to be determined according to the taxable income. The minimum tax is applied also to dividends paid on unrestricted shareholders' equity. The company must show enough taxable income to cover both the taxes and dividends. In order for this condition to be fulfilled, the target income of the company is determined on the basis of the dividend and the tax rate in the following equation:

(5.1) *Target income = Dividends / (1 - Tax rate).*

Since when carrying out simulations on the effects of the comprehensive tax reform the basic data was from years when the dividend deduction system was in force, various alternatives were calculated for changes in dividend distribution policy when shifting to the imputation system.

The starting point was the case where the dividend distribution was kept unchanged [3], which corresponds to a situation where the dividend recipient is a foundation or company. In a second case it was assumed that the shareholder was a private individual who would not require a higher after-tax return than before. In this situation the net dividends of the shareholder were kept unchanged, and the marginal tax rate of the shareholder was presumed to be 60 per cent initially and 55 per cent in the new system.[4] The

[3] In chapter 6 the effects of the imputation system on different types of dividend recipients are investigated keeping the taxable income of the company constant. In the tax simulations the taxable income of the company is changed accordingly so that the company can pay various shareholders the same net dividends as in the previous system.

[4] Dividends were calculated from the equation $(1-T_{dpo}) * (1-T_d) * \text{dividends}/(1-T_{dpn})$, where
T_{dpo} = original marginal tax rate of dividend recipient,
T_{dpn} = marginal tax rate of dividend recipient after the reform and
T_d = corporate tax rate.

amount of dividends fell in half. In a third case the analysis was extended to a private individual's non-dividend gains from an investment. When the tax burden on capital gains from shares was increased, the shareholders were deemed to require higher dividend income from their investments. The dividend distribution was presumed to decline less than in the previous cases, as dividends declined by a fourth.

In the dividend deduction system a company could distribute a dividend either from the taxable income of the fiscal period or out of its shareholders' equity. The equity included the previous years' retained earnings as well as tax-exempt income such as tax-exempt capital gains. When the company's shareholder was a tax-exempt institution, the reduction in dividend distribution would have weakened the availability of risk capital. On the other hand if the shareholder was a private individual, it would have been possible to lower their dividends without the investors shifting funds elsewhere. If no capital gains were expected from the shares, it would have been possible to lower the dividends more than in a situation where the net dividends remained unchanged. The possibilities of the companies to change their dividend policy thus depended on their ownership base.

In 1989 the possibilities to adjust earnings were reduced somewhat. The dividend deduction was lowered from 60 per cent to 40 per cent. The deductibility of dividends distributed to new shares remained at 100 per cent. The statutory tax rate of companies was kept unchanged. When the effects of the 1989 tax system were evaluated, the remaining means of adjusting income were insufficient for achieving the original taxable income. The 1989 tax system appeared to have clearly raised the tax burden of companies.[5]

According to calculations the tax burden on companies increased in 1990 and the amount of taxes rose to record highs. This was partly due to the fact that only part of the dividends paid in this year gave companies the right to claim tax credits to ease their corporate taxation. Since dividends in the imputation system affect the amount of taxes directly, the tax burden increased the most in the case where the distributed dividends were kept unchanged (figure 5.1).

The 1991 tax reforms eased the company tax burden. The lowering of the tax rate and imputation credits granted on the basis of dividends received reduced taxes. The elimination of municipal presumptive taxation of operating income also eased the tax burden.

According to the simulation results the comprehensive tax reform brought about an increase in the tax burden of companies when 1991 is compared with 1988. Dividends could no longer be distributed free of tax.

[5] The results of the tax simulation model and the model itself are described in a memo of the Economic Planning Secretariat "Kokonaisverouudistuksen vaikutus yhteisöjen veroihin", 1989 (in Finnish only).

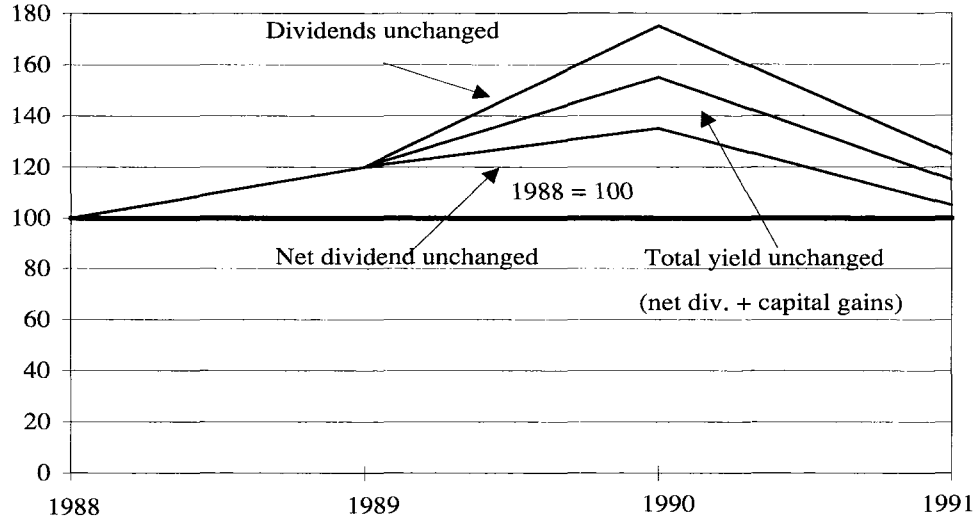

Figure 5.1 The Effects of The Tax Reform Acts 1989-1991 on Income Taxes of Limited Companies, 1987 Data Base.

If companies had changed their dividend policies in order to safeguard the availability of risk capital, the extent of the tightening would have depended on the company's ownership base. When the shareholders were private individuals whose dividend income was tax exempt, the tightening would have been very slight.

5.1.2 *Impact of 1993 Corporate Tax Reform*

Entire Profits of Company Distributed to Shareholders

VATT carried out simulations on the tax effects of the 1993 corporate and capital income tax reforms while in the planning stage [6]. In the calculations the dividends were assumed to remain unchanged, since the basic data was from 1990 when the imputation system was already in force. Companies were presumed to have already adjusted their dividend policies to the new situation.

The main changes in corporate taxation carried out in 1991-1993 were as follows:

In 1991 the possibilities to adjust earnings were cut back and the statutory tax rate was lowered from 50 per cent to 42 per cent (includes an average 17 per cent municipal tax rate, including church tax). The municipal

[6] Ministry of Finance 1991:28, 1992:23

presumptive taxation on operating income was eliminated. The taxation of capital gains on shares was tightened.

In 1992 the means to adjust earnings were further curtailed and the statutory tax rate was lowered to 36 per cent (incl. 17 municipal tax).

In 1993 the corporate tax rate was lowered to 25 per cent (at the same time as the municipal tax on corporations was eliminated) and practically all earnings adjustment possibilities were eliminated. The dividends of shareholders became subject to the same 25 per cent tax rate.

Figure 5.2 presents the results of the simulations when the data used includes the entire company group, including both dividend-distributing and non-distributing companies. According to the results the 1993 tax reform raised the tax burden of corporations, even if the taxation was lighter than that under the 1990 tax system. The change in taxes of companies of different size and from different industries were largely the same. The simulation results nevertheless do not depict the tax revenues in the recession year 1993; they instead indicate how the changes in the tax system would affect tax revenues if the economic situation in the base year 1990 prevailed in the year under consideration.

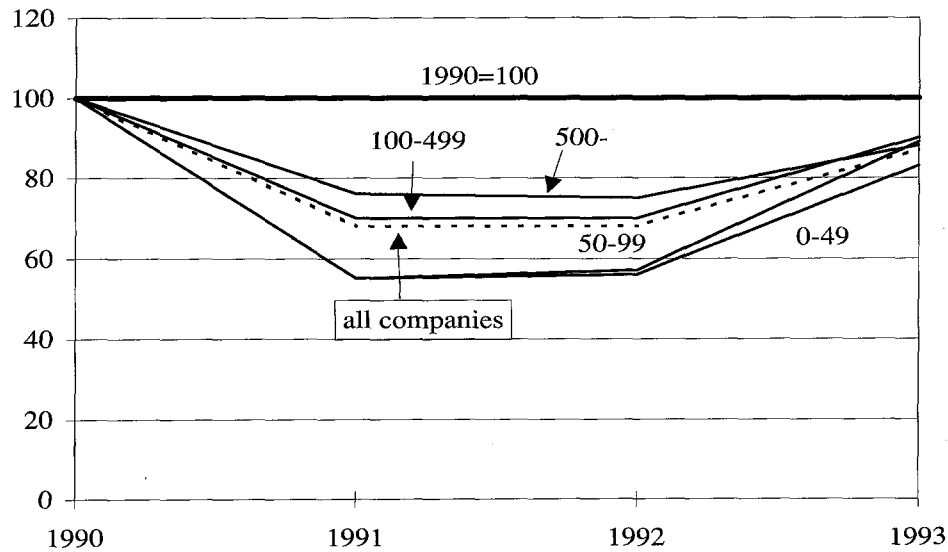

Figure 5.2 *The Effects of the Tax Reform Act of 1993 on Income Taxes of Limited Companies with Different Sizes of Personal, 1990 Data Base.*

Because in the imputation system the distributed dividends have a considerable bearing on the amount of corporate taxes, the impact of the corporate tax reform is analysed in figure 5.3 separately for the taxes of companies distributing and not distributing dividends. The calculations have been made both using 1990 and 1991 company data base.

When the companies are divided into those distributing and those not distributing dividends, the impact of the tax reforms is different: the tax burden of companies that did not distribute dividends was eased considerably from that in 1990, while the easing for dividend distributing companies was only about 20 per cent (using 1990 data base). When comparing the raising of the tax burden from 1990 to 1993 depicted in figure 5.2 with figure 5.3, it is evident that primarily the dividend-distributing companies account for the effects of the tax reform at the aggregate level [7]. On the other hand, the increasing of the tax burden from 1992 to 1993 was due to the non-distributing companies, where the elimination of the earnings adjustment possibilities had a more profound impact. The lowering of the corporate tax rate in 1993 affected dividend distributing companies by decreasing minimum income requirements, thereby easing the tax burden.

When evaluating the effects of the comprehensive tax reforms as well as the 1993 corporate tax reforms, it can be shown that the tax burden of dividend distributing companies was increased over the 1988 level, but because of the lowering of the tax rate the tax burden in 1993 was lighter than in 1990. The companies distributing dividends were often profitable ones.

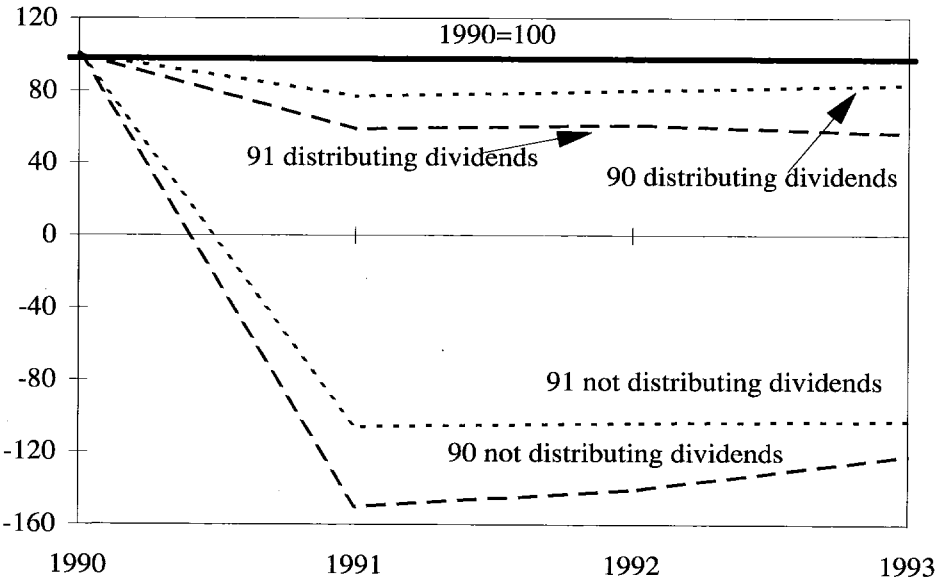

Figure 5.3 The Effects of the Tax Reform Act of 1993 on Income Taxes of Dividend Distributing and Non-distributing Limited Companies, 1990=100, 1990 and 1991 Data Base.

[7] The dividend distributing companies constituted about 20 per cent of the sample estimated at the level of all companies in the company data bank. The effect of large dividend-paying companies is emphasised in the aggregate analysis.

The increasing tax burden was explained by the minimum tax determined on the basis of dividends and the modest means available to adjust earnings. A strong case can nevertheless be made that after the tax reforms dividend distribution is vital for companies in order to ensure risk-financing.

A portion of the profits are retained in the company

The calculations presented above did not take into consideration the fact that companies retain profits for their own use. The simulations presented above thus depict the minimum tightening. In the following companies are assumed to show income to safeguard profit distribution and retain earnings for their own use. The amount of retained earnings is presumed to be equivalent to the change of unrestricted shareholders' equity that has actually accumulated in the sample data. The earnings were retained either for future investments or to prepare for different cyclical phases by accrual of tax surpluses, which facilitate the "tax-exempt" distribution of dividends in a slump. The dividends distributed were kept constant. The target income is determined according to the following equation:

$$(5.2)\quad \textit{Target income} = \frac{\textit{Dividends}}{1 - \textit{Tax rate}} + \frac{\textit{Retained earnings}}{1 - \textit{Tax rate}}$$

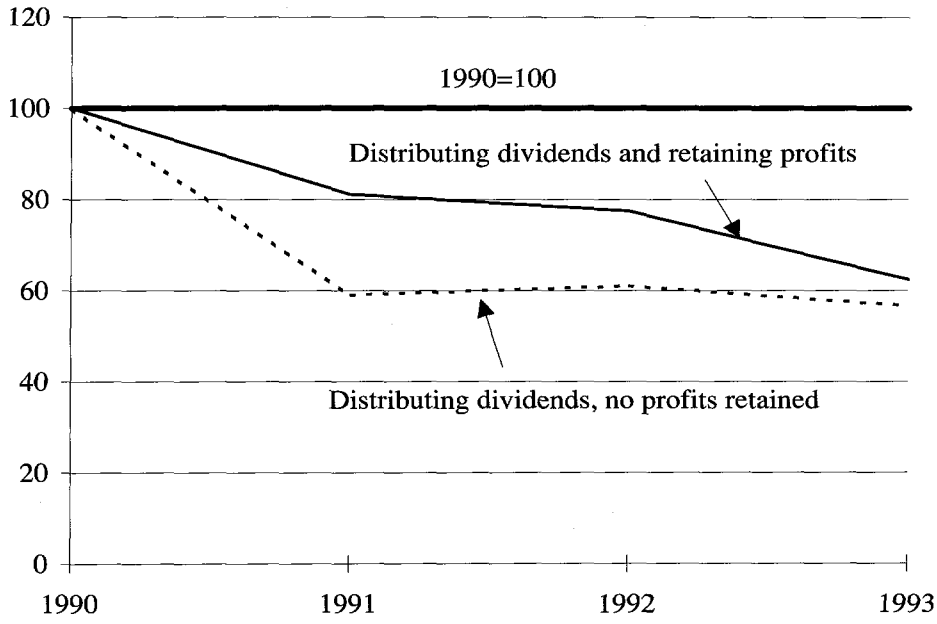

Figure 5.4 *The Effects of the Tax Reform Act of 1993 on Income Taxes of Dividend Distributing Limited Companies with and without Retained Earnings. Dividends are kept constant, 1991 Data Base.*

The figure 5.4 tells that the introduced retaining of earnings lowered a company's tax burden less relative to the case where no earnings were retained. This is, of course, due to the fact that the target income is higher when profits are retained. Nevertheless, the target income was attained by most companies, because the possibilities to adjust earnings were sufficient. The 1993 tax reform does not distinguish between whether profits are distributed as dividends in their entirety or profits are retained for the company's own use. Distributed and undistributed profits are subject to the same tax rate.

