

Flat tax and Sweden: According to Hall and Rabushka

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Abstract

In April 2005, the Economist featured a series of articles about the taxation concept that, according to its proponents, would serve as the medicine potentially boosting Western Europe's somewhat struggling economies. The "Flat-tax" became heavily discussed throughout media as means of improving aggregate country productivity. The small and open economy Sweden was no exception. While many less developed countries in Europe are experiencing vast successes as a result of its introductions of flat taxation, not a single country in modern Europe has followed the example. This thesis presents the case of the Hall and Rabushka Flat Tax for Sweden. Using true income data from 2003 and a set of constraints, such as tax revenue neutrality and a limited number of tax rate scenarios, we show that Sweden is able to satisfy a Flat Tax ranging from 28 to 37 percent, but that it entails a trade-off between increasing this level at the cost/benefit of income distribution. We also explore the potential difficulties for businesses with the introduction of a Flat Tax.

KEYWORDS: Flat taxation, income distribution, international capital taxation.

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1 Introduction

“Call off the progressive tax!”, “Flat tax able to boost Sweden!”, “The flat tax, the answer to politicians’ prayers!”. The quotes have been many in Sweden throughout 2005 around the advantages of eliminating the progressive tax scheme for proportional taxation. Many editorials and opinion pages of Sweden’s liberal newspapers has decorated the modern tax phrase – “The Flat Tax” – stressing its strong points of what would enhance Swedish productivity.

The debate has strongly been influenced by an equal ongoing debate throughout the rest of Europe, principally highlighted in one of the Economist’s April issues (2005-04-14/16) where the magazine promoted the flat tax using Europe’s less developed countries as examples of its promising advantages.

Many of the developing countries in Europe have had their flat tax systems up and running for quite a while and their introductions have in the vast majority of the cases indeed been followed by huge success. In 1994, Estonia became the first country in Europe to introduce flat taxation replacing their three rates on personal income, and another on corporate profits, with one tax-rate being uniform at 26 percent. Latvia and Lithuania, its neighbors, soon followed example. And, in 2001, Russia moved into flat taxation as well. Also mirroring the others are Slovakia and Poland, but being even more aggressive; lowering their rates to roughly 15 percent (The Economist 2005-04-14/16).

The three and main advantages of the flat tax, as its proponents claim, are that it (1) enhances productivity and thereby economic growth, (2) entails simplicity, and finally (3) it augments equality (The Economist 2005-04-14/16, Svenska Dagbladet Debate Page 2005-07-24, Dagens Nyheter Head Editorial 2005-04-24/2005-08-01). Firstly, through the removal of marginal effects in the taxation of labor, it makes it more worthwhile working and getting educated. Secondly, the system eliminates the anger and frustration with the public, replacing the red tape facing individuals and companies in today’s current tax system with a simple and straightforward tax code. Finally, it makes taxation fairer – every individual is taxed on the basis of what it individually consumes, or “take-out” from the economy, not on the basis of contribution grounded on one’s individual level of income.

The flat tax indeed seems to have many advantages, however the debate in Sweden has not developed into anything else than just a debate. Currently, with nine months to the election, no governmental party has introduced the flat tax as part of its political program. The conservative Moderate Party proposed it a couple of years ago, but currently the party has on the contrary completely changed direction, being much more similar to the Social Democrats in terms of its stance on taxation (Dagens Nyheter Head Editorial 2005-04-24). Some exceptions exist though, however, only brought forward by the party’s youth union, paralleled with equally strong support from its sister union, the youth organization of Swedish Centre Party.

A reasonable question to ask, hence, in the light of such unwillingness of bringing the question to table, concerns the flat tax and its applicability,

especially when considering a developed nation vis-a-vis a less developed nation's heritage and context. Ending a hundreds of year's old paradigm of progressive taxation, a flat tax reform could very well put heavy pressure on a country's economy in a period of transition. Politicians may fear that a fully fledged reform would deteriorate one's entire economy. Is it the case that a flat tax reform for a developed country posits too many troubles hard to handle – when discussing the “Flat-Tax”, are we at the end of the day only talking about plain utopia?

In this paper we find that Sweden, with its current transferals in place, is able to satisfy a flat tax of, at the lowest, circa 28 percent, but that it entails a trade-off between increasing this level at the cost/benefit of income distribution. Moreover, much more is to be analyzed on behalf of business taxation since businesses are taxed more heavily than individuals in the Flat Tax, pointing at severe problems for the economy to occur in the event of periods of transition.

