



TAMPERE ECONOMIC WORKING PAPERS
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FROM TAX AVOIDANCE AND TAX ARBITRAGE
TO REVENUE GROWTH

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Working Paper 64
January 2008

<http://tampub.uta.fi/econet/wp64-2008.pdf>

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ISSN 1458-1191
ISBN 978-951-44-7244-2

Fiscal consequences of greater openness: from tax avoidance and tax arbitrage to revenue growth

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31.1.2008

Abstract

Revenue from corporation tax and taxes on capital income, net of revenue loss from deductibility of interest, as a percentage of the GDP has tripled in Finland over the past two decades. This is argued to result from greater openness of the economy as well as from simultaneous tax reforms towards neutrality of capital income taxation by combining tax-base broadening with tax-rate reductions. They implied improved efficiency of real investments, elimination of tax avoidance in entrepreneurial compensations and more truthful reporting of business profitability. The result was increased tax payments from both corporations and cash flows to the households. The reform cycle brought about new tax arbitrage practices, also analysed in the paper.

JEL: H 20, H 25

Key words: Tax base broadening, tax arbitrage, imputation system, dual income taxation

1. Introduction

Deeper and enlarged economic integration increases international mobility of factors of production and therefore - so the argument goes - constrains the taxing power of national states. In particular, capital is regarded as having a tax base that restlessly seeks lower tax rates. Source-based taxes on real capital were long ago doomed to a race to the bottom, with residence-based taxes on income from financial capital having some hope to remain, subject to national states competing for residencies of the wealthy. The core literature is surveyed by Keen (1996). The preservation of the Diamond-Mirrlees production efficiency requires the equalization of pre-corporation tax returns on investments across countries. That is attained by taxing investment returns on the basis of the investors' residence countries, which (i) guarantees *capital export neutrality*: a resident of a particular jurisdiction faces the same pre-tax cost of capital on investment irrespective of the jurisdiction in which the funds ultimately will be invested, and (ii) implies efficiency: output cannot be increased by reallocating investments across jurisdictions.

Corporation tax is the major source-based tax on capital, having visible tax competition as regards the statutory rate. Among the EU-15 countries it declined from about 50 per cent in the beginning of the 1980's to about 31 per cent by 2003, but still ranging from 37 per cent in Germany to 12.5 per cent in Ireland. The 2007 average rate of corporation tax in the EU was 24-25 per cent. The revenue from corporation tax is more stable in relation to the GDP, slightly increasing over the past decade. Clausing (2007) documented that it was a general trend in the OECD countries, from about 2 per cent in 1980 to 3 percent in 2000. In this respect, there is nothing special in Finland's rather spectacular experience in the latter half of the 1990's; cf. Table 1. The statutory rate of corporation tax on undistributed profits was more than halved from the first half of the 1980's. Because of partial deductibility of dividends in the 1980's, the effective corporate tax rate on distributed profits did not decline so dramatically. Revenue from corporation tax has simultaneously more than doubled as a ratio to the GDP in Table 1.¹

Greater openness of economies itself improves efficiency via increased mobility of resources, both real and financial capital in particular, but also facilitates tax avoidance and tax arbitrage. To prevent loss of tax revenue, a more neutral system of taxing income from capital is required that

¹ It declined to 0.3 per cent of the GDP in the 1993 trough of the depression, but achieved 3.7 per cent in 2006.

further enhances efficiency of the existing capital stock and allocation of investment.

Table 1. *Revenue from corporation tax, value added tax (VAT), tax on earned income and income from capital and loss of tax revenue from deductibility of interest on housing and non-business loans as a percentage of GDP*

Year	Corporate	VAT	Earned	Capital	Interest
1987	1.5	8.7	17.4	0.9	1.0
1995	2.2	7.3	16.6	0.6	0.5
2000	5.9	8.4	14.4	1.3	0.3
2004	3.5	8.9	13.3	1.2	0.2
2005	3.3	9.1	13.4	1.2	0.2

Source: own calculations, *Statistics on income and property* and *Statistical Yearbook* of Statistics Finland.