When the behaviour of companies with respect to dividend distribution and retained earnings is kept the same as in the base year, it can be seen that the corporate tax burden would have been eased relatively evenly. The picture is different if only the dividend distribution is taken into account. In this case the easing of the corporate tax burden would have occurred already in 1991. The impacts of the subsequent changes in the tax system would have been rather slight. While the tax surpluses related to retained earnings tell about the cyclical policy of companies and/or the intentions to expand, the joint indicator of dividend distribution and retained earnings gives a better picture of the impact of the tax reforms than evaluations only from the standpoint of dividend distribution.

5.2 Tax Reforms - Dynamic Analysis

Corporate competitiveness - the tax leeway to distribute dividends and accumulate equity - was investigated in the previous section in a static fashion by applying the tax systems of various years to the same data. Thus the impact of cyclical factors are not taken into consideration. VATT's panel data on large industrial companies allows the effects of tax reform to be studied as a time series. Seven listed industrial companies have been selected from the panel data in order to appraise the effects of the tax reforms in detail. The criteria for selecting companies for the case study has been capital or labour intensity as well as the company size.

The calculations are carried out using the tax systems of 1989 and 1993. At the first stage the 1993 imputation system is nevertheless not taken into account. We will study the sufficiency of depreciation allowances to compensate the eliminated reserves. At the second stage we will evaluate how the adoption of the imputation system affects the results. The figures from the financial statements of the companies selected for the case study are applied to the 1989 dividend deduction system and the 1993 imputation system.

The functioning of the imputation system is evaluated with respect to the tax surpluses and compensatory tax in different cyclical situations. The imputation system entails taking into consideration the taxes paid on retained earnings in the taxation of distributed profits in subsequent years. Thus when

determining the tax liability of a company, the taxes paid on retained earnings, i.e. tax surpluses, are added to the comparison tax determined according to the firm's income until the minimum tax on dividends is reached. In this way the compensatory tax can be avoided. We will also study whether it is possible for companies to increase their dividend distribution without tax implications.

5.2.1 Sufficiency of Depreciation to Replace Reserves

After the elimination of the possibilities to use reserves, companies are presumed to use depreciation of fixed assets more than previously in the adjustment of earnings. In order for the tax burden not to increase, the amount of unused depreciation allowances should be at least as large as the change in reserves during the base year, presuming the tax rate remains unchanged. In connection with the elimination of reserves, the tax rate was also lowered, so that taxable income could increase without taxes rising. The unused depreciation allowances thus do not have to be as high as the previous increases in reserves.

In the following we evaluate for individual companies how much the unused depreciation potential can offset the elimination of reserves. In the calculations we consider what would have happened to various companies if they had not used reserves to adjust earnings, but had instead used the possibilities to depreciate fixed assets.

The companies are presumed to have increased annual depreciation in line with the current increase in reserves and to have decreased annual depreciation in line with the current decreases in reserves. Using time series data it is determined how soon the depreciation base of the company is depleted if there are no possibilities to use reserves.

The calculations are based on the following assumptions:

- During 1974-1989 all changes in reserves are eliminated. Depreciation is changed by the same magnitude and the changes are allocated to machinery, equipment and building depreciation.
- The increases in depreciation are allocated first to machinery and equipment depreciation. If they reach their maximum level, the remainder are allocated to building depreciation.
- The maximum of machinery and equipment depreciation is kept at 30 per cent of the declining balance. If the depreciation rate used by the company is nevertheless greater than this rate, this is the accepted ceiling. In this case the increase in depreciation corresponding to the increase in reserves is allocated in its entirety to building depreciation.
- The maximum depreciation rate on buildings and construction is 7 per cent of the declining balance in line with the company tax rules. If the depreciation rate used by the company is higher, it is nevertheless accepted as the maximum rate. In the sample both machinery and building depreciation are in actuality higher than the maximum rates called for by

the company tax rules. Evidently these cases reflect the use of development areas' depreciation.
- If the maximum amount of building depreciation is reached, the remaining portion of the increase in reserves is credited as income. The crediting of income is regarded as an overall increase in taxable income.
- All other items used to adjust earnings are kept unchanged.

According to the calculations the impact of the tax reform depends upon the size of the company and its capital intensity. The more labour intensive and smaller the company, the more likely it is that the tax burden increases. Alternatively, the more capital intensive and larger the company, the more likely it is that the tax burden decreases.

Table 5.1 presents the changes (in 1989 prices) in the corporate taxes based on statutory tax rate after shifting from the old system to the new system. The changes in companies' reserves have been replaced by changes in depreciation in different year up to the maximum levels allowed by the tax regulations. Any remaining portion of the increase in reserves raises the taxable income of companies accordingly. Taxes do not necessarily rise, however, if the lowering of the tax rate to 25 per cent offsets the rise in taxable income.

In most cases the lowering of the tax rate compensates completely or even overcompensates for the insufficiency of the depreciation studied above. Even though the taxable income rises, the lowering of the tax rate reduces the tax liability.

Company	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
Small and labour-intensive company:																
Company A:	3	1	2	-1	4	6	-1	1	-1	3	0	-2	-5	-2	-5	neg
Company B:	-0	2	neg	0	-2	1	0	-2	0	-2	-2	-2	2	2	-29	-1
Small and capital-intensive company:																
Company C:	-2	0	neg	neg	neg	neg	3	-3	neg	neg	-3	-8	-5	-9	-1	17
Large and labour-intensive company:																
Company E:	12	-31	-26	-24	-25	-14	7	-6	-31	-19	-45	-109	-3	-24	-318	32
Large and capital-intensive company:																
Company D:	29	70	-14	-13	21	-16	-18	23	41	58	28	-92	-96	-252	-107	neg
Company F:	-27	-14	-19	-22	23	6	-22	-17	-17	-18	-15	-18	-13	-15	9	-24
Company G:	16	-35	neg	neg	-29	-37	-32	-33	neg	-30	-40	-50	-36	-40	-49	-45

Table 5.1 Change in Taxes of Case-Study Firms after Shifting from Old Regime (Pre-tax Earnings in Income Statement) to New Regime (Changes in Companies' Reserves Have Been Replaced by Changes in Depreciation) million FIM, 1989 prices[8]

[8] If the sign is negative, the result means the easing of the tax burden compared to the previous system. The abbreviation "neg." refers to situations where the taxable income is negative.

The calculations indicate that capital-intensive companies have sufficient depreciation mass in order to adjust their earnings. The sufficiency of possibilities to adjust earnings combined with the lowering of the tax rate does not, however, depict the current change in the company's tax position, since the main features of the imputation system are not taken into consideration: tax surpluses accumulated during boom years can be credited against compensatory taxes in slump years when the dividend stream is kept steady. The dividend stream determines the minimum taxes of the company.

5.2.2 Adjustment to Imputation System

The seven large companies dealt with in the case study above are also subjected to simulations in 1974-1989 under the conditions of the imputation system. The time series data can be used to shed some light on the significance of the tax surpluses and compensatory taxes belonging to the imputation system. Otherwise the target income of the company is determined in these calculations according to the same principles as the cross sectional analysis.

The corporate taxes of the company in the imputation system are assessed in accordance with the following equation:

(5.3) *Taxes = Statutory tax rate * True income + Compensatory tax - Tax surpluses*

The point of departure is a situation where the target income of the company is determined purely on the basis of dividends distributed, i.e. target income = dividends / (1-statutory tax rate). The aim of the calculations is to estimate which tax system ties up more funds when distributing the same amount of dividends.

In the simulations the company accumulates tax surpluses if the depreciation on fixed capital is insufficient to adjust the earnings to the target income scaled in line with dividends. If the comparison tax based on current income is below the minimum tax based on dividends paid, the company will have to pay the compensatory tax. In this case the company distributes more dividends than its annual income would call for. The compensatory tax can nevertheless be offset by taxes paid previously on retained earnings (tax surpluses).

The company cannot benefit from the tax surplus if its depreciation used is continuously at its maximum level, and if the company can't reach its target income. The company cannot nevertheless use retained earnings for investment, so that the possibilities for using depreciation grow. The tax surpluses can be exploited if the company's taxable income can be decreased sufficiently with the depreciation on new investments. Alternatively the company can use tax surpluses by paying more dividends.

When calculating taxes in line with for the 1989 and 1993 tax systems, the financial statements of the sample companies are revised completely for the

years 1974-1989 so that the continuity between one accounting period to the next remains unbroken. The bottom lines of the balance sheet change but the two sides of the balance sheet remain equal. The depreciation corrections are cumulative since the adjustment to new tax system occurs only via depreciation [9].

The effects of changes in the tax system in previous years are eliminated by carrying out tax simulations on the data separately on the basis of the 1989 tax rules and the 1993 tax rules. The difference in the simulation results depicts the tax revenue effects of the 1990-1993 tax reform.

The 1989 tax rules are applied using the following maximum amounts:

- Inventory reserves may be a maximum of 35 per cent of the acquisition cost of the inventory if the operating reserve is not being used and 30 per cent of the acquisition cost of the inventory if the operating reserve is being used.
- The operating reserve can be at most 30 per cent of the total wages.
- The investment reserve is obtained by deducting a maximum of 20 per cent of the fiscal period's profits before the investment reserve.
- The building and construction depreciation can be a maximum of 9 per cent using the declining balance method and the depreciation of the machinery and equipment can be a maximum of 30 per cent of the declining balance [10].
- Tax relief-based depreciation in use in previous years are not accepted. These have included the unrestricted depreciation of industrial investment, order-related depreciation of industrial investment and acquisition reserves.
- The corporate income tax rate applied is 50 per cent, of which 33 per cent is the state tax rate and 17 per cent the municipal tax rate.

The calculations for the 1993 tax regulations included the following features:

- No possibilities for reserves.
- The maximum depreciation rate on buildings was 7 per cent while for machinery and equipment 30 per cent.
- The corporate income tax rate is 25 per cent.
- No municipal presumptive tax.

A summary of the effects of the tax reform on corporate taxes in line with shifting from the 1989 tax system to the 1993 tax system is presented in table

[9] The one-time adjustment of depreciation would be misleading: when depreciation is increased in year 1, year 2 must take into account the reduction in the depreciation base that took place in year 1. If this is not done, the depreciation base is available for use indefinitely. The easing of taxation spurred by tax reform in this manner would be exaggerated in the calculations.

[10] In the previous calculations where the replacement of reserves with depreciation in the actual situations prevailing in 1974-1989, the maximum amount of depreciation was allowed to exceed the upper limit on depreciation called for by the tax regulations for companies if the company had done so in its own accounting.

5.2. Company C, which was unprofitable for several years, did not distribute any dividends for ten years. Company G did not pay a dividend in one of the years under consideration. All other companies distributed a dividend regularly. Thus in the taxation of the case-study companies the dividends determined for the most part the minimum tax of the 1993 tax system.

	Small labour-intensive		Small capital-intensive	Large labour-intensive	Large capital-intensive		
Year	A	B	C	E	D	F	G
1974	5.8	0.4	-4.7	24.0	64.3	-11.1	47.0
1975	1.7	-0.3	-6.2	-12.7	104.6	10.4	-34.4
1976	2.7	-0.6	-8.2	-41.4	-7.5	-7.9	-30.7
1977	-0.2	-0.1	-9.8	5.4	-6.6	-6.5	-30.1
1978	-1.9	-1.5	-8.6	6.5	-80.4	77.8	5.2
1979	4.5	3.0	-7.0	24.2	-15.1	-11.4	8.4
1980	-0.5	1.3	3.9	32.7	2.0	-9.3	11.6
1981	-3.5	0.6	-3.4	3.8	53.9	-4.4	-33.3
1982	-0.3	0.5	1.4	-24.4	87.7	-5.7	-41.8
1983	-6.1	-1.1	-0.9	33.6	131.7	-5.5	-14.4
1984	-8.3	0.7	0.8	5.4	148.7	-4.9	-26.1
1985	-0.8	1.9	4.8	77.9	-51.7	-5.4	-2.1
1986	-1.2	-5.0	5.5	-6.6	47.9	-6.2	-24.9
1987	-2.1	-2.9	-1.1	-57.9	5.4	37.3	7.2
1988	-4.9	5.9	9.5	38.2	0.0	21.6	4.0
1989	0.0	-2.8	8.2	-99.2	0.0	25.0	11.2
Total	-14.9	-0.0	-15.7	9.4	485.0	94.0	-143.1

Table 5.2 *Change in Taxes of Case-study Companies A–G When Shifting from 1989 Tax System to 1993 Tax System, FIM million (1989 prices).*

On the whole the tax burden of company A, B, C and G eases and that of D, E, F increases. The easing of the tax burden of company C is caused primarily by the fact that the municipal presumptive tax was no longer in force in 1993. The tax burden was eased relatively the most in the large and capital-intensive company G, the taxes of which declined on average by almost 30 per cent. In all the case-study companies the tax burden increased on average by about 15 per cent.

Company A is the smallest and most labour-intensive of the case-study companies. The depreciation of the company was initially at its maximum and below the maximum level only in 1988-1989 after the releasing of reserves. Only in 1989 were the dividends distributed excess of the taxable income.

Even though the evaluation covers seven companies over a 16-year period, no company has to ever pay the compensatory tax. Companies G, D and A come close to being liable for the compensatory tax, but it is eliminated with tax surpluses, abundant amounts of which are available from previous years.

The study is extended further by estimating how much the companies can increase their dividend distribution while shifting from one dividend tax system to the other without tax implications.

5.2.3 *Effect of Imputation System on Distribution of Dividends*

In the calculations dealt with above the target income of the company was determined on the basis of the dividends actually paid. Thus the minimum tax of the company determined on the basis of dividend distribution was a given factor that could not be changed in the calculations. Thus the reason for the accumulation of the tax surplus was deemed to be the excessive taxable income relative to the dividend distribution. The tax calculated from earnings surpassed the minimum tax linked to dividends. Accordingly companies were able to increase their dividend distribution without tax implications. The increasing dividend distribution indeed affected the shareholders' equity of the companies.

The seven case-study companies could have doubled their dividends on average in 1974-1989 with taxes remaining the same (table 5.3). In certain companies the distribution of profits could have even tripled.

The large and capital-intensive company G could increase its dividend distribution less than several other companies. It accumulated no tax surpluses at all since it had an abundant amount of unused depreciation potential. Company G could not raise its dividends without increasing its taxes.