2 Purpose and method

The purpose of this thesis is to apply the Hall and Rabushka Flat Tax to Sweden. Today, to our knowledge, no such application has been performed. Up to date only versions of what one can call a true flat tax is part of the main research. Capital has predominately been seen as exogenous to the previous models concentrating the analysis solely on the taxation of labor.

The thesis specifically aims at analyzing the consequences for today's levels of taxation of labor and capital income, as well as what (if any) income groups represent winners and losers vis-a-vis today's system – that is, analyzing the characteristics of income distribution.

The thesis commence by presenting the generic structure of a tax system and its ensuing distortions followed by a definition of the flat tax together with the up to date previous research and applications. Also, a basis for how to generically evaluate the quality of a tax system is provided. This stands for a necessary background.

Next, the thesis gives away for the theoretical discussion where the Hall and Rabushka model is described in detail, this including a critique. Subsequently, the thesis moves into an overview of the Swedish tax system including its various tax rates and governmental income levels.

Obviously, the research design is deductive. Our point of departure is in existing theory; the underlying purpose to test the outcome of the Hall and Rabushka proposal with respect to Swedish empirics. The research is mainly quantitative; noticeably in that we model a flat tax rate being based on mathematical constraints. As the thesis departures in theory and in the specified model *per se*, the methodological discussion including the thesis assumptions will not be present until the specifications of the model. However, at a macro level, three delimitations are presentable at this stage: (1) the year of inference is 2003; motivated solely by that it represents the latest year in time where data is

reliable, at the time of writing the 2004 statistics is not yet fully set by officials. (2) The analysis is concentrated on two snapshots in time, moving from one tax system to another ignoring any transitional effects in between. And finally, (3) the thesis concentrates solely on the three main tax bases; labor, consumption and capital. Hence the rest – for the purpose of this paper – is considered miscellaneous tax.

The remainder of the paper is organized as follows. Succeeding the description of the Swedish tax system, the Hall and Rabushka model is specified under Swedish conditions. Thereafter, six different scenarios are modeled and subsequently integrated into the core analysis.

3 Background

3.1 A tax system's structure and its ensuing distortions

There are an infinite number of ways to construct a tax system. Most developed countries today have a system with a graduated tax rate-structure where the nominal tax rate increases with higher income brackets. Thus, the marginal tax becomes heavily progressive with income. The rationale is that it creates the redistribution that many tax system works to achieve; through downward transfers, from higher to lower income brackets, people should in the end have more or less equal funds to spend. Unfortunately, fairness issues aside, such progressivity could provide negative effects (Blundell 2001).

With a marginal tax being heavily progressive with income, people may choose not to work as much as they want in effect of the extra cost it implies of putting in additional effort. As it is not the tax paid on average that is the most important for the individual in decision making, but the marginal tax – what you pay on the margin for each of your effort, i.e. – simplified – one hour or one unit of more work, the marginal tax is what will guide the individuals in their courses of action.¹

According to neoclassical theory, the individual is choosing between labor and leisure on the determination of fluctuating wages. However, there is a great deal of uncertainty about whether intertemporal models actually reflect how people behave (Esenwein & Gravelle 2004). Theory states that individuals that are expecting lower future wages would work hard today and less tomorrow, and the opposite for individuals anticipating higher wages tomorrow; they would work less today, waiting to put in more effort in the future. It is being argued, however, that the elasticity is quite small.

To be able to reach a certain quality of living an individual has to have a certain income, which's size obviously depends on ones individual needs and

¹ The effect of high marginal tax rates and the responsive behavior of individuals have been extensively analyzed in the literature, see for example Lucas & Rapping, 1969, Slemrod, 1998, Blundell & MacCurdy 1999, and Blundell 2001.

wants (Rabe and Bojs 2005). When prices and taxes increase, theory states that the individual should increase its labor supply to the level where the individual reach his or her ordinary or standard level of consumption. However, not always does the individual act accordingly. This because he or she perhaps individually values that such effort is not worth the ending pay off of maintaining the same level of quality of living.

When the system balances this *substitution* and *income effect*, it creates the neutrality that a tax system should achieve; however, it is a daunting task since individuals, being just that, possesses exclusive values on what is the correct level of e.g. labor vs. consumption. A tax system hence instead becomes a weighted average of such deems.

When marginal taxes in a country are judged to be too high, the substitution effect can be said to be too dominant which generates a severe lack of neutrality in the system. This was what initiated the big tax reform in Sweden of 1991.