Legend: The development of the tax burden of earned income vis-à-vis capital income is since 1987 the year the government announced its intention to reform direct taxation. In 1987 the VAT base included gross investments in non-manufacturing sectors and revenue from the VAT consists also of a levy on pharmacies and a tax on insurance premia. In 1995 interest deductibility was in a transitional phase, interest on the end-of-1992 housing debt being deducted at the tax rate on earned income. Tax on capital income includes wealth tax and in the year of 1987 also income tax of unincorporated companies to attain comparability with the DIT era.

Three major reforms concerning taxation of income from capital in Finland are surveyed with implications for tax revenue and how the opportunities for tax avoidance have been restricted or eliminated in the business sector in particular. Therefore attention is paid to how the tax ranking of entrepreneurial compensations has changed over the reform cycle. The sources of pertinent inefficiencies of the Finnish economy during the 1980's, including its tax system, are briefly described in the next section. Tax avoidance in entrepreneurial compensations before the reforms is analysed in section 3. The measures brought by the 1990-2004 imputation system to broaden the tax base of capital income are explained in section 4 as well as why the system was initially sensitive to revenue loss from tax arbitrage. The adoption of Nordic dual income taxation (DIT) since 1993 and its tax base reforms are described in section 5, including taxation of entrepreneurial compensation in DIT. The replacement of imputation credits with partial double taxation of dividends since 2005 and the reform of the corporate tax base are shortly described in

section 6. Section 7 concludes with a discussion of the resulting improved efficiency and contrasts the observed structure of increased tax revenue to remaining inefficiencies.

2. Major sources of inefficiencies

The economy of Finland has always vitally been dependent on imports and exports, an open economy in that sense. Yet many sectors of economic activity were regulated until the mid 1980's. For example, cartels except bidding cartels were allowed if they were registered with the authority. As part of Finland joining the European internal market process, the Finnish Competition Authority was established in 1988 with the aim of promoting effective economic competition. A particular source of inefficiencies to the Finnish economy was the bilateral trade with the Soviet Union. Its share of Finland's foreign trade had approximately doubled from the 1960's to about a quarter in the 1980's. The Soviets exchanged their oil for finished goods. Therefore the oil price hikes of 1973 and 1979 were initially positive demand shocks in Finland, turning later on into internal cost crises. That of the 1980's was particularly fuelled by foreign borrowing. The bilateral trade was in huge difficulties already in 1990 and collapsed thereafter.

One peculiarity was the employers' right to re-borrow their contributions to the mandatory employee-pension schemes at an administratively set rate of interest that did not always match the rate of inflation. Because the pension funds are non-taxed, but interest was deductible in business income taxation at the rate of 60-62 per cent on undistributed corporate profits, the post-tax real cost of such credits was negative, creating huge incentives for overinvestment in the existing operations. Similar inefficiencies were associated with the regulated branch of bank-intermediated financing. The deposit rates of interest were set by the banking cartel, but subject to certain conditions interest income was tax-free to the households. Bank of Finland regulated the average level of interest rate on the loan books of the banks. Because of interest deductibility, there was chronic excess demand for borrowing at the regulated rate of interest, the banks allocating the funds to their favoured customers. The interest rate in the commercial paper market was market determined and interest income on the money market deposits was subject to ordinary income tax.

Financial markets were relatively rapidly opened to international actors in the 1980's. The market for debt finance of businesses was first totally liberalized in 1986. In the equity market, listed companies were allowed to issue unrestricted share certificates, also owned by foreign investors. Record proceeds from new issues were raised in the years of 1985-1988. All remaining ownership restrictions of companies were eliminated from 1993 as part of Finland's entry process to the European Economic Area in 1994 and to the EU a year later.

Generous depreciation allowances, immediate expensing in development regions, transfers to investment funds, i.e. expensing an asset before its purchase, and write-downs of inventories in business income taxation and an allowance for capital income in personal taxation contributed to relatively modest average, but high marginal tax rates on income from capital in the mid 1980's. Because such a tax base was combined with high statutory tax rates and high rates of inflation, the businesses were forced to invest in real estate and machinery to hedge against inflation and the taxman, called "tax pressure investments". Ylä-Liedenpohja (1984) demonstrated that some projects could earn even a negative pre-corporation tax real rate of return, but yet a positive real rate of return to the owners. Inefficiencies were indispensable.