Table 5.3 indicates that the ratio of shareholders' equity to total assets declined by about three percentage points as a result of increased dividend distribution. The large capital-intensive company G, which does not increase its dividend distribution, nevertheless lowers the overall average considerably. The growth in the dividend distribution of companies A and B reduces the share of shareholders' equity in the balance sheet by almost 10 percentage points.

The case-study companies distributed dividends in actuality only from the earnings of the fiscal period, not at all from retained earnings. Increasing the dividend distribution in the manner depicted above leads without exception to a greater distribution of profits than enabled by the annual result of the company, so that also retained earnings would be distributed as dividends. This rule-of-thumb is broken only in 1987-1989, when the true annual earnings of the fiscal period were so large that there is room for raising dividends in the manner depicted in the calculations.

The calculations indicate that in the current imputation system companies have significant leeway, even though the possibilities to adjust earnings have been cut back. The dividend distribution is an important tool in tax planning. If a company distributes more dividends over the long run than it has generated earnings, it distributes the wealth of the company to the owners and at the same time the taxation of capital gains can be avoided.

Company	A	B	C	D	E	F	G	A–G
New maximum dividends/ realised dividends	3.24	3.75	2.94	2.88	2.36	1.73	1.02	2.03
Shareholders' equity, % of total assets								
- Realised	41	49	26	28	35	27	28	29
- After paying more dividends	32	41	25	22	29	25	28	26

Table 5.3. Possibilities for Higher Dividends in Companies A-F on Average in 1974-1989. When Accumulation of Tax Surpluses is Prevented by Raising Dividends.

Table 5.4 presents the dividend distribution of the case-study companies during 1974-1994. Of special interest are the years 1990-1994, which until now have not been evaluated but where the effects of the imputation system should be evident.

Year	A	B	C	D	E	F	G	A–G
1974	25.0	10.0	4.0	10.0	8.9	16.1	7.3	9.3
1975	10.0	8.1	2.0	5.5	10.1	12.9	7.3	8.1
1976	10.0	8.0	0.0	7.5	8.1	12.9	4.3	6.3
1977	10.0	8.0	0.0	6.0	8.1	17.7	5.5	7.0
1978	12.0	10.0	0.0	6.0	8.1	16.1	6.0	7.2
1979	27.0	12.0	0.0	7.1	10.2	20.1	8.1	9.0
1980	12.0	14.0	0.0	9.1	8.7	11.2	8.0	8.5
1981	16.0	10.2	0.0	11.1	11.2	11.2	6.0	9.0
1982	18.0	12.0	0.0	9.1	9.4	11.2	0.0	6.6
1983	20.0	12.0	0.0	13.7	11.2	9.5	6.0	9.8
1984	20.0	14.0	0.0	13.1	8.2	10.0	8.1	9.7
1985	20.0	15.0	0.0	13.1	14.2	11.5	8.1	11.2
1986	29.0	15.1	0.0	13.1	13.6	12.2	9.6	11.6
1987	33.3	15.4	6.0	13.1	18.9	13.0	10.2	13.7
1988	6.6	18.8	5.7	13.1	16.1	11.1	11.0	12.6
1989	7.0	18.8	10.0	11.3	14.1	12.0	11.0	12.1
1990	4.3	16.8	6.0	14.0	14.1	14.2	8.0	11.3
1991	5.4	16.8	0.0	10.0	10.1	11.3	4.0	7.4
1992	13.5	23.8	0.0	10.0	10.1	11.3	4.0	7.6
1993	15.5	30.8	0.0	14.0	15.6	16.0	5.3	10.2
1994	27.9	26.2	10.0	20.0	50.0	15.0	10.0	23.6

Table 5.4 Dividend Distribution Ratio[11] of Case-study Companies A–G in 1974-1994, %.

[11] Dividends paid from the accounting period as percentage of shareholder's equity at the end of the accounting period.

In the first two years of the imputation system the dividend distribution ratio generally fell. This might be due to both the imputation system itself and the severe recession in the Finnish economy. When the corporate tax reforms took their final form in 1993, all companies' dividend ratios rose in the years 1993-1994. The reason for this can be both the corporate tax reform and the boom in the Finnish export industry.

The tax reform of 1993 puts pressure on companies distributing dividends to increase depreciation for two reasons. First, the reserves phased out of use have to be replaced by depreciation. Second, because in several case-study companies the target income in line with the 1993 tax system is lower than the original taxable income, the target income determined on the basis of dividend distribution would seem to require increased depreciation. Thus the depreciation of several companies is continually at its maximum level. Since they cannot attain their target income even with the maximum depreciation, the comparison tax exceeds the minimum tax. For this reason they have to pay tax also on undistributed profits so that the company continuously accumulates tax surpluses. Despite this, the taxes calculated in accordance with the 1993 tax system are lower than the taxes according to the 1989 tax system for four out of five of the case-study companies. On the other hand, companies manage to avoid the compensatory tax by use of tax surpluses: no company in 16 years of the case study has to pay the compensatory tax. All in all the tax reform makes it possible to distribute more dividends without tax claims compared with the dividend deduction system.

6

TAXATION OF DIFFERENT DIVIDEND RECIPIENTS

When shifting to the imputation system in corporate taxation, the taxation of companies and shareholders was integrated with respect to profit distribution. Even though the dividends in the dividend deduction system in principle were double taxed, in practice the system often led to a situation where not even single taxation was realised.

In the following we compare the tax treatment of a natural person, limited company, non-profit institution and foreign shareholder in accordance with the old dividend deduction system and the new 1993 imputation system.

One of the main reasons for the undertaxation was related to the prohibition of chain taxation. A domestic company was tax exempt for as regards dividends received from another domestic corporation both in the state and municipal taxation. If these dividends were not redistributed they did not become fully subject to state tax, and the state tax was entirely avoided if the dividends were paid on the new share capital. Respectively, the distributing company was in the state taxation entitled to the dividend deduction of 60 per cent on the return of old share capital and 100 per cent on the yield of new share capital.

Also the dividends paid to foreign recipients were not fully taxed. Even if the dividends were under a tax treaty tax exempt or taxed at a relatively low withholding tax rate, the distributing company took advantage of the dividend deduction.

The second reason for eroding the tax base of dividend income is the capital income deduction which was allowed in the taxation of households. The dividends received were tax exempt up to the full amount of this deduction.

Third, it was possible to distribute dividends from non-taxed funds (i.e. tax-free capital gains and other tax-exempt income). Also the ample means to adjust earnings granted to companies increased the non-taxed unrestricted shareholders' equity which could be distributed to shareholders.

When shifting to the imputation system (avoir fiscal system) a main principle of the tax reform was that capital income should be subject to tax once. The dividend recipient groups that were taxed twice in the dividend deduction system benefit from shifting to the imputation system. Those groups that were taxed less than once, on the other hand, lost their relative advantage. In addition to changes in the system, the lowering of the tax rate had a crucial effect on results.

This study applies to cases, where the corporation distributes all profits to its shareholders and in cases where the corporation pays dividends from untaxed funds. First we examine the change in the taxes of the dividend distributing company and after that the change in taxes of various shareholders. After that the overall tax burden of distributed profits is studied.

6.1 Dividend Distributing Company

In order for the differences in the systems to become apparent, the 1993 tax system (imputation system) is presented first with the same tax rate as in the 1989 tax system and then according to the tax rate actually in effect. In the former case, denoted by "AF ", the corporate tax rate is 50 per cent. In the latter case, AF , the actual 1993 tax rates are applied: a 25 per cent corporate tax rate.

In the old system a company was not liable for state tax on dividends distributed to new share capital owing to the 100 per cent dividend deduction. To the dividends on old share capital a 40-60 per cent deduction was applied. When the entire pre-tax income was distributed as dividends, the company nevertheless had to pay a certain amount of state tax on the taxable income shown in order to cover the municipal tax.

We assume that the company distributes all after-tax profits to its shareholders. In the old system the dividends affected the corporate tax via dividend deduction. Thus, in order to specify the dividends we must first calculate the corporate taxes as follows:

$$(6.1) \quad T = t * (I - (1 - \frac{t_m}{t}) * d_d * D)$$

Where T = tax
t = tax rate
I = income
t_m = municipal tax rate
d_d = dividend distribution deduction
D = dividends

When all of the after-tax income is distributed as dividends, the variable D can be replaced by $I-T$, so that taxes in this case can be expressed as:

$$(6.2) \quad T = \frac{I * (t - t * (1 - \frac{t_m}{t}) * d_d)}{1 - t * (1 - \frac{t_m}{t}) * d_d)}$$

Assume the fiscal period income is 100. The distributed dividends are determined by deducting taxes from 100. After that the dividend deduction can be calculated. The taxable income in state taxation is equal to the sum of distributed dividends and municipal tax.

We assume that the company in addition to the fiscal period profit pays dividends from untaxed funds. The company is entitled to the dividend deduction on the basis of the total of dividends.

We assume that the company pays dividends from untaxed funds (exc. tax-free dividends) to the extent that the extra dividend deduction eliminates totally the taxable income in state taxation. However, the municipal tax liability is to be taken into account. In order to make these calculations

comparable with the previous calculation the total sum of pre-tax income and dividends from untaxed funds is assumed to be 100. Then the following equation must hold:

(6.3) $I = d_d * (I - t_m * I) + d_d * D_f$

subject to

(6.4) $I + D_f = 100$

where I = fiscal period pre-tax income and
D_f = dividends distributed from untaxed funds.

Solving for I gives:

(6.5) $$I = \frac{d_d}{1 + d_d * t_m} * 100$$

and dividends distributed from untaxed funds are $D_f = 100 - I$.

Corporate taxation	Dividend deduction system tax rate 50 %[1]						"AF" tax rate 50 %	AF tax rate 25 %
Source of distribution	Fiscal period income			In addition from untaxed funds				
Dividend deduction %	40 %	60 %	100 %	40 %	60 %	100 %		
Fiscal period income	100	100	100	37.5	54.5	85.5	100	100
Taxable income in municipal taxation	100	100	100	37.5	54.5	85.5		
Taxable income in state taxation	77.0	62.6	25.4	0	0	0	100	100
- Dividend deduction in state taxation	-23.0	-37.4	-74.6	-37.5	-54.5	-85.5		
A. Total taxes	42.4	37.7	25.4	6.4	9.3	14.5	50	25
Dividend from fiscal period income	57.6	62.3	74.6	31.1	45.2	70.9	50	75
Dividends from untaxed funds				62.5	45.6	14.6		

[1] State tax 33 % and municipal tax 17 %

Table 6.1 Dividend Distributing Company.

Corporate taxes on distributed profits were lower when the source of distribution was untaxed funds instead of fiscal period profit. It can also be seen that the lower the dividend distribution percentage was, the higher the amount of dividends from untaxed funds should be to eliminate the state taxes.

The mere shift to the imputation system considerably increased the taxburden of distributed profits at the company level. The cutting of the tax

rate to 25 per cent eased the taxburden, if only fiscal period profit is taken into account. The easing was very slight if the profits were distributed to new share capital. When untaxed funds were taken into account, the situation was the opposite and the taxburden increased considerably. In the former case the effective tax rates fell from 25.4 - 42.4 to 25. In the latter the effective tax rates rose from 6.4 -14.5 to 25. These cases represent the two extremes. The latter alternative, however, nearly corresponds to the average effective tax rates of the large industrial companies in VATT's panel data. Also according to calculation made by YRI-microsimulation model the corporate taxburden increased in the new imputation system compared with the old dividend deduction system. Thus the alternative including untaxed funds is more realistic than the one with dividends distributed from taxed profits only.

6.2 *Natural Person*

In the imputation system the gross dividend is taxed at the tax rate of the dividend recipient. The company pays tax on the distributed dividends according to the corporate tax rate. This tax is credited in the taxation of the dividend recipient. Since the tax rate facing the dividend-paying listed company and its dividend recipient are the same after the 1993 capital tax reforms, the shareholder does not have to pay additional tax on the dividend received (table 6.2) In the new system 25 per cent capital income tax is applied.

In the old system the natural persons as dividend recipients paid tax according to their own marginal tax rate[1]. Here we apply a rate of 65 per cent. All of the dividend income is assumed to be capital income in the new system.

The interest expenses of the dividend recipient ease taxation further. In the example interest is supposed to be of the same magnitude as dividend income. As a result the dividend recipient had no taxable income in the old system and receives an imputation credit equivalent to the corporate tax in the new system.

From the standpoint of a natural person, the change in the tax system without cutting the tax rate made investing in shares more attractive than before, since the net dividend doubled even without the interest deduction. After lowering the tax rate the net dividends almost tripled when received without the interest deduction. If the shareholder's interest deductions are equal to taxable income, the imputation credit is refunded to the shareholder. Changes occur also when a small investor had no interest deductions and his dividend income was tax exempt because of the capital income deduction. In this case small investors received more than previously net dividends paid on old share capital while net dividends paid on new share capital remained unchanged.

[1] If the dividends could be included in the capital income deduction, the shareholder was not taxed at all on the dividend income.

Corporate taxation	Dividend deduction system tax rate 50 %[1]						"AF" tax rate 50 %	AF tax rate 50 %
Source of distribution	Fiscal period income			In addition from untaxed funds				
Dividend deduction %	40 %	60 %	100 %	40 %	60 %	100 %		
A. Total taxes	42.4	37.7	25.4	6.4	9.3	14.5	50	25
Taxation of dividend recipient	tax rate 65 %							
Dividend received	57.6	62.3	74.6	93.6	90.8	85.5	50	75
+ Imputation credit							50	25
Taxable income	57.6	62.3	74.6	93.6	90.8	85.5	100	100
Taxes -no inter.[2]	37.4	40.5	48.5	60.9	59.0	55.6	50	25
-interest	0	0	0	0	0	0	0	0
-Imputation credit							-50	-25
B. Final tax (+) / Tax return (-) - no inter.	37.4	40.5	48.5	60.9	59.0	55.6	0	0
- interest	0	0	0	0	0	0	-50	-25
Net dividend - no inter.	20.2	21.8	26.1	32.8	31.8	29.9	50	75
- interest	57.6	62.3	74.6	93.6	90.8	85.5	100	100
A + B Total taxes (corporate + dividend recipient) - no int.	79.8	78.2	73.9	67.2	68.3	70.1	50	25
- interest	42.4	37.7	25.4	6.4	9.3	14.5	0	0

[1] State tax 33% and municipal tax 17%

[2] The calculations are presented separately without and with the interest deduction covering all taxable income.

Table 6.2 Domestic Natural Person as Dividend Recipient.

The overall tax burden of profit distribution was halved by the shift of the tax regime. Interest expenses are of greater significance in the new system since interest can be deducted without limit, albeit at a lower tax rate than in the old system.

In the old system the possibility to distribute profits from the untaxed funds curtailed the difference in the overall tax burden mentioned above. This was especially emphasised in the case where the interest deduction was taken into consideration. In table 6.2 it can be seen that the overall tax rate of dividends paid on old share capital has fallen from 79.8 - 78.2 per cent to 67.2 - 68.3 per cent depending on the dividend deduction. Respectively the fall in the case of the new share capital was from 73.9 to 70.1 per cent. The interest deduction increased the difference: the overall tax burden on old share capital decreased from 37.7 - 42.4 to 6.4 - 9.3 and on new share capital from 25.4 to 14.5 per cent.