It is not only individuals that are affected by marginal distortions; the marginal tax determines capital behavior too. However, today capital taxation is more concerned for at an absolute level and with respect to how many levels it is levied; not many modern economies apply marginal tax schemes anymore for capital and capital income; they are taxed using a flat rate. Concerning the levels though, the taxation could still be very distortionary.

Capital as such many argue is very lively. The powers of globalization inevitably draw capital to where it can provide the best returns and therefore it is important to act competitively in the way you strategize as a policy maker (Strand 1999). But, opinions go apart on whether this actually is the case. A recent investigation by the Taxation and Customs Union of the EU (Verrue 2004) states that although competitive taxation has always been a lively debate within the union, under the Code of Conduct on business taxation, differences between the members have been marginal. The Code of Conduct views tax measures as potentially harmful when they provide for a significantly lower effective level of taxation than those levels which generally apply in the Member State in question, i.e. aiming at eliminating "predatory practices" or "beggar-thy-neighbor" policies. However, although there is little evidence of e.g. a "race-to-the-bottom", as each country or Member State is sovereign in determining the size and composition of its budget, both with regards to expenditures and revenues, arguably some competition at the margin could not be disregarded for.

Other than directly affecting individuals and companies, a tax system may also be distorting in that it provides for example significant red-tape from complex legislation; huge efficiency problems are leading to severe administrative costs as well as anger and frustration with the public, and/or that it has too many loop holes making people and companies easily escape from tax; tax planning due to non-favorable rules are constantly breaking new boundaries as how to reach the most favorable levels.

3.2 Defining the flat tax

When defining the flat tax, a discussion for and against such paradigm can be found in the tensions between libertarians and classical welfare state defenders on their respective take on fairness. Defenders of limited government generally view state-mandated redistribution with mistrust. They claim today's system to be complex and inefficient together with it being (proportionally) unfair (Epstein 2002). Classical welfare defenders' stance is that high income individuals, being able to contribute more, should pay a larger share of the taxes and that downward transfers should provide every individual with similar funds to spend. Fairness or equality in the eyes of the libertarian is on the contrary only when you contribute in line with what you consume; redistribution is present in the behavior of the individual, not in terms of (post-) transfers. As in a recent article in Swedish newspaper Dagens Nyheter: "There is more tax from the people who are choosing dinner from guide Michelin and who are driving the most fuel consuming cars, and less from the ones driving something smaller, choosing a meal at the diner" (Dagens Nyheter Head Editorial 2005-08-01).

In today's tax systems – generically – graduated tax rates are applied at individual income where the nominal tax rate increases with higher income brackets, making, as already stated, the marginal tax heavily progressive with income. Comparing today's system with the case of applying a flat tax, a number of deductions can be made from such income. The higher the marginal tax rate, the more profitable the deductions from taxable income are. Both the graduated tax rates and the profitability of deductions often apply for both businesses and personal income, although in the majority of the cases the business tax is flat; in Sweden at 28 percent. Contrasting this, in a flat tax system all income is subject to the same tax rate regardless of the level of income.

Important to note is that a graduated tax rate is not the same as a progressive tax scheme. A tax system is progressive when it takes an increasing share of a taxpayers' income as the income rises. Progressivity in a graduated tax system is achieved by means of increasing marginal tax rates whereas progressivity in a flat tax system can be achieved by applying some personal allowance or general deduction.² The actual tax paid, as a part of the tax payers' income, is higher for people who earn more in both systems. Progressivity as such however, is not better or more efficient, but more of a political choice.

It is also important to distinguish the flat tax from the *uniform tax rate*. A flat tax system has the same tax-rate for all type of income regardless of the source, whereas a uniform tax rate may have a number of tax rates for different types of income. A flat tax system also typically involves the reformation of the entire tax system, while the introduction of a uniform tax rate replaces several tax brackets with one, but probably still continue to applying different tax rates for different types of income.

² The general deduction is the level of income an individual can earn without paying income tax.

3.3 Previous research

One of the more comprehensible and workable models of a flat tax system – and which this thesis relies on – was developed by Robert E. Hall and Alvin Rabushka in 1983 (later refined in 1985 and 1995). Their proposal, called “*The Flat Tax*”, is the most discussed flat tax model yet proposed and has been the starting point for many other flat tax proposals. The idea behind the model is to tax all income with the same rate and only once and as close to the income source as possible. Decisions for businesses would