3. Tax avoidance in entrepreneurial compensations

The old-time game was to finance investment with borrowing and to transform any investment returns exceeding interest deductions into tax-free income, mostly into realized capital gains on either movable capital as shares owned at least five years or fixed capital as real estate owned at least ten years. Time deposits generating non-taxed interest income served as partial collateral to loans. The loopholes were the explanation for the acceptance of the steep progressivity in taxation of ordinary income, the air vents by which the tax system breathed. The process to close the loopholes had ebbs and flows. For example, amidst the period of abruptly tightening taxation of ordinary income in 1973, the politicians eliminated taxation of imputed income from owner-occupied housing, except from dwellings of the highest tax values, to realize the subsequent year that interest deductibility need to be restricted accordingly. Realized capital gains were gradually subjected to income tax since 1985. Entrepreneurs operating unincorporated businesses since 1983 faced a minimum of taxable earned income against which depreciation allowances,

inventory write-downs and interest expenses on business borrowing could not be deducted. But, it was not until DIT that the loopholes were closed by a consistent system and by not allowing deductibility of debt interest in unincorporated businesses on the part of debt which accounts for negative net worth because it reflects personal borrowing from the business sphere.

Let us investigate how the means of entrepreneurial compensation were distorted in 1990, the last year when most of the dividend receipts were taxed according to the old system prior to the imputation system. Distributions of profits were partially deductible from the corporation tax base, explained in Ylä-Liedenpohja (1984), and in personal income taxation dividends were added to the owner's ordinary income, with the highest marginal tax rate being about 64 per cent. That is why the double-tax rate of dividend income rose considerably above the tax rate on labour income if the same amount were raised as waged or salaried income from the company. Denote

τ_w = average tax rate on labour income = 0.27 of all ordinary income in 1990

τ_{cd} = corporation tax rate on distributed profit = 0.30 in 1989

τ_d = dividend tax rate = marginal tax rate on labour income = 0.64 in 1990

Using the 1989 - 1990 values of the tax rates, the post-tax amount of labour income markka (=0.73) considerably exceeded the post-tax amount (=0.25) of one markka of distributed pre-tax profit:

$$1 - \tau_w > (1 - \tau_{cd})(1 - \tau_d)$$

Thus the necessary income for the living of an entrepreneur's family was taken from the corporation in the form of wages and salaries. The above condition also held true for the last markka of wage income from the corporate to the household sector for which the marginal tax rate = 0.64 = τ_w applied. Therefore even the wealth tax was paid by the entrepreneurs from taxable labour income and not out of post-tax dividends as in case of passive portfolio investors. In a going concern, all tax incentives in 1990 distorted the means of entrepreneurial compensation in favour of wages and salaries against dividends, i.e. economic income from capital was transformed into legal labour income.

The old tax system also distorted taxation of income from unincorporated companies in respect of dividends and discriminated against incorporations. Partnerships and limited liability partnerships

were separate tax entities, but their income was divided in two. One half was allocated to the company and the other half to the partners, and both were taxed at the progressive rate schedule of ordinary income. DIT ended separate taxation of unincorporated companies as well as the set up of such companies.

But, the old tax system favoured realized capital gains both over dividends and over labour income as a means of entrepreneurial compensation. The taper relief of long-term realized capital gains on both real estate and corporate shares was made more stringent since 1989. Thus the total effective tax rate on such gains depended heavily on inflation. Because of liberal tax depreciations and write-downs, many businesses were in the state of permanent tax exhaustion, analysed in Ylä-Liedenpohja (1984). They could not claim all those deductions which they were entitled to, i.e. they were in a state equivalent to a permanent stock of tax losses carried forward. Businesses could reinvest their profits in machinery and structures without paying any corporation tax in practice. Therefore, the total effective tax burden on entrepreneurial compensation was the lowest if one of the same entrepreneur's companies was sold.