The easing of the overall tax burden is mainly due to the dividends distributed from untaxed funds but also the fact that the company could avoid the state tax totally had a considerable effect on this.

6.3 *Limited Company*

A limited company receiving a dividend could avoid taxes entirely if it did not distribute dividends further. This was due to the prohibition of so-called chain taxation, according to which the dividends received by one domestic limited company from another limited company were tax exempt. The end result was the institutionalisation of equity investment; companies owned more and more of each other and private persons were crowded out of the stock market.

In the new system a dividend distributing company pays the corporate tax and as a dividend recipient can benefit from the imputation credit to an extent corresponding with the tax liability of the company in the tax year. The remainder of the credit must be deducted from the company's income taxes over the next ten-year period. The previously tax exempt dividends are now liable for taxation once.

		Dividend deduction system		"AF "		AF
Corporate taxation		**tax rate 50 %[1]**		**tax rate 50 %**		**tax rate 25 %**
Dividend deduction %		100 %				
Source of distribution (p and f)[2]						
A. Total taxes	p	25.4		50		25
	f	14.5				
Taxation of dividend recipient		**tax rate 50 %**	**profitable tax rate 50 %**	**unprofitable tax rate 0 %**	**profitable tax rate 25 %**	**unprofitable tax rate 0 %**
Dividend received	p	74.6	50	50	75	75
	f	85.5				
+ Imputaion credit			50	50	25	25
Taxable income[3]		0	100	0	100	0
Tax		0	50	50	25	25
- Imputation credit			-50		-25	
- Credit to be used in next ten years				-50		-25
B. Total final tax		0	0	0	0	0
Net dividend	p	74.6	50	50	75	75
	f	85.5				
A + B Total taxes (corporate + dividend recipient)	p	25.4	50	50	25	25
	f	14.5				

[1] State tax 33 % and municipal tax 17 %
[2] p = fiscal period profit, f = untaxed funds
[3] In the old system tax exempt.

Table 6.3. Domestic Limited Company as Dividend Recipient.

In table 6.3 an unprofitable company receiving dividends, which pays no tax, cannot use the imputation credit in the tax year in question. Since it nevertheless has a possibility to benefit from the unused credit later, the overall tax burden on dividends is the same (disregarding interest factors) as for a profitable company receiving dividends, i.e. the taxes paid once by the dividend distributing company. This is because the taxable income of the recipient company consisting of the net dividend and the imputation credit reduces the losses accrued by the company. Thus the dividend and the related imputation credit are eventually taxed indirectly since the loss balancing in the next profitable fiscal period decreases and the imputation credit carried over from unprofitable years is deducted from taxes in profitable years.

The following example depicts a situation where an unprofitable company cannot use the credit on dividends received immediately, but it can still benefit from the credit in later years. The company incurs only the interest losses related to the decline in the present value of the credit.

Example

	YEAR 1	YEAR 2
Operating profit	50	250
Dividend received	75	-
Imputation credit	25	-
-Other expenses	-200	-100
Income for fiscal period	-50	150
Income after loss balancing	-	100
Tax 25 %	0	25
Unused imputation credit	25	0
Use of imputation credit	0	25
Final tax	0	0

The connection between the imputation tax credit and the loss balancing has been ensured by limiting their use to equivalent ten-year periods. This is intended to safeguard the single taxation of dividends in all cases.

In the old system dividends distributed on new share capital from one limited company to another were subject to a 25.4 per cent tax. Merely changing systems while keeping the tax rate at 50 per cent would have doubled the tax on dividends distributed between companies. The lowering of the tax rate in the new system to 25 per cent kept the situation with respect to new share capital unchanged. The overall tax burden is the same as that of the dividend distributing company because of the tax exemption of dividends received by a domestic company.

The total tax burden on dividends distributed to old share capital fell in the new tax system from 37.7 - 42.2 per cent to 25 per cent depending on the size of the dividend deduction. When taking into consideration the additional

distribution from untaxed funds in the old system, there is a remarkable increase in the overall tax burden of dividends. The overall tax burden rose from 6.4 - 9.4 (old share capital) and from 14.5 (new share capital) to 25 per cent. (See also table 6.1 row A. Total taxes).

6.4 *Non-profit Institution*

The dividends received by non-profit institutions were tax exempt in the old system. The dividend deduction eased the tax burden on the dividend distributing company. In the new system the dividend distributing company pays tax on the gross dividends at the corporate tax rate. Since in the old system the dividends paid to old share capital were more heavily taxed than in the new system, the foundations could receive more dividends. On the other hand, the tax burden of dividends paid to new share capital remained at the previous level.

If the dividends paid from untaxed funds are taken into consideration, also the foundations' overall tax burden became heavier compared to the old system. The same results apply also to a domestic limited company as a dividend recipient. The dividends distributed were undertaxed.

		Dividend deduction system			"AF"	AF
Corporate taxation			**tax rate 50 %[1]**		**tax rate 50 %**	**tax rate 25 %**
Dividend deduction %		40 %	60 %	100 %		
Source of distribution (p and f)[2]						
A. Total taxes	p	42.4	37.7	25.4	50	25
	f	6.4	9.3	14.5		
Taxation of dividend recipient			**tax exempt**		**tax rate 50 %**	**tax rate 25 %**
Dividend received	p	57.6	62.3	74.6	50	75
	f	93.6	60.8	85.5		
+ Imputation credit					-	-
Taxable income	p	57.6	62.3	74.6	50	75
	f	93.6	60.8	85.5		
Tax		-	-	-	-	-
- Imputation credit					-	-
B. Total final tax		0	0	0	0	0
Net dividend	p	57.6	62.3	74.6	50	75
	f	93.6	60.8	85.5		
A + B Total taxes (corporate + dividend recipient)	p	42.4	37.7	25.4	50	25
	f	6.4	9.3	14.5		

[1] State tax 33 % and municipal tax 17 %
[2] p = fiscal period profit, f = untaxed funds

Table 6.4 Domestic Foundation as Dividend Recipient.

6.5 *Dividends Paid Abroad*

In the old system the right of a dividend-distributing Finnish limited company to take a dividend deduction was not affected by whether the dividend recipient was liable for taxation at home or abroad. In both the old and new systems dividends paid abroad are subject to a 25 per cent withholding tax in Finland, but tax agreements limit the tax rate on dividends paid on portfolio investments ordinarily to 15 per cent.

		Dividend deduction system	"AF"	AF
Corporate taxation		tax rate 50 %[1]	tax rate 50 %	tax rate 25 %
Dividend deduction %		100 %		
Source of distribution (p and f)[2]				
A. Total taxes	p	25.4	50	25
	f	14.5		
Taxation of dividend recipient		withholding tax 15% (pi)[3] /0 % (di)	withholding tax 15% (pi) /0 % (di)	withholding tax 15% (pi) /0% (di)
Dividend received	p	74.6	50	75
	f	85.5		
+ Inputation credit			-	-
Taxable income	p	74.6	50	75
	f	85.5		
Withholding tax[4]	p	11.2 / 0	7.5 / 0	11.3 / 0
	f	12.8 / 0		
- Corporate tax credit (new)			-	-
B. Total final tax	p	11.2 / 0	7.5 / 0	11.3 / 0
	f	12.8 / 0		
Net dividend	p	63.4 / 74.6	42.5 / 50	63.7 / 75
	f	72.7 / 85.5		
A + B Total taxes (corporate + dividend recipient)	p	36.6 (pi) / 25.4 (di)	57.5 (pi) / 50 (di)	36.3 (pi) / 25 (di)
	f	27.3 (pi) / 14.5 (di)		

[1] State tax 33 % and municipal tax 17 %
[2] p = fiscal period profit, f = untaxed funds
[3] pi = portfolio investment, di = direct investment
[4] Ordinarily credited in state-of-residence taxation

Table 6.5. Foreign Portfolio or Direct Investor as Dividend Recipient.

In the tax agreements Finland has furthermore adopted a policy whereby dividends on direct investment are not subject to withholding tax. This applies also to EU countries from the beginning of 1995. Since a dividend-paying company was allowed in the old system to take full deductions in state taxation on dividends distributed to new share capital and the withholding tax was low or zero, then the dividends paid abroad were clearly undertaxed.

In the new system the imputation credit eliminates the double taxation of dividends with respect to the taxation of dividend recipients, but the credit is not ordinarily granted to foreign shareholders. Thus dividends paid abroad are subject to tax both in the taxation of the dividend-distributing company and possibly in the withholding taxation. In the new system the total tax burden of dividends paid to new share capital from both portfolio and direct investments remained almost unchanged compared to the previous system. On the other hand, the total tax burden of dividends paid to old share capital was eased. The total tax burden of dividends on portfolio investments decreased from 47-51 to 36.3 per cent depending on the dividend deduction. Respectively that on direct investment declined from 37.7-42.4 to 25 per cent.

When taking into account the distribution from non-taxed funds we can come to the opposite conclusion. The overall tax burden of portfolio investment was then between 20-27 per cent depending on the dividend deduction. In direct investment the overall tax burden was even lower than that, 6-14 per cent.

Foreign portfolio investors do not ordinarily seek dividends but rather the rise in the share's value. In line with international practice Finland does not tax the capital gains of foreign investors trading in Finnish stocks. This holds also for tax havens with which we have no tax agreements. The concealment of capital gains at home puts this capital income completely outside the realm of taxation. Careful tax planning can be used to avoid the taxation of dividends as well in the state of residence.

6.6 *Tax Reform Changes between Dividend Recipients*

In the old system the distribution of profit was tax exempt in state taxation or lightly taxed, nor did all dividend recipients pay tax on their dividend income. In practice dividends were not taxed twice. Slightly over half of the dividends paid in Finland were tax exempt or taxed at the low withholding taxrate. Under the dividend deduction system the dividends received by foreign investors were at the company level in the same position as the dividends of domestic investors: the one hundred per cent dividend distribution deduction eliminated the state tax at the company level and only the dividend yields of old share capital were subject to tax (before 1989 the deduction rate was 60 per cent and in 1989 it was 40 per cent in state taxation). Since the withholding tax rates were and still are low or zero, in practice Finland followed the residence principle in taxation of foreigners. Dividends were taxed in the country of residence if the investors reported their income to their own tax officials.

Table 6.6 provides an overview of the total tax burden for dividends by type of dividend recipient on the basis of the calculations of the example above. From the table it can be seen that when dividends were distributed

from fiscal period profit only, merely shifting from the dividend deduction system to the imputation system would have raised the total tax burden for dividends received by all shareholder groups. Only the taxation of dividends received by private individuals would have eased.

The shift to the imputation system and lowering of the tax rate to 25 per cent eased the total tax burden for dividends of private individuals appreciably. The significance of private individuals' interest expenses was emphasised in the reform. In the case of dividends paid on new share capital, the tax reform had practically no effect on the total tax burden for dividends of other dividend recipient groups. On the other hand, the total tax burden for dividends paid to old share capital was eased in all dividend recipient groups.

If the distribution from non-taxed funds is taken into consideration the picture is notably different. The overall tax burden increased for all dividend recipients except natural persons who has not enough deductible interest expenses or whose dividend income exceeded the capital income deduction.

Dividend recipient	Dividend deduction system: Distribution from fiscal period's profit/ nontaxed funds tax rate 50 %[1]						"AF" tax rate 50 %	AF tax rate 25 %
Dividend deduction %	40 %		60 %		100 %			
Source of distribution[1]	p	f	p	f	p	f		
Domestic natural person:								
- no interest expenses	79.8	67.2	78.2	68.3	73.9	70.1	50	25
- deductible interest expenses = dividend	42.4	6.4	37.7	9.3	25.4	14.5	0	0
- small investor whose dividend income previously tax exempt	42.4	6.4	37.7	9.3	25.4	14.5	50	25
Domestic limited company	42.4	6.4	37.7	9.3	25.4	14.5	50	25
Domestic foundation	42.4	6.4	37.7	9.3	25.4	14.5	50	25
Foreign investor:								
- portfolio investment	49.0	20.4	47.1	22.9	36.6	27.4	57.5	36.3
- direct investment	42.4	6.4	37.7	9.3	25.4	14.5	50	25

[1] p = fiscal period profit, f = untaxed funds

Table 6.6 Total Tax Rate for Dividends In Different Tax Systems by Dividend Recipient.

Different dividend recipients were in the equal position after the tax reform, except for foreign portfolio investors, whose total tax rate is over 10 percentage points higher than in other groups.

Dividend recipient	Change in imputation system compared to dividend deduction system %					
Dividend deduction %	40 %		60 %		100 %	
Source of distribution (profits or untaxed funds)	p	f	p	f	p	f
Domestic natural person						
- no interest expenses	+271	+129	+244	+136	+187	+150
- deductible interest expenses = dividend	+74	+6	+60	+10	+34	+17
- small investor whose dividend income previously tax exempt	+30	-20	+20	-17	+1	-12
Domestic limited company	+30	-20	+20	-17	+1	-12
Domestic foundation	+30	-20	+20	-17	+1	-12
Foreign investor:						
- portfolio investment	+30	-20	+20	-17	+1	-12
- direct investment	+30	-20	+20	-17	+1	-12

Table 6.7 Change in Net Dividends of Various Dividend Recipients after Shifting from Dividend Deduction System to 1993 Imputation System.

From table 6.7 it can be seen that in the new system a company can pay considerably more dividends out of the same income than before if the dividends were distributed from the fiscal period profit. In the case of a new share capital, more dividends can be paid only to natural persons. On the other hand, when comparing the dividends paid in the various systems to old share capital, all shareholder groups would benefit from the reform.

This result must be considered as the maximum benefit from the new tax regime. Taking into consideration the untaxed funds as a source of dividend distribution the company's ability to pay dividends has become worse, as can be seen from the table 6.7.

Only the households with high income would have benefited from the new tax system.

The possibilities to pay dividends from untaxed funds had a considerable lowering effect on the overall tax burden of distributed profits. For example, the provisions exempting capital gains from tax have been abolished in the tax reform. It has not been possible to study the true structural change in the taxation of various dividend recipients. Without doubt the tax reform tightened corporate taxation and in many cases even the overall tax burden of dividends.

6.7 *Dividends Paid and Received by Sector*

Table 6.8 and 6.9 presents National Accounts figures on the dividends paid and received for 1986-1994. The figures depict the dividends actually paid and received in the year in question. The figures can be interpreted as representing the dividend that was declared on the basis of the previous year's earnings.

Dividends paid (FIM MILL.)									
	1986	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**
Enterprises	3230	3827	5434	6996	8192	8536	6065	5750	6930
Financial institutions	870	1157	1326	1591	1613	965	381	222	360
Social security funds	0	0	0	2	4	7	6	1	4
Nonprofit institutions	13	11	16	17	19	24	18	0	0
Domestic sectors total	**4113**	**4995**	**6776**	**8606**	**9828**	**9532**	**6470**	**5973**	**7294**
Rest of world	119	136	263	661	480	768	1236	1851	3004
Total	**4232**	**5131**	**7039**	**9267**	**10308**	**10300**	**7706**	**7824**	**10298**
Distribution %									
	1986	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**
Enterprises	76.3	74.6	77.2	75.5	79.5	82.8	78.7	73.5	67.3
Financial institutions	20.6	22.5	18.9	17.2	15.6	9.4	4.9	2.8	3.5
Social security funds	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Nonprofit institutions	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.0
Rest of world	2.8	2.7	3.7	7.1	4.7	7.5	16.1	23.7	29.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 6.8 Dividends Paid by Sector in 1986-1994 (Source: Statistics Finland, National Accounts).

From table 6.8 it can be seen that the dividends paid by all domestic sectors plunged in 1992 after a prolonged upward trend. This was caused naturally by the economy going into a recession. It is noteworthy that foreign dividends have grown steadily (except for 1990). This is explained by the strong growth in the 1980s of Finland's direct investments abroad as well as the increased portfolio investments after the deregulation of the capital markets.

An especially steep rise occurred in 1992 in the shares of foreign dividends, which rose from 7.5 per cent to 16.1 percent with dividends growing in nominal terms by 1.6 fold. The tax treatment of foreign dividends has been eased further since 1993 by including the taxes paid abroad on dividends to the comparison tax which is used in assessment of the compensatory tax. In addition, as the corporate and capital income tax rates were both lowered to 25 per cent in 1993, over 60 per cent more dividends were repatriated from abroad in 1994.

Of all dividends received the share of foreign investors, on the other hand, has come down until 1994. The collapse in the returns on direct investment made to Finland does not explain the drop in the dividend income of foreigners since the returns follow the same general trends as for Finland's

7

SOURCES OF FINANCE AND TAXATION

The efficient allocation of capital requires that capital be directed to projects which yield the highest returns. The liberalisation of capital movements served to hasten the tax reforms that changed the mutual attractiveness of sources of financing for investment. This chapter evaluates the neutrality of various sources of finance in the dividend deduction system and in the imputation system.

A limited company can finance its investments with new share issues, retained earnings or by debt. When analysing the overall effects of the tax system, in addition to sources of financing the use of profits must also be evaluated. The company can distribute the return on investment as dividends or use them to interest payments. It can also retain its profits in the company, so that the net worth of the company grows, the value of shares rises and the shareholders obtain capital gains. In addition to retained earnings the rise in stock prices are the consequence of the markets' positive expectations about the situation of either the individual company or the entire economy.

When considering the sources of financing for investment and distribution of profits there are, in principle, nine alternatives. Since interest rates are included in the distribution of profits when the source of financing is debt, the alternatives shrink to five. The various alternatives are depicted in table 7.1.

Source of Finance	Use of profits		
	Dividends	Interest	Capital gains
New share issues	x	-	x
Retained earnings	x	-	x
Debt	-	x	-

Table 7.1 Alternative Sources of Finance and Use of Profits.

Capital income tax system can be regarded as neutral with respect to the financing decisions of the company if the pre-tax return gained from the company provides the same after-tax return to the final investor of the capital, regardless of whether the yield comes as a dividend, interest income or capital gain.

7.1 Political Miller equilibrium

A key problem in the taxation of capital income and corporate taxation is financing distortions: Does taxation favour or discriminate certain sources of financing for investment? This has been debated in connection with the tax reform since, for instance, it is easier for politicians and interest groups to

seize upon distortions in financing than those in the real economy. This has been propagated by companies of different size and different stages of development calling for the same tax treatment. After the tax reform the economy has sought a new equilibrium in financial neutrality, which is called the political Miller equilibrium. When analysing the political Miller equilibrium, in the dividend deduction system as well as the imputation system the theoretical tax literature uses the terms "old", "new" and "optimistic" views, which are used to describe the connections between double taxation and sources of finance for investment [1]. The prime interest is upon how the tax burden affects marginal investments.

The expected returns of marginal investments must be considered in juxtaposition to the consequent costs. If all investment projects are ranked according to their net yields, the marginal investment determines how high the investment volume of the company will be. Evidently, changes in the taxation of capital income that raise the net present value of marginal investment and lower its finance costs boost the investment volume of the company and vice versa.

According to the "old" view the typical form of finance for a marginal investment is the issue of new equity. The view emphasises the adverse effects of double taxation on marginal investment financed via new share issues. It is precisely these investment projects that the tax burden is concentrated upon, thereby spurring excessive capital costs in market rates of interest.

The "new" view does not deny that the double taxation of dividends raises the pre-tax required return on investment financed via share issues. The typical form of financing marginal investment should nevertheless be retained profits, and only their taxation would be significant. If this tax burden were lighter than that for dividend distribution, companies should retain all earnings for which they can find attractive investments and pay out the rest as dividends. According to this view the distribution of dividends by a company does not have signalling value as regards its situation and goals.

The taxation of dividends would not affect the yield on investments financed from retained earnings, but the taxation of the company combined with the taxation of a rise in the value of the shares (due to earnings retained in the company) would place a strain on investment. For this reason the proponents of the new view maintain that, instead of the double taxation of dividends, it would be worthwhile to evaluate the double taxation stemming from the combined effects of the corporation tax and capital gains tax.

The optimistic view of a company's investment behaviour is related to the financing of marginal investments with debt, the interest expenses of which are tax deductible. The investment criteria is the market rate of interest. The corporate tax, dividend tax or taxation of capital gains are not of significance when calculating the financing costs of marginal investments.

[1] Sinn (1990b) and Zodrow (1991)

All of the above-mentioned views - old, new and optimistic - are in principle "correct". The differences are due to different assumptions about the sources the companies are presumed to use in the financing of marginal investments. The choice of the form of finance depends to a large extent upon the external environment in which the companies operate.

Finland's political Miller equilibrium before the imputation system and capital income tax reform was gauged to regulated markets. The liberalisation of capital movements has changed our tax system and the political Miller equilibrium of investment financing, but has the taxation of the various sources of investment finance become uniform? The investigation of this question starts from a closed economy, which is adapted to apply also to a small open economy. Thus the level of interest rates is presumed to be determined on international capital markets and interest income is taxed according to the residence principle. The investment wedge of the company is thus the same as in the closed economy. The analysis is kept simple by presuming that companies operating at home are controlled by domestic investors, while foreign direct investment are disregarded.

7.2 *Measurement of Capital Costs*

The "old", "new" and "optimistic" views differ in how the tax burden is reflected in required return on marginal investment financed via share capital, debt and retained earnings. The answers offered can be applied to the analysis of both closed and small open economies. In the latter the level of interest rates is determined on international capital markets, upon which the small open economy has a negligible effect.

7.2.1 *Equity Finance*

With equity finance shareholders inject an additional markka into the company by purchasing newly issued shares and compare the returns in the form of dividends with the returns they could have received by investing their money in riskless bonds.

Let p be the annual dividend from an investment of one markka and i the interest rate of bonds. Then the shareholders would be willing to inject funds into their firm until:

(7.1) $p = i$

if there were no taxes.

The situation changes when capital income is taxed. Let us investigate the tax burden on marginal investments financed via new share issue. Assume that the distributed profits are subject to both the corporate tax rate t_d and the personal income tax rate of t_{dp} so that dividend income is taxed twice.

The after-tax income from dividends is p $(1-t_d)$ $(1-t_{dp})$, the opportunity cost of which is the after-tax interest i $(1-t_i)$ obtained on government bonds or riskless bank deposits, where t_i is the tax rate in interest income. In order for equity finance to be worthwhile, the dividend income must exceed that of interest income. At the margin the required returns are equivalent:

$$(7.2) \quad p(1-t_d)(1-t_{dp}) = i(1-t_i)$$

and solving for the pre-tax required return p:

$$(7.3) \quad p = \frac{i(1-t_i)}{(1-t_d)(1-t_{dp})}$$

p = required return
i = market rate of interest
t_d = corporate tax rate on dividends distributed on new shares
t_{dp} = marginal tax rate in income taxation / tax rate in capital taxation (dividends)
t_i = tax rate on interest income

Equity finance and debt are in the same position as sources of finance for the marginal investment when interest income and dividend income are taxed equally:

$$(7.3b) \quad \frac{i(1-t_i)}{(1-t_d)(1-t_{dp})} = 1$$

In the case of a small open economy the interest rate i in equation (7.3) is determined on international capital markets. The tax wedge for company's investment [2] is obtained by subtracting the interest factor i from both sides of equation (7.3) and simplifying:

$$(7.4) \quad p - i = \frac{i[(1-t_i)-(1-t_d)(1-t_{dp})]}{(1-t_d)(1-t_{dp})}$$

$$= \frac{i[\,t_d + t_{dp}(1-t_{dp}) - t_i]}{(1-t_d)(1-t_{dp})}$$

When p - i = 0, i.e. the annual dividend from an investment of one markka is the same as the market rate of interest, taxation does not distort the relation between equity and debt financing. The equation can be simplified by

[2] The tax wedge is the difference between the pre-tax required rate of return on investment and the net compensation of the financier. This is treated in more detail in the next section.

determining whether the term inside the brackets in the numerator $t_d + t_{dp}(1 - t_{dp}) - t_i$ differs from zero or not. The shareholder compares in this way the taxation of dividend income with that of interest income. If the tax burden of dividends is higher than for interest, a higher return is required on equity finance than debt financing. In this case the tax treatment of the sources of finance is not neutral, since taxation favours debt financing.

The difference between equations (7.3) and (7.4) is that in the former the financing neutrality is investigated as a ratio and in a closed economy while in the latter it is a level in an open economy. The evaluation proceeds so that the conclusions of equation (7.3) holds also in small open economy that applies the residence principle. By choosing the relevant values of the parameters, equation (7.3) can be applied to both the dividend deduction and imputation systems.

7.2.2 Debt Financing

For a debt financed investment project the dividend net of interest payments and net of dividend taxes is $(p - i)(1 - t_d)(1 - t_{dp})$. A sufficient condition for carrying out an investment is thus that the return on investment corresponds to the interest expenses. The cost of capital and the criteria for marginal investment is equal to the market rate of interest. At the margin there is no room for dividend distribution. Returns on intramarginal investments distributed as dividends indeed decrease because of taxation, but taxation does not make the returns negative. The marginal investment criteria remains valid.

According to the optimistic view corporate taxation would not affect the realisation of marginal investments. When the yield on marginal investment is the same as interest expenses and no taxable income is generated, the legal status of the dividend recipient is not of significance for the return on investment. The legal status of the dividend recipient would be emphasised in intramarginal investments generating "excess" profits subject to double taxation.

If debt financing is the typical form of finance for marginal investments and depreciation is implemented according to the true economic depreciation, taxation does not affect investment decisions. The widely used accelerated depreciation methods nevertheless raise the profitability of debt financed investment by increasing the implicit value of the tax subsidies derived from accelerated depreciation. Under conditions of a high tax rate, debt can even be a lucrative way of financing a company's investment [3]. Excessive use of debt as a source of finance for investment nevertheless leads to too high leverage and the reduction in the risk bearing ability of the company. Also the risk of exposure to cyclical fluctuations increases owing to the lack of equity.

[3] OECD (1991)

7.2.3 *Retained Earnings*

When marginal investments are financed with retained earnings, the equation for the cost of capital becomes slightly more complicated than in the case where debt or new share issues are the sources of finance.

A firm may decide to increase retained profits at the expense of its dividend payment in order to finance additional investment. From the standpoint of the shareholder this policy is worthwhile if the investment generates a future dividend flow that exceeds the interest income to be earned from receiving the withheld dividends and investing them in bonds. The minimum pre-tax rate of return necessary to satisfy the shareholder is the cost of capital to the firm.

When calculating the cost of capital it is important to realise that when a company retains more profits, its net worth increases. This raises the market value of the company's shares. When shareholders sell their shares the resulting capital gain is subject to tax, and simultaneously retained earnings are taxed twice. This situation can be illustrated by assuming that the shareholder gives up one markka of profits. The money is retained in the company so that stock prices rise, generating capital gains. The shareholder is satisfied if the net dividend forgone is compensated by net capital gains of equal magnitude. The shareholder's markka retained in the company is broken down into the capital gains tax to be paid and net-of-tax dividends foregone. If all market participants estimate the sum of these two components to add up to one markka, this renunciation will increase the market value of shares by precisely one markka.

An equilibrium equation can be derived setting retained earnings and the consequent rise in the value of a stock equal to the opportunity cost, i.e. the yield on government bonds or bank deposits as follows[4]:

$$(7.5) \quad p\,(1 - t_r)\,(1 - t_c) = i\,(1 - t_i),$$

and solving the equation for the yield p gives:

$$(7.6) \quad p = i\,\frac{1 - t_i}{(1 - t_c)(1 - t_r)}$$

p = required rate of return
i = market rate of interest
t_i = tax rate on interest income
t_r = effective tax rate on retained earnings
t_c = tax rate on capital gains

[4] Sinn (1990b)

The investment wedge in a small open economy is:

$$(7.7) \quad p - i = \frac{i[(1 - t_i) - (1 - t_c)(1 - t_r)]}{(1 - t_c)(1 - t_r)} = \frac{i[t_r + t_c(1 - t_r) - t_i]}{(1 - t_c)(1 - t_r)}$$

Equation (7.6) defines the tax wedge for investment in the closed economy and (7.7) for the small open economy. Neutrality is investigated once again with respect to international interest rates. Equation (7.6) can be used to describe both the dividend deduction and the imputation system given appropriate parameters.

From equation (7.6) it can be seen that taxation of dividends would not be of significance in financing marginal investments with retained earnings. The lack of a dividend parameter can be explained by the fact that the tax system subsidises the company by the amount equivalent to the tax which would have been levied on dividends if they had been distributed. The tax system takes its share from the growing capital when the retained earnings are actually distributed. This is the time when the return derived from retained earnings is taxed. The government obtains a return on its tax loan with a method that resembles saving by a shareholder.

The dividend tax is considered a cash flow tax. The company invests the unpaid dividend tax. This is reflected as a dividend flow derived from the return on investments. The net worth of the company rises and for this reason the rise in the value of the stock is realised as capital gains of the shareholders. From the standpoint of a single shareholder, the government acts like another shareholder who claims a share of distributed dividends, but does not exert influence as an owner.

According to the new view the tax parameters on the right-hand side of equation (7.6) do not affect the return on marginal investment but rather funds invested. The shareholder invests the forgone net dividend while government invests the forgone tax on these dividends. This interpretation is at the core of the new view.

7.3 *Application to Finland's Old and New Tax System*

The total tax burden of dividends was compared for different dividend recipients in Finland's old and new tax system in chapter 6. The required returns on marginal investment can also be evaluated according to the legal status of the shareholder. We compare the old (dividend deduction) and new (imputation) system assuming that all dividends are paid out of fiscal period income and not from non-taxed funds. The reason for this is that throughout this chapter we focus on the return on the investments financed with equity, retained earnings or debt.

7.3.1 New Share Issues as Source of Finance

In Finland's old tax system a one hundred percent dividend deduction was granted only in state taxation[5] to dividends distributed on new equity. When the dividends of new equity were distributed from fiscal period income, they were subject to an average tax burden of 25.4 per cent (see chapter 6). A limited company receiving dividends did not pay tax on its dividends[6] and non-profit institutions were not subject to dividend taxation at all. If the dividend income of a natural person qualified completely for the capital income deduction, it was tax exempt. In these cases the dividend was taxed only in the taxation of the dividend distributing company ($t_{dp} = 0$ and $t_d = 0.254$).[7] The interest income of private individuals was tax free in Finland's old system.