4. Imputation system and tax arbitrage

Though the economy was booming at the end of the 1980's, corporation tax receipts were not, because companies increasingly allocated their non-taxable income to dividends to benefit from their partial deductibility from the corporate tax base. Another source that grew in importance was foreign-source dividends because Finland uses the exemption method to eliminate international double taxation. At the same time, pension insurance companies and other pension schemes were allowed to increase the portfolio share of equities, and foreign ownership emerged. The leaking corporation tax base together with the increasing prevalence of non-taxed ownership meant that income from corporate capital was less heavily taxed than once. The problem was solved in two phases. The imputation system was adopted from the beginning of 1990 and the Nordic DIT system from 1993. Both phases contained sizeable measures of tax-base broadening.

The imputation system was implemented with an equalization tax as its essential element and by not reimbursing the imputation credits on dividends to the non-taxed institutional owners. The

equalization tax was determined by the distributed dividends to adjust the company-level taxes up to the imputation credits on the distributions if they fell short of it. The 1990 package also reduced the corporation tax rate. Real consequences of this phase were not really observed because the deep 1991-1993 depression emerged with its disastrous effects on the profitability of enterprises.

Two kinds of revenue-eroding tax arbitrage emerged. Because non-taxed institutions and foreign owners were not entitled to the imputation credit, they sold their dividend right to another party for a substitute dividend as to the Finnish banks, short of taxable income during the crisis. The imputation credit was in principle shared by the two parties. Because the corporation tax rate was 40 per cent in 1990-1992, the imputation credit was 66.67 for a dividend of 100. If the parties agreed on a substitute dividend of 130, the buyer's net gain was 36.67 to shelter its losses. Erosion of tax revenue ended when the buyer could no longer deduct that part of the substitute dividend which represents the original dividend to the non-taxed party. The substitute dividend also was grossed up with the imputation credit if the seller was a taxpayer in Finland.

The other kind of tax erosion emerged in mergers. All companies were not loss making in the beginning of the 1990's. A profitable company sold its proper business assets so that the shell company held the cash and the undistributed profits on which corporation taxes had been paid since the imputation system became effective. Therefore it paid for a loss making company to buy the shell company, distribute its cash, deduct losses against the pre-tax dividend and ask the taxman to reimburse the imputation credit because the buyer's taxable profit was zero. With the imputation credit being two thirds of the dividend, a business loss of 100 could be set against a pre-tax dividend of 100, with the dividend of 60 paid out of the cash of the shell company and the tax administration sending the imputation credit of 40 to the buyer's bank account.

Two major rulings ended tax motivated business transactions. If the majority ownership of a company changed, its tax surpluses were lost, i.e., previous corporation taxes on undistributed profits of the imputation period could no longer be used to match the imputation credits without equalization tax. And more importantly, the tax administration stopped sending money to the buyers of the shell companies so that the imputation credits could only be used against the

corporation tax liability of business activity.

Why did the owners of the shell company not distribute the dividends to themselves? Full imputation of corporation tax on distributions implied a change in the relative tax ranking of entrepreneurial compensation from wages toward dividends, because both channels were taxed at the same progressive schedule of ordinary income in 1991-1993, but dividends were not subject to an employer's social security tax while long-term capital gains remained tax favoured over dividends. Thus the owners preferred to sell their companies. The owners of the loss-making companies could not pay themselves such high wages as the owners of the profit-making companies. Therefore, they faced a different tax rate even on their pre-tax dividends which contributed to the profitability of tax arbitrage.

The growing importance of international operations and foreign ownership of the listed companies during the 1990's meant that equalization tax penalized through-flow dividends, foreign-source dividends distributed to foreign-destination recipients which were not entitled to the imputation credit of Finland. That is why already since 1993, together with the lifting of the restrictions of foreign ownership, there was an attempt to exempt through-flow dividends from equalization tax though that was truly effectively achieved since 2001. But, equalization tax was effective for domestic destination dividends. Therefore its existence may have contributed to the revenue growth from corporation tax during the latter half of the 1990's, not directly, because revenue from equalization tax amounted only to about 150 million euros, but indirectly. Kari and Ylä-Liedenpohja (2005) showed that, because of an equalization tax, the parent company may transfer price foreign profits to its country of residence, even from a country with a lower rate of corporation tax. Parent companies may also have repatriated foreign-source income, invested it in Finland and generated taxable income to avoid paying equalization tax on their domestic-destination dividends. The last year of equalization tax was 2004.

5. Tax base reforms - dual income taxation

DIT was introduced in the trough of the deep 1991-1993 depression, maintaining the imputation system. It replaced global income taxation, where taxable income is subject to a single

progressive tax schedule, with taxation of capital and labour income separately. DIT divides personal income into capital income and earned income as labour income, pensions and social benefits. Earned income is taxed at a progressive schedule while income from capital is taxed at a proportional rate. Rental income, realization gains on real estate, realized capital gains and dividends from listed companies are always treated as income from capital. Dividends from unlisted companies and income from unincorporated businesses are split into capital income and earned income.

Reacting to the move of Sweden, DIT involved a cut of the corporation tax rate to 25 per cent which also was chosen to be the tax rate on personal capital income. Equally blunt measures broadened the tax base. In business taxation all schemes that offered accelerated write-downs of assets were eliminated, but there was a small, temporary investment tax credit during the years of crisis. Realized nominal holding gains of all assets, including controlled companies (CFC), became fully taxable. Taxation of registered unincorporated companies as separate tax-paying entities ended. The previous system of corporate taxation was in fact progressive for smaller companies. Because the taxable income of each company was assessed separately, even groups were typically made up of tens of separate companies to attain a lower effective rate of corporation tax on group income.

The tax base of personal capital income was similarly broadened, eliminating opportunities for tax avoidance in the previous tax system. Nominal interest on bank deposits and publicly quoted bonds became subject to a final source tax at the rate on personal capital income, implying a high tax rate on real interest income, but tax neutrality of debt as a source of business finance. Also, interest expenses on owner-occupied housing became deductible only at the tax rate on capital income. Prior to DIT the maximum deduction could contain interest on pure consumption loans. Tax revenue loss from interest deductibility has decreased quite remarkably in twenty years; cf. Table 1. The deductibility of life assurance premia was eliminated, too. Life assurance contracts with savings are taxed as other categories of income from capital and in certain cases as earned income when the employer pays the premia. Tax treatment of voluntary pension savings was changed not until 2005 so that their tax credit is earned at the tax rate on capital income.

The total tax rate on distributed profits by listed companies was consequently reduced in DIT. Because the imputation credit of dividends fully covered the underlying corporation tax, distributed profits were taxed once at a rate that was below the marginal tax rate of wages for most shareholders. Nominal capital gains from corporations were now double taxed because they did not benefit from the imputation credits. Taper relief after 10 years' ownership remained that mitigated the taxation of purely inflation-induced gains. The rule also applies to real estate.

DIT introduced a differential tax treatment of distributions by non-listed companies from distributions by listed companies. Dividends from non-listed companies are split into income from capital and earned income, using a presumptive rate of return on net business assets. The split rule defines the maximum that is capital income for tax purposes. When DIT was legislated, the yields on long-term government bonds hovered around 14 per cent. Therefore the presumptive pre-tax rate of return was set to 15 per cent. Hence non-listed companies were no longer forced to invest their profits in their existing operations, but could distribute a post-corporation tax dividend of 11.25 per cent on their net assets as capital income. And, the freed funds could start seeking new profit prospects elsewhere. This was important for the owners of old established businesses which had net assets. The presumptive rate on net assets was lowered and the rate of corporation tax was raised in 1996.

Entrepreneurs without net assets in going concerns rewarded themselves in the form of dividends taxed as earned income in addition to a small wage up to the threshold at which the marginal tax rate on wage attains the tax rate on personal capital income. Nominal capital gains from dissolving or from a sale of a non-listed company were similarly double-taxed as in case of listed shares. If the sold company is treated as an integral part of a self-employed person's professional practice, the realization gain will be split into capital and earned income.