The significance of new equity was nevertheless minimal compared to other sources of finance. This was caused primarily by the fact that the dividends of natural persons were typically taxed twice (in this case those paid on new equity) in line with the joint impact of the effective corporate tax rate ($t_{dp} = 0.254$) and the marginal tax rate of personal income taxation ($t_d = 0.65$). The top marginal tax rate applies to shareholders with high income, typical of shareholders who make effective use of their voting rights. For example, in 1992 about 50 per cent of the dividends was received by natural persons in the highest income bracket (taxable income at least FIM 275 thousand), whose share of all dividend recipients was only three per cent.

Parameter	Old system	New system
Market rate of interest (i)	5	6.7
Corporate tax rate on dividends Distributed on new equity (t_d)	0.254	0.25
Dividend recipient's tax rate (t_{dp})		
- domestic investor	0 or 0.65	0
- foreign investor	0 or 0.15	0 or 0.15
Interest income tax rate (t_i)		
- domestic limited company	0.25	0.25
- domestic natural person	0	0.25
- foreign investor	0	0

Table 7.1 Parameters for Marginal Investment Financed by New Equity in Finland's Old and New Tax System.

[5] According to permanent Finnish tax rules the dividend deduction rate was 40 per cent, which was temporarily changed to 60 per cent. Dividends distributed on new equity were 100 per cent tax deductible in state taxation over the next five years, but not more than 20 per cent of the share capital per annum. Tax exempt domestic dividends and group contributions were subtracted from distributed dividends prior to calculation of the dividend deduction.

[6] The dividends received by one domestic limited company from another domestic limited company were tax exempt) and dividends paid abroad were in line with tax agreements taxed lightly or tax exempt.

[7] The parameter includes the state tax to the extent that a higher income must be shown to pay the municipal tax.

In this income bracket the average dividend income was over ten times greater than for all dividend recipients.

In the old system, assuming a five per cent bond rate, the required return on marginal investment financed with new equity was at its maximum 19.1 per cent in the case of a natural person as shareholder (table 7.2). This was almost four times greater than the required yield on investment financed by debt (5%). At a minimum the required return of a natural person was 6.7 per cent, i.e. only slightly higher than debt-financed investment. This required return also was valid for non-profit institutions as well as for foreign investors, who were exempt from withholding tax. If foreign dividend recipients paid withholding tax on their dividends, the required return on investment was slightly higher than that mentioned above, i.e. 7.9 per cent for a withholding tax rate of 15 per cent.

Required Return on Marginal Investment (p) Financed by		
New Share Issues	Old system	New system
Natural Person		
- old: marginal tax rate on dividends = 65%	19.1	
- old: marginal tax rate on dividends = 0%	6.7	
- new: tax rate on capital income = 25%		6.7
Domestic limited company	5.0	6.7
Domestic non-profit institution	6.7	6.7
Foreign direct investor	6.7	8.9
Debt	5.0	6.7

Table 7.2 *Required Return on Marginal Investments Financed by New Share Issues by Type of Shareholder and Debt in Old and New Finnish Tax System.*

If a company subject to corporate taxation would have invested in interest-bearing instruments instead of shares, the interest income would have been liable to tax (t_i=0.25). For this reason the required return on investments financed with new shares subscribed by a domestic company would have been five per cent, i.e. on par with that of debt-financed investments.

A natural person making effective use of his voting power as an shareholder typically has a high income. The dividends of this type of investor were taxed heavily in Finland's old tax system compared to the interest income from alternative investments as well as other institutional shareholders and foreign portfolio investors. The taxation profile helped to distort the financing neutrality of companies of different age, since the shares of start-up companies were not favoured by institutions operating as large investors. Furthermore, the credit rationing in the financial markets emphasised the central role of the banking sector, from which the large well known companies benefited.

In Finland's new tax system the double taxation of dividends has been eliminated by complete imputation credits[8]. In the new system interest income have become taxable, with the withholding tax being 25 per cent since 1994. In deregulated financial markets interest rates are determined by the equilibrium level in the international capital markets.

In order for the after-tax return on alternative investments to remain at the tax-exempt five per cent rate prevailing under credit rationing, the market rate of interest would have to be raised by about 1.7 percentage points to 6.7 per cent[9]. This level of interest is from the investor's standpoint equivalent with the 5 per cent tax-exempt rate prevailing in regulated financial markets. The required return on marginal investments financed with new equity is the same as the market rate of interest. In other words, the tax system is neutral in this respect and corresponds to the cost of debt financing. This applies to private individuals, domestic limited companies as well as non-profit institutions. The required return on foreign direct investment exempt from the withholding tax rose to 8.9 per cent while the required return on foreign portfolio investment climbed to 10.5 per cent, assuming a withholding tax rate of 15 per cent. The changes stem from the combined effects of the rise in market rates of interest and tax-exempt interest rates. The tax reform tightened the tax burden of foreign stock investors more than other dividend recipients. No stand is taken here regarding the final dividend tax levied in the state of residence or to what extent the taxation of dividends can be avoided with tax planning in the state of residence.

7.3.2 *Retained Earnings as Source of Finance*

In Finland's old tax system the capital gains received by private individuals[10] and companies were tax exempt, if the property was held for a certain minimum period. The capital gains tax rules were slightly tightened in 1986, but only beyond the tax-free limit of FIM 1 million. A major change in the taxation of capital gains was introduced in 1989, when the tax-free limit was brought down to FIM 200,000. Non-profit institutions were not liable to tax from income received from non commercial activities. Interests and capital gains paid abroad were tax exempt. The interest income of single persons were in effect tax-free while that of domestic companies were subject to tax.

[8] According to regulations going into effect on July 1, 1993, a corporation was no longer reimbursed for an imputation credit in cash but rather it could be deducted from corporate tax during the next five years.

[9] $(i+x)(100-t_i)/100=5 \Rightarrow x=1.666$, when $i=5\%$ and $t_i = 25\%$

[10] In Finland's old tax system the capital gains on securities were tax exempt after a five-year ownership period until 1986. At that time the ceiling for the tax exemption after deducting acquisition cost became FIM 1,000,000, amounts exceeding which were liable to a 20 per cent tax. In 1989 the tax exempt ceiling became FIM 200,000 with the taxable part above this of the rate 40 %. The respective figures for 1990 were FIM 210,000/40% and in 1991-92 FIM 220,000/50%. The interest on deposits and bonds were tax exempt until 1991, when the law on use of the withholding tax on interest income went into force. The interest paid abroad was also tax exempt. In line with international practice Finland did not tax foreign portfolio investors for the capital gains obtained from trading in the Finnish stock market.

Parameter	Old system	New system
Effective corporate tax rate on retained earnings (t_r)	0	0.25
Capital gains tax rate		
- domestic investor	0	0.25
- foreign investor	0	0
Interest income tax rate (t_r)		
- domestic company	0.25	0.25
- domestic natural person	0	0.25
- foreign investor	0	0

Table 7.3 *Parameters for Marginal Investments Financed with Retained Earnings in Finland's Old and New Tax System.*

The effective tax rate on retained profits in the 1980s was about 25 per cent on average (chapter 4). By substituting the parameter values in accordance with the old tax system into equation (7.6) and keeping the market rate of interest as the bond rate of 5 per cent, the required return on marginal investments financed with retained earnings is found to be 6.7 per cent (table 7.4). This holds for all types of owners except corporate investors. The required return of domestic limited companies remains at the level of the market interest rate of five per cent. This is due to the fact that the effective tax rate on interest income generated by alternative investments is presumed to be the same as retained earnings while capital gains are estimated to be completely tax exempt.

In the new tax system the corporate tax rate on retained earnings is 25 per cent. The difference between tax and accounting results disappears almost completely. This discrepancy was considerable in the old system owing primarily to the dividend distribution deduction as well as the effects of tax-exempt capital gains. Since in the new system the possibilities to create reserves were in practice eliminated completely, the statutory and effective tax rate are very near to each other.

Required Return on Marginal Investment (p) Financed by		
Retained earnings	**Old system**	**New system**
Natural Person	6.7	8.9
Domestic limited company	5.0	8.9
Domestic non-profit institution	6.7	8.9
Foreign direct investor	6.7	8.9
Foreign portfolio investor (incl. withholding tax)	6.7	8.9
Debt	5.0	6.7

Table 7.4 *Required Return on Marginal Investments Financed with Retained Earnings by Type of Shareholder and Debt in Finland's Old and New Tax System.*

By substituting the above-mentioned values into equation (7.6) we obtain a required return on marginal investments financed by retained earnings of 8.9 per cent for all shareholders (table 7.4). Domestic and foreign investors are not, however, in the same position since the former pay relatively high amount of taxes on interest and capital gains, while for the latter they are tax exempt.

Retained earnings raise the net worth of a company, which is reflected in the value of the shares thereby boosting the potential for capital gains. In this respect domestic investors are subject to double taxation. Foreign investors' profits retained in the company are liable to only single taxation since their capital gains are tax exempt. When dividends are paid out of the retained earnings of previous years, the normal corporate tax has already been paid on them. If the distributed profits exceed the income accrued in the fiscal period (the comparison tax is lower than the minimum tax), the compensatory tax owing to this difference can be offset by tax surpluses. In this case tax surpluses may be regarded as withholding taxes on dividends distributed in subsequent years. If the company accumulates tax surpluses due to cyclical reasons, they can be credited in full when dividends are paid during a slump. The portion of unused tax surpluses accumulated from taxes paid on retained earnings are subject to double taxation [11]. It is thus worthwhile for domestic investors to obtain their return on investment via dividends rather than capital gains.

The value of shares often rises due to reasons other than retained earnings, such as for example, the positive expectations related to the economy, industry or company in question. Domestic capital gains are always liable to tax, even if profits have not been retained. On the other hand, foreign portfolio investors' capital gains, often spurred by cyclical factors, are tax exempt. In both cases the return is not subject to corporate tax. In table 7.4 the required return of 8.9 per cent declined in both cases to 6.7 per cent, i.e. on par with equity finance (table 7.2).

A foreign portfolio investor should nevertheless always take his return on investment preferably as tax-exempt capital gains instead of dividends subject to withholding tax. Since the tax exemption applies also to tax havens, the capital gains on portfolio investment can with careful tax planning avoid tax liability completely.

[11] In Norway it is possible to deduct the rise in the value of stocks due to retained earnings when determining the capital gains tax.

7.4 Neutrality between Equity Finance and Retained Earnings

At the marginal equilibrium in line with Tobin's q theory, the tax neutrality of dividend distribution and retained earnings is compared. At the margin the "irrelevance" result holds according to which the dividend distribution is subject to the same tax burden regardless of whether the dividend is paid now or retained in the company for later distribution [12]. The result is based on the assertion that the shareholder can obtain the forgone net dividend with interest when retained earnings are ultimately distributed as dividends. This presumes that retained earnings are invested at the market rate of interest, which is also distributed as a dividend. On the other hand, if it is decided to distribute the dividend now, the shareholder can invest the net dividend elsewhere and earn the same market rate of interest. Thus retained earnings are, except for capital gains tax, in the same position as new equity from the standpoint of the required return on investment.

7.4.1 Tobin's Neutrality Measure q

In James Tobin's q theory,[13] the q term defines the marginal value of the company's stock over the long run.[14] Tobin proposed that firms base their investment decisions on the following ratio:

$$Tobin's\ q = \frac{Market\ Value\ of\ Installed\ Capital}{Nominal\ Replacement\ Cost\ of\ Installed\ Capital}$$

Tobin's q can be evaluated by comparing the relative returns of equity finance and finance with retained earnings. From equations (7.6) and (7.3) we get:

$$(7.8) \qquad q = \frac{(1 - t_d)(1 - t_{dp})}{(1 - t_r)(1 - t_c)}$$

According to the new view equity finance is not in principle a better way of financing investment than retained earnings. It is the total tax burden that counts. In this connection the denominator is used as a synonym for the net worth of capital[15]. Tobin's q refers to the entire company, but it can be used

[12] Sinn (1987)

[13] Tobin (1969)

[14] In this context the long run refers to a period of time when taxation does not change.

[15] The market value of a company is the number of its shares times the market price. The replacement cost is the cost at which the resources tied up in production can be replaced. The net worth or net assets of a company at a particular point in time is obtained by deducting the liabilities of a company from its assets (at replacement price). A company's yield is the present value of the future stream of net income. When a company's yield exceeds its net worth the difference is estimated to be the company's goodwill. Badwill refers to situations where the yield is less than the net worth. It depicts the loss that accrues when the company is allowed to continue operating in stead of selling its assets.

also as a profitability measure of individual investments. It depends directly upon tax factors and its formal content is obtained as follows[16]: the value of one markka dividend distributed to a shareholder is $(1- t_d)(1- t_{dp})$. The net worth of the company's capital nevertheless rises temporarily if the markka is retained in the company instead of being distributed. This leads to a rise in the market value of the company equivalent to q, i.e. the long-run marginal value of the stock. Thus the marginal investment generates an after-tax capital gain on the shares for the shareholders of $q\ (1 - t_r)(1 - t_c)$. The shareholder is satisfied only when the gains from distributed profits are at least as high as those from undistributed profits, i.e. $(1- t_d)(1- t_{dp}) = q\ (1 - t_r)(1 - t_c)$.

According to Tobin a company can increase the wealth of its shareholders with share issues as long as its market value remains above the replacement cost of its capital, i.e. $q > 1$. New share capital is invested and the investments are presumed to have a diminishing rate of return. The company issues new shares and invests until $q = 1$. When the market value of a company falls below its net worth ($q < 1$), it is not worthwhile for the company to replace worn out capital with new investments. The wealth of the shareholders can nevertheless be increased by selling the assets of the company and buying its own shares for the company.[17] Because equation (7.8) describes the long-run marginal value of the firm's stock, there is no need to consider the cyclical connection between tax surpluses and compensatory tax within the imputation system.

In the following we emphasise the standpoint of the shareholder, who benefits equally from dividends and retentions at the equilibrium ($q = 1$). When the value of q is changed the investor has to decide whether it is worth keeping or selling the shares.

7.4.2 *Effect of Tax Reform on Equilibrium of Tobin's q*

Prior to the switch to the imputation system, the values of the parameters in equation (7.8) were: $t_d = 0.254$, $t_{dp} = 0 - 0.65$, $t_r = 0.25$ and $t_c = 0$, so the value of q was 0.99 when the value of t_{dp} was zero and 0.35 when the value of t_{dp} was 0.65 (table 7.5). As soon as the dividend recipients had to pay tax, from their perspective the market value of the dividend distributing company fell below the replacement cost of its capital. In practice Tobin's q reached its equilibrium when dividend income was tax exempt, which was ordinarily the case. If the dividend recipients had to pay tax on dividend income, it was beneficial for them to receive the return on their investment via capital gains. The withholding tax on foreign portfolio investment brought the value of q below one.

[16] Sinn (1990b)

[17] In Finland the share capital must nevertheless be lowered in this case or the stock must be immediately sold.

After the tax reform the parameters of equation (7.8) took the values: $t_d = 0.25$, $t_{dp} = 0$, $t_r = 0.25$ and $t_c = 0.25$. This applied to all domestic investors. The situation for foreign portfolio investors is different.