6. Towards double taxation of dividends

The 2005 changes to the system of taxing income from capital were motivated by international developments. The road chosen by Germany influenced policymakers. The imputation credits of dividends were lifted since 2005 and dividends from listed companies partially (70 per cent)

subjected to personal tax. The tax rate on personal capital income was lowered to 28 per cent and the corporation tax rate to 26 per cent so that for the first time the two tax rates were not the same. The move was motivated by the tax systems of the EU enlargement countries.

Part of the package was to eliminate the rudimentary wealth tax, justified by its small revenue of 110-120 million because of easy tax evasion. But, at the margin its effect was formidable, reminiscent of the 1980's when every single tax in isolation was progressive and, due to specific allowances, each category of capital income was separately progressively taxed. The wealth tax burdened share ownership, but not financial assets subject to the source tax on interest income. Assets of family businesses were assessed in wealth taxation more leniently² than shares of listed companies. Consider a portfolio of equities the post-corporation tax real rate of return of which corresponds to that in international financial markets, equal to 6.7 per cent by Dimson, Marsh and Staunton (2002). With a 26 per cent tax rate, the pre-corporation tax real rate of return on the physical assets is 9 per cent. The market value of the shares is the equilibrium PE-multiplier, the often quoted 15, times the post-tax return, i.e. $15 \times 0.067 = 1$, meaning Tobin's $q = 1$.³ When the effective rate of wealth tax was 0.9 per cent, it represented a 10 per cent tax on the pre-corporation tax return on the Finnish assets, but implied a tax rate of $0.009/0.067 = 0.134$ on the post-corporation tax real return the investor earns.⁴ In that respect it was quite a sizeable tax on private domestic ownership in a world dominated by tax-exempt collective pension savings.

The most important change concerning the tax base of corporations was no longer to tax realized holding gains of CFC's nor to deduct their losses against business income. Most likely, Finland was a dumping place of loss-making CFC's, an indication of which may be that the stock of deductible tax losses carried forward started to decrease in 2004 when the reform was announced and made immediately an effective rule.⁵ The other important change was to include dividends on long-term investments of insurance companies and banks to the tax base because investing is

² This is justified on the basis that dividend tax has not been paid on undistributed corporate profits, i.e. a wealth tax must burden only household wealth and not pre-income tax household wealth.

³ Tobin's q is defined the ratio of the market value of an asset to its replacement cost.

⁴ Because the alternative financial asset is not subject to wealth tax, the wealth tax rate must be multiplied with the double-tax rate of undistributed profits to get its effect on the pre-corporation tax cost of capital (Ylä-Liedenpohja 1978). Hence this kind of wealth tax represents tax upon tax.

⁵ In 2000 such carry-forward business losses totalled 22.0 billion euros, 2003 28.3 billion, but at the end of 2005 23.4 billion euros.

regarded as a branch of their core business.

The current presumptive rate of return is 9 per cent for unlisted companies, applied to the year-opening value of net assets since 2006 while in 1993-2005 the split based on the year-end values. Because the presumptive rate is a nominal post-corporation tax concept, it corresponds to the Dimson-Marsh-Staunton average real rate of return on international equities plus the equilibrium rate of inflation and guarantees that, on average, the reward for an entrepreneur's risk-taking will be taxed similarly as households' passive investments in listed companies. 70 per cent of any dividends exceeding the 9 per cent maximum of capital income are taxed as earned income. The tax rates on earned income have been reduced during recent years so that already in 2007 operating unincorporated businesses was tax favoured over entrepreneurial rewards as earned income dividends (Ylä-Liedenpohja 2007).⁶ However the top marginal tax rate on earned income exceeds the effective tax rate on double-taxed capital gains. Therefore the high opportunity wage professionals may benefit from transforming their labour rewards into taxable realized capital gains if the business of the dissolved or sold company was wide enough, as analysed by Ylä-Liedenpohja (2007).

The first 90000 euros of capital income dividends from non-listed companies has since 2005 been non-taxed. This upper limit is individual specific. Any exceeding amount will be taxed as dividend income from listed companies. Therefore dividends from listed companies received by non-listed companies are partially taxed to effectuate an identical tax rate on dividends as if the shares were directly owned by individuals. Yet if the holding represents over 10 per cent of the listed CFC, the dividend is non-taxed as are all dividend receipts flowing within the non-listed sector.