In line with international practices Finland does not tax foreign portfolio investors on the capital gains received upon sale of Finnish stocks. This applies also to tax havens with which Finland does not have tax agreements. [18] Since foreign investors are not entitled for imputation credit, the parameters of the new system with a 15 per cent withholding tax rate are as follows: $t_d = 0.25$, $t_{dp} = 0.15$, $t_r = 0.25$ and $t_c = 0$. The value of q obtained from equation (7.8) is less than one and share issues are unattractive.

Dividend recipient	Old tax system	New tax system
Natural person		
- old: marginal tax rate on dividends = 65%	0.35	
- old: marginal tax rate on dividends = 0%	0.99	
- new: tax rate on capital income = 25%		1.33
Domestic limited company	0.99	1.33
Domestic non-profit institution	0.99	1.33
Foreign direct investor	0.99	1.00
Foreign portfolio investor	0.85	0.85

Table 7.5 Tobin's q for Different Types of Dividend Recipients.

According to the value for Tobin's q, new share issues are a sensible way of financing investment in the new system regardless of the domestic shareholder's legal status. From this perspective the tax reform appears to encourage the households to invest in shares compared to the old system, which favoured institutional investors.

The situation is quite different from the viewpoint of foreign portfolio investors, whose q value is below one. In this case Finland's new tax system favours profits via increases in stock prices compared to dividends. As a consequence foreign portfolio investors seek capital gains more often than in the old system, which strengthens the volatility of Finnish stock prices.

In 1993 the turnover on the stock exchange increased sharply and the rise in stock prices prompted many foreign portfolio investors to repatriate the returns on their investments free of tax. This development was angmented by the recovery of the economy and the fact that the tax reform eased the taxation of domestic dividend recipients and the limitations on foreign ownership were abolished.

[18] Vapaavuori (1994)

As a summary it can be confirmed that in Finland's old tax system the tax treatment of investments financed by new equity and retained earnings was uniform when the investor was not a natural person paying tax on dividend income nor a foreign portfolio investor. This indicated that if the company was owned by households, it was not worthwhile to raise funds by issuing shares. The situation also for foreign portfolio investors was weak. In Finland the ownership of stock is indeed institutionalised since the share of dividends received by households has remained at around 20 per cent and the share of foreigners has been modest.

Of the dividends received in Finland in 1994 (distributed on the basis of 1993 earnings) 70 per cent went to institutional investors. The impact of the 1993 capital income tax reform on the natural persons' propensity to invest in the stock market is, however, too early to judge. Anyway new share issues were subscribed so well in 1993 that companies raised FIM 5.1 billion in issue premiums, i.e. more than in the peak of 1989. The share issues in 1994 raised capital of about FIM 12 billion, some 40 per cent more than in 1988-89. The turnover on the stock exchange rose to an all-time-high, owing primarily to Nokia. This trend has continued ever since.

One risk factor is that the tax reform has caused a clear split in Finland's stock market. It is worthwhile for domestic investors to take the return on their investments via dividends while foreign portfolio investors would prefer to take their returns via capital gains. This is due to the fact that even though domestics investors' taxation of capital gains is nominally on par with taxation of dividends, the possible acceleration of inflation increases the tax burden of capital gains.[19] When foreign portfolio investors seek capital gains, they strengthen the cyclical fluctuations in Finland's stock market. This disturbs the dividend income-based domestic saving in shares. Wide price fluctuations emphasise the fact that in long-term stock investments the correct timing is of great significance for the future return. This factor may mean that as the risks of small domestic investors grow, saving via the stock market will not be such an attractive alternative as the tax reform would lead one to expect.

[19] The opposite effect occurs via the capitalisation effect. Under the Finland's old tax system dividend taxes were capitalised rather precisely in lower stock prices (Kanniainen, 1991). There is no such phenomenon like this in the current system where the shareholders of listed companies do not pay tax on their dividends. Thus the level of net capital gains may rise and in this way the double taxation of retained earnings is alleviated. This would ease the tax burden on domestic capital gains closer to that for dividends.

8

ANALYSIS OF MARGINAL INVESTMENTS USING KING-FULLERTON METHOD

We will use the King-Fullerton method to investigate the required return on investment before and after the Tax Reform Act of 1993. The relation between the required return on investment, interest rate and required return of the investor is specified so that the overall impact of the return on marginal investment can be calculated for given tax parameters. In the previous chapter the comparison years were 1989, when the dividend deduction system was applied, and 1994, when the imputation system was in use. Furthermore, the analysis related to different sources of financing is widened here to include the required return on different types of investments within and across countries.

8.1 Neutrality of Investment Financing and Yields

The change in the tax treatment of capital gains divides the period under investigation into two parts. During 1991-92 the taxation of capital gains is investigated from the perspective of two types of investors, so that investors A and B represent the extremes with respect to capital gains taxation. For the years 1993-1994 only one representative investor is used.

1991-1992 Alternatives:

Alternative A:
On the margin capital gains are subject to the top tax rates. The King realisation process is assumed (King and Fullerton 1984). The effective accrued marginal rate (EAT) on capital gains is 29 per cent.

Alternative B:
The investor times the realisation so that the threshold for the long-term capital gains tax is not surpassed. The EAT is zero.

1993-1994 Alternative:

The capital gains are calculated on an accrual basis, and the effective marginal tax rate on capital gains is 15 %.

The summary of the framework for analysis and assumptions as well as the after-tax cost of finance in 1991-94 are presented above.

Sector:	Manufacturing
Sources of finance (weights):	- Debt (0.35) - New share issues (0.1) - Retained earnings (0.55)
Financier:	High marginal tax rate private individual
Type of investment (weights):	- Machinery (0.5) - Building (0.28) - Inventory (0.22)
Interest rate and inflation:	Real interest rate = 5 % Inflation = 4.5 %
Equilibrium concept of KF-calculations:	r-equilibrium
True economic depreciation:	- Machinery = 12.3 % - Building = 3.6 %
Special features:	Temporary tax relief arrangements not included.

Year	Type of finance			
	Retained earnings	New share issues	Debt	Ave.
1991 (A)	12.0	12.8	5.7	9.9
(B)	8.6			8.0
1992 (A)	11.4	12.9	6.1	9.7
(B)	8.1			7.9
1993	9.0	7.6	7.1	8.2
1994	8.4	7.1	7.1	7.8

Table 8.1 *After-Tax Cost of Finance of Finnish Companies by Type of Financing in 1991-94, %.*

According to table 8.1 the differences in financing costs in 1991-92 between different types of financing are large. The costs of equity financing were about twice those of debt financing. Finance via retained earnings (profits) was considerably more expensive than debt financing. The outcome for debt financing is explained by the deductibility of interest expenses at the company level and the light tax burden on interest income at the investor level. The withholding tax on interest was 10 per cent in 1991 and 15 per cent in 1992. Dividends were taxed according to the marginal tax rate of the investor (60 per cent). The double taxation of dividends was eliminated in the imputation system, but the tax burden on dividends remained higher than on interest income. The high cost of financing with retained earnings is due to the fact that retained earnings are liable to corporate tax and the capital gains tax of investors.

In 1993 the changes in the taxation of capital income made the tax treatment of different types of financing considerably more uniform. The greatest change occurred in the costs of equity financing in the table. In 1993 equity financing was still more expensive than debt financing, but after the withholding tax on interest was raised to the level of uniform capital tax rate the taxation of these two types of financing has been neutral. The use of retained earnings for investment even after the reforms has been more expensive than debt and equity finance. This form of financing is still subject to taxation at both the company and shareholder level. The average cost of financing companies' investments is estimated to have remained on the previous level or to have even fallen. The outcome depends upon the weights of the sources of finance used in the calculations[1].

The required return on investment is investigated in table 8.2 first by type of financing and then by type of investment. The required return depicts the minimum return required on new investments. A high required return prevents the growth of investments. The variation of the required return by type of investment indicates the lack of neutrality in taxation.

The calculations by type of finance are based on an average form of investment, which is the weighted average of machinery, buildings and inventories. Correspondingly, the calculations by type of investment are based on average financing costs.

	Type of financing			Type of investment			Ave.	Std.dev.
Year	Retained Earnings	New Share Issues	Debt	Machinery	Building	Inventory		
1991 (A)	11.7	12.7	2.8	7.6	8.5	11.3	8.6	5.2
(B)	6.7			5.1	5.6	8.4	5.9	4.8
1992 (A)	10.1	12.2	3.0	6.9	7.7	10.1	7.8	4.4
(B)	5.7			4.7	5.1	7.4	5.4	4.3
1993	5.9	4.3	3.7	4.5	4.8	6.4	5.0	1.4
1994	5.3	3.7	3.7	4.1	4.3	6.0	4.6	1.1

Table 8.2 Required Return on Investment in Finland by Types of Financing and Investment in 1991-94, %.

According to table 8.2 the average required return on new investment by industry would appear to have fallen in 1992-94 along with the change in the capital taxation system. The reforms appear to have a slightly positive effect on the amount of industrial investment financed from domestic sources.

[1] The weights in the King-Fullerton method are chosen, for example, as the average ratios of all financial sources, and thus they do not represent the distribution of the financing used for marginal investments. In this sense the outcome of the calculations are misleading.

The required return on debt-financed investment was raised appreciably by the taxation of interest income and the decrease in the benefit gained from the deductibility of interest and depreciation owing to the lowering of the statutory tax rate. A corresponding result was obtained already in the evaluation of companies' financial costs. The required return on investment financed with new equity decreased sharply. The required return on investments financed by retained earnings declined either slightly (alternative B) or appreciably (alternative A) depending on what kind of behaviour of the representative investor is assumed to follow in realising capital gains in the old system. All in all, the reforms made the tax treatment of different types of financing more uniform.

Corresponding calculations are presented also by type of investment. According to table 8.2 the relative position of various types of investment did not change in the reform. The required return on machinery investment is still the lowest and inventory investments the highest. The tightening of the depreciation rules on building investments and the elimination of the inventory reserves are not reflected in the results even though, in principle, they have raised the required returns.

The last column presents the standard deviation of the required return on nine alternative investments. According to the results this figure declines appreciably in the reform, which depicts the standardisation of the tax treatment for different investments financed with debt, new share issues or retained earnings.

8.2 *Current Capital Tax System and International Investment*

The analysis is now broadened to cases where investments are financed from a second country. The aim is to compare the attractiveness of Finland and certain European countries as a site for real investment. This kind of application of the KF method has been used in an OECD study[2].

8.2.1 Application to International Investments

International investments can be evaluated by means of an extended version of the King-Fullerton method. The most natural application of the KF method developed for evaluating international investment is perhaps the uncovering of allocation distortions in taxation and the discrimination of investment volumes in some country or several countries as a whole. In this role the

[2] OECD (1991)

method has been used in OECD and EU Commission studies.[3] The usefulness of the KF method is limited in comparisons of the competitiveness of different countries' tax systems. The reason is that the method focuses on the minimum return on marginal investments. The method does not shed light on the tax treatment of profits exceeding the minimum return level, which can nevertheless be assumed to have an impact on the investments carried out.

The use of the KF method entails other problems as well. In principle, it is assumed that new investments are made in old production units that have taxable income from which accelerated depreciation on additional investments can be deducted. For this reason the method does not apply very well to evaluation of investments in newly established production units.

The KF method nevertheless offers useful information on situations where a multinational company is contemplating carrying out a small, low-yield additional investment in certain countries where it has already existing subsidiaries. A low required return on investment in certain countries indicates that more investments can be made in the country in question, i.e. it may be worthwhile to carry out investments in low yielding projects that would not be profitable in countries with high required returns.

While the KF method indicates where it is worthwhile to carry out the "last" low-yield investments, a method is evidently also needed by which it is possible to evaluate the most suitable site for more lucrative investments.

The information given by the KF calculations are supplemented by calculations depicting the tax rate on profit distribution (ATR). The tax parameters of interest income, capital gains and dividends are involved in the method, but not, for example the depreciation system and tax relief. The average tax rate of the calculations is a nominal quantity unlike the figures of the KF method.

In the calculations it is assumed that the investing company, the parent company, is a corporation and that investments abroad are made via a subsidiary corporation. Domestic investments are made by the parent company, which is presumed to finance its operations with new share issues, debt and retained earnings. The financing of the subsidiary is also comprised of the three above-mentioned financing alternatives. The financiers of the parent company are assumed to be private individuals with high marginal tax rates living in the home country of the parent company.

[3] OECD (1991) and EC Commission (1992)

The table below presents the financing combinations included in the KF calculations. There are a total of seven alternatives to be evaluated.

		Financing offered by parent company[1]			Other source
		Debt	New Share Issues	Retained Earnings	
Financing of subsidiary	Debt	X	X	X	-
	New Share Issues	X	X	X	-
	Retained Earnings	..	..	..	X

[1] X = *evaluated,* - = *not evaluated,* .. = *alternative does not occur*

The calculations of the KF method are structurally similar to the original method. The clear difference is that in the calculations the several combinations of financing have to be allowed for and that the tax treatment of a foreign parent company and a parent company's financiers living abroad must be taken into consideration. The equations must also allow for means of preventing international double taxation.

Summary of Framework for Analysis and Assumptions

Basic arrangement	Parent corporation invests abroad in subsidiary corporation
Forms of financing for subsidiary:	- retained earnings (1/3) - new share capital from parent (1/3) - debt from parent (1/3)
Forms of financing for parent corporation:	- retained earnings (0.10) - new share issues (0.55) - debt (0.35)
Financier of parent corporation:	High marginal tax rate private individual (m=60 %)
Type of investment:	Manufacturing: - machinery (0.5) - building (0.5)
Interest rate and inflation:	Real interest rate = 5 % Market rate of interest = 8 % Inflation = 3 %
Equilibrium concept of KF-calculations:	r-equilibrium
Special features of ATR calculations:	A share of the return on invettment corresponding to the market rate of interest, i, is returned to financiers as a capital gains, dividend and interest in relation to the shares of financing. Any part exceeding i goes to financiers as dividend and capital gains in 50/50 ratio.

Four countries are included in the KF calculations: Finland, Sweden, the United Kingdom and Germany. The mutual investments of these countries are evaluated. The ATR calculations are carried out for these countries plus the Netherlands and Denmark. In the calculations the average required return for investments directed toward a certain country or the average tax rate are calculated as the arithmetic average, i.e. all countries have the same weights.

The values of the tax parameters used in the calculations for different countries are presented in table 8.3. The figures for Finland and Sweden are from the year 1994 and for other countries 1993.[4] Some of the tax parameters are determined in bilateral tax agreements, so that the value of the parameters can vary according to the counterparts. In such cases either a typical value or a couple of values are present in the table. The calculations are based on values of tax agreements. In the table the depreciation percentages are followed by the symbol *t* if the figure in question refers to straight-line depreciation.

	Finland	UK	Sweden	Germany	Netherlands	Denmark
Corporate tax rate (effective)	25.0	33.0	26.2	56.5	35.0	34.0
Relief for dividend taxation on dividends paid abroad	0.0	14.3	0.0	21.9	0.0	0.0
Relief for dividend taxation	25.0	25.0	0.0	50.0	0.0	0.0
Marginal tax rate on interett income	25.0	40.0	25.0	53.0	60.0	57.8
Marginal tax rate of dividend recipient	25.0	40.0	0.0	53.0	60.0	45.0
Effective tax rate on capital gains	14.8	25.7	7.4	0.0	0.0	6.9
Depreciation-% on movable fixed assets	30.0	25.0	30.0	30/10t		
Depreciation on industrial buildings	7.0	4t	3.3t	10t/4t		
Withholding rate on interest income-%	0.0	0.0	0.0	0.0	0,0	0,0
Withholding rate on dividend income-%	10/5	5/0	5/0	15/10	5/0	0,0

Table 8.3 Calculations of Tax Parameters and Their Values.

[4] Sweden re-introduced the double taxation of dividends in 1995.

8.2.2 *Required Return on Marginal Investment*

The following presents a comparison of the level of investment threshold in different countries when the investment can be financed from abroad. First, the impact of taxation on the allocation of investments by a parent company located in Finland will be evaluated. Table 21.1 seeks to answer the question of whether it is more advantageous for a Finnish company to invest abroad or in Finland.

Form of financing offered by parent corporation	Target country			
	Finland	The United Kingdom	Sweden	Germany
Retained earnings	4.99	5.64	5.19	7.61
New share issues	3.76	4.24	4.72	5.23
Debt	3.76	3.94	4.29	2.35
Aritm. ave.	4.17	4.61	4.73	5.06

Table 8.4 Required Return on Investment of a Company Located in Finland (%).

According to table 8.4 the required return of a Finnish company is in almost all cases lower when investing at home than when investing in the United Kingdom, Sweden or Germany, with the exception of debt-financed investment directed toward Germany. Based on this analysis it appears that our tax system does not discriminate against the domestic investments of our international companies. The low required return on debt-financed investment directed toward Germany is the combined result of the deductibility of nominal interest and Germany's exceptionally high corporate tax rate by international standards.

Table 8.5. seeks to depict the steering effect of taxation on investment when the investing company's home country is evaluated from the perspective of a third country. The aim of the analysis is to determine whether taxation crowds out investment directed toward Finland. On the basis of the

Home country of the company	Target country			
	Finland	United Kingdom	Sweden	Germany
United Kindom	3.50	4.20	3.66	4.77
Sweden	4.12	4.21	4.17	4.77
Germany	2.31	2.22	2.37	2.40

Table 8.5 Required Return on Investment of a Foreign Company, Average Financing, %.

table it appears that the required return on investment from Germany, UK and Sweden to Finland is rather low. Only the investment by a German parent company directed toward the United Kingdom obtained better tax treatment than the corresponding company directing investments to Finland. According to the table it appears that a foreign company should invest in Finland rather than in its home country. In the table the financing of investment is presumed to be comprised of the three forms of financing in equal shares.

Table 8.6. presents the average required return for investments carried out in each country from the various countries. For example, the Finnish figures refer to the arithmetic average of UK, Swedish, German and Finnish companies' required returns on investments directed toward Finland.

Finland fares well in the comparison with respect to investments financed via share issues and retained earnings. On the other hand, the required return on investments financed with debt is higher in Finland than in the United Kingdom and Germany. This is explained primarily by the lowness of Finland's corporate tax rate. The low corporate tax rate gives a smaller real tax advantage from the nominal deductibility of interest.

		Form of financing			
Target country of investment	Average	External	Debt	New share issues	Retained earnings
Finland	3.52	3.59	3.94	3.24	3.39
The United Kingdom	3.81	3.60	3.76	3.45	4.21
Sweden	3.64	3.69	4.02	3.37	3.54
Germany	4.25	3.52	2.38	4.66	5.71

Table 8.6 *Average Required Return on Investment Targeted toward Each Country by Type of Financing, %.*

As a summary of the KF method of analysing required returns on marginal investment, it can be said that Finland's tax schemes prevailing in 1994, particularly the capital tax system, treat investments made in Finland rather favourably compared to the other countries evaluated. The investment threshold was in many cases lower when investing in Finland than when investing in the other countries evaluated. Debt-financed investment constituted an exception from this rule of thumb. The tax treatment of debt-financed investment directed toward the United Kingdom and Germany was slightly more attractive than the investments directed toward Finland. When evaluating the results, the above-mentioned warnings about the validity of using the KF calculations in evaluating competitiveness should be kept in mind.

8.3 *Average Tax Rate on Investments Generating Excess Returns*

Above the analysis was confined to the evaluation of minimum returns of investments. Below the average tax rate calculations for the return on investment seek to depict the tax costs caused by repatriating international investments when the investment return is allowed to exceed the minimum profitability level of investments (cost of capital).

The first question addressed is whether it is more worthwhile for a domestic company to invest in Finland or abroad. On the basis of table 8.6., the average tax rate for the return on investment appears to be lower than when investing in Finland than in other countries. Taxation does not seem to crowd out the investment of domestic companies in Finland. The gap with respect to the United Kingdom and Sweden is nevertheless rather small. The figures in table 8.7. have been calculated assuming a gross return on investment of 12 per cent.

Table 8.7 *Average Tax Rate (ATR) of Return on Investment by Company Located in Finland According to Target Country of Investment, %.*

Target country	ATR, %	Target country	ATR, %
Finland	29.8	Germany	45.3
United Kingdom	31.7	Netherlands	36.0
Sweden	31.7	Denmark	35.4

Second, the attention turns to the average tax rate on investment when the investing company is located outside Finland. The aim is to find out whether taxation discriminates investment directed from a foreign country to Finland. According to table 8.8 Finland is always at least as attractive an investment site for a parent company located in the United Kingdom, Sweden or Germany as any of the other five countries. From the perspective of a parent company located in the Netherlands and Denmark, the most attractive in terms of taxation is Sweden with Finland ranking as the next most attractive site for investment. The difference between Sweden and Finland is rather small.

	Target country					
Home country of the company	Finland	United Kingdom	Sweden	Germany	Netherlands	Denmark
United Kingdom	46.3	46.3	46.3	56.8	49.1	46.9
Sweden	27.7	28.2	28.8	45.7	34.2	33.6
Germany	45.3	56.8	45.7	56.3	61.8	60.4
Netherlands	36.0	49.1	34.2	46.4	53.4	51.7
Denmark	35.4	46.9	33.6	45.8	52.9	51.2

Table 8.8 *Average Tax Rate for Foreign Company's Return on Investment by Country of Investment, %.*

Table 8.9. and figure 8.1. present an overview of the position with respect to taxes of the different countries as targets for investment. The figures depict the arithmetic average of the tax rates for investment directed from the six countries toward a certain country. This includes also domestic investment. In the calculations of table 8.9. the gross return on investment is presumed to be 12 per cent. Figure 8.1 illustrates the average tax rate as the gross return varies.

Also on the basis of figure 8.1. and table 8.9. it appears that Finland is the most attractive site for investment from the standpoint of taxation. Finland's position improves as the rate of return on investment rises.

Table 8.9 *Average Tax Rate (ATR) of Investments Directed toward Each Country.*

Target country	ATR, %	Target country	ATR, %
Finland	40.0	Germany	54.4
The United Kingdom	40.5	Netherlands	45.2
Sweden	40.8	Denmark	44.0

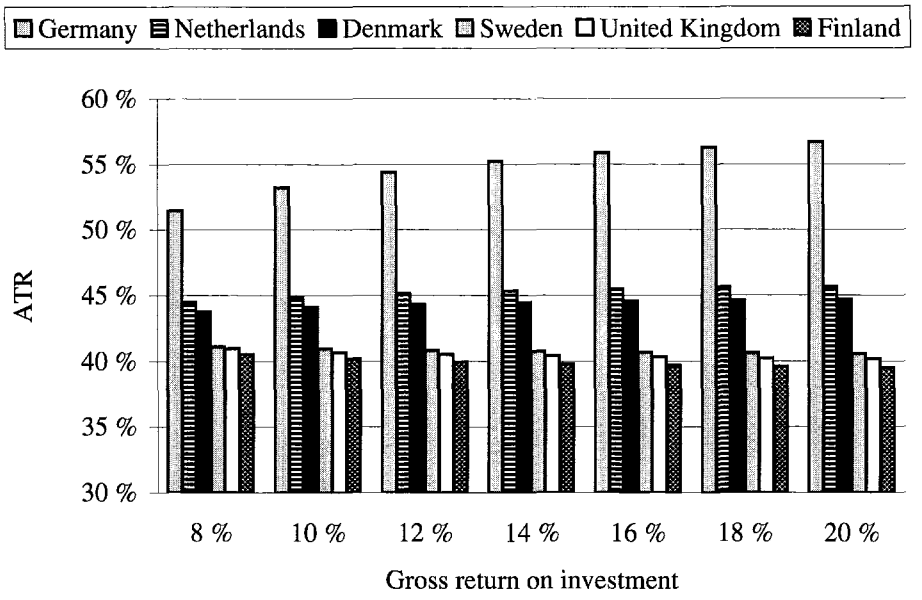

Figure 8.1 Average Tax Rate by Target Country.

Above we have not evaluated which tax factors determine the ranking of countries as an attractive site for investment. The average tax burden of international investment is affected by a large group of different tax parameters. Of these the most important are estimated to be the domestic corporate tax rates of the parent company and subsidiary and the dividend tax system, the ways to prevent double taxation, and withholding taxation of the subsidiary in the home country. The appraisal of the separate effects of the parameters would require a large amount of space, but the point of departure can be regarded as the observation that the rank of countries as a site for investment is correlated with the countries' corporate tax rates (cf. tax parameter table). Finland's attractive position in light of the comparison in this chapter can be explained by the lowness of our corporate tax rate.

The low corporate tax rate leads to a low total tax burden on dividends distributed and earnings retained in the company. On the other hand, the low corporate tax rate reduces the tax benefit from the nominal interest deduction. As the rate of return on investment rises the significance of the interest deduction nevertheless decreases, and the significance of dividends and retained earnings. The low corporate tax rate reflects upon the total tax rate of profitable investments. This provides an indication that the corporate tax rate can attract very profitable investments more than lower-yielding investments.

8.4 *Comparison of Marginal and Average Calculations*

The focus above was on the tax burden on investments directed toward Finland using the information offered by two different approaches. The required return on marginal investments were used to evaluate the level of the investment threshold while ATR calculations were used to analyse the total tax burden of repatriating profits of intramarginal investment projects. The analysis focused rather little attention on the impact that different tax parameters have on the results. The comparison of earnings generated via different methods has been sidestepped.

An attempt was made to shed some light on the relationships between the methods with example calculations evaluating two different tax systems. The framework is as follows:

Country A's corporate tax rate is 50 % and the country has considerable incentives for investment: in addition to a 20 % depreciation rate using the declining balance method allowed for machinery, an extra 10 % investment deduction from income is granted.

Country B's corporate tax rate is 25 % and the machinery depreciation rate is 20 %. Other investment incentives are not applied.

Neither country provides tax relief from double taxation for dividends paid to a foreign country. The withholding tax rates for interest income and dividends in the home country of the subsidiary. The home country of the parent company allows foreign dividends to be tax exempt and foreign interest income is granted a tax credit in order to prevent double taxation. The adjacent table presents the other parameters.

Inflation		3 %
Real interest rate		5 %
Home country of parent company		
Corporate tax rate		50 %
Imputation system		100 %
Marginal tax rate of investor:	interest income	50 %
	dividends	50 %
	capital gains	10 %
Financial structure of parent company:	retained earnings	40 %
	new share issues	20 %
	debt	40 %
Home country of subsidiary		
Financial structure of subsidiary:	retained earnings	1/3
	new share issues	1/3
	debt	1/2
Repatriation of excess profits:	dividends	1/2
	capital gains	1/2

Table 8.10 Parameters Used in Calculations of Example.

First, the required return on investment in the two example countries is presented by type of financing.

Type of financing	Country A (=50%)	Country B (=25%)
Retained Earnings	2.1	2.1
Debt	1.7	4.2
New Share Issues	1.7	1.8
Average	1.8	2.7

Table 8.11 Required Return.

According to table 8.11. the country with the high tax rate and narrow tax base the investment threshold is lower than in the country with a low tax rate and wide tax base. Figure 8.2. compares the required return as the level of inflation varies in three different systems:

- high tax rate + investment incentives (narrow tax base)
- high tax rate without incentives (wide tax base)
- low tax rate (wide tax base).

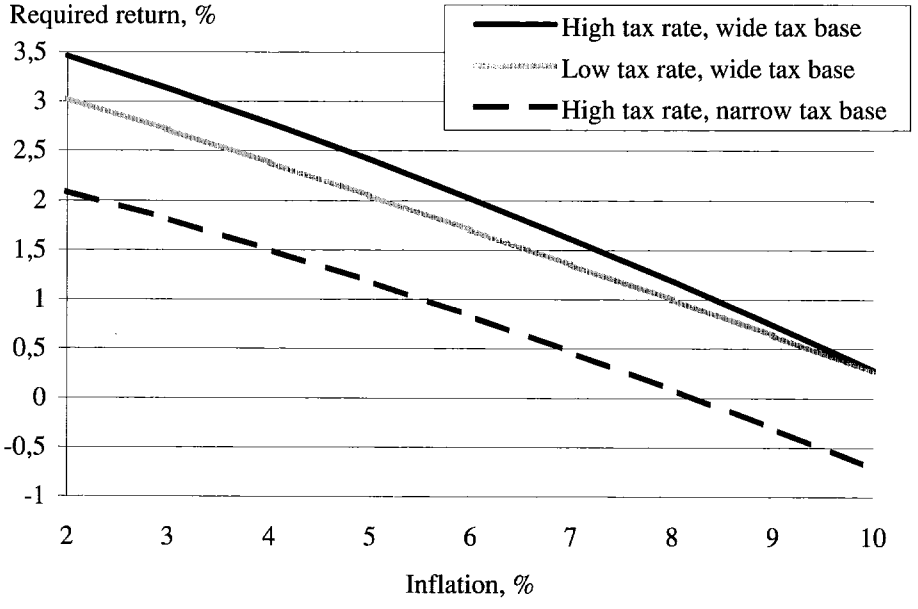

Figure 8.2 Required Return at Different Levels of Inflation.

On the basis of figure 8.2. it is apparent that as inflation decreases the required return in the investment threshold in a country with a high tax rate can be low, even though the tax base is wide.

In contrast, it must be pointed out immediately that the average tax rate on investments generating excess returns is considerably higher in the country with a high corporate tax rate than in one with a low tax rate. Country A the average tax rate is 52 per cent, and in country B 32 per cent.

In light of this example, the following conclusions can be drawn:

The tax system can appear favourable when evaluating foreign investments, e.g. with respect to the investment threshold of marginal investments, but prove to be less favourable when evaluating the repatriation of profits from high yielding investments. Here it is presumed that this outcome does not depend on the fact that the dampening effect of depreciation and investment incentives are not included in the total tax rate calculations.

A high corporate tax rate and narrow tax base, i.e. the tax system prevailing prior to the reforms of the 1980s and 1990s, leads to a low investment threshold and heavy taxation of very profitable investments.

The system of a high tax rate and low investment threshold thus attracts foreign investments that are not carried out abroad in countries with high required returns due to tax considerations. At the same time, more profitable investments are thwarted by heavily taxing the repatriation of profits. Thus the tax system may lead to the adverse selection outcome, i.e. the country attracts low-yielding investments from abroad based on old technology that do not promote the competitiveness of the economy in question. In this respect the Finnish tax reforms were very welcomed.

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