The reduction of the corporation tax rate also decreased the pre-tax cost of capital for investments by all companies in Finland. Small portfolio investors experienced their tax rate on dividends to increase, but those previously subject to wealth tax were approximately compensated for by its elimination. In the aggregate, tax incentives for savings and share ownership were diminished,

⁶ In case of unincorporated businesses (sole proprietors and partnership members), the presumptive rate of return is 20 per cent (or 10 per cent if so demanded) and it has always been applied to the year-opening value of net business assets. In addition, 30 per cent of their employees' wage bill being added to their net assets in the split.

but the relative attractiveness of Finland as a residence of the wealthy did not change.

7. Conclusion

This paper describes the tax revenue consequences of lifting the barriers to economic integration in Finland and at the same time joining the international wave of tax reforms that broadened the tax base and reduced the tax rates on income from capital. The reforms restricted or totally eliminated opportunities for tax avoidance, but also initially caused two kinds of revenue eroding tax arbitrage to emerge in the imputation system, analysed in section 4. The relative tax preference for entrepreneurial compensations in going concerns has changed from salaried income toward dividends. Long-term realized capital gains are now double-taxed in contrast to almost nil two decades ago.

Yet in the aggregate, a clear shift in the balance of direct taxation has occurred from labour income towards heavier taxation of capital income though greater openness of the economy would have predicted the opposite development. Dual income tax has also spurred people to earn income by saving and entrepreneurship. With all its details, it has been a laudable means to raise tax revenue and the size of the public sector. Finland has only used this additional tax revenue mostly to increase social transfers for working-age people, though marginal tax rates of earned income have been reduced, too. The fraction of aged 15-64 in the labour force has come down from 73 per cent in 1990 to 66 per cent in 2002 from which it has risen to the current 70 per cent. At the end of 2007 there still were over 200000 people who were either outside the labour force or effectively employed by the Ministry of Labour in its activities in contrast to the year of 1990. And, another 200000 were available if the participation rates of the other Nordics and Switzerland were achieved!

With labour internationally a less mobile resource than capital, economics predicts the effective burden from heavier taxation of capital income to lie on labour in such a country in the form of lower wages or loss of jobs (Mintz 1996, for example). Social benefits and transfers financed from heavier taxes on income from capital have maintained the power of wage cartels and increased reservation wages in jobs of lower skill, in particular. Job destruction has occurred

because real wage level has increased faster in Finland than in Western Europe.

Finland carried out many bold tax reforms during the crisis of the beginning of the 1990's. The reforms improved efficiency of real investments and of the use of real capital in contrast to the previous tax system. In addition to the reforms described above, a local tax on real estate was launched in 1992, raising revenue of 0.5 per cent of the GDP in 2006. Also, the VAT system was reformed in 1994 from a tax on investment in non-manufacturing sectors to a consumption tax. Maliranta (2003) reports on increased rate of productivity growth in the manufacturing sector since 1986, i.e. since lifting the restrictions on international borrowing by businesses and since the first phase of loosening the foreign-ownership constraints of Finnish companies. Another surge of productivity growth is linked to the post 1993 years. Maliranta (2005) emphasizes that the phenomenon covers all manufacturing sectors, not only information technology and telecommunication, but the level of productivity is internationally low in the services.

The tax price of dividends declined drastically in contrast to the 1980's. Today companies report visible profits which are taxed. Funds flow freely from mature industries to newer enterprises via dividends and not via share repurchases or cash takeovers because dividend tax is lighter than capital gains tax. The state of Finland has sold stakes in the publicly quoted state-owned companies. Its dividend receipts have grown almost double the rate of the households during DIT. Therefore the observed rise of the capital share of the GNP lies in the true opening up of the Finnish economy. Lifting all restrictions of foreign ownership since 1993 and joining the EU consequently eliminated inefficiencies because of the international required real rate of return in all investment activities. A more neutral taxation of income from capital is part of the institutional innovations that contribute to a virtuous circle of a more rapid growth with a smaller investment ratio, down from about a quarter to one sixth of the GDP.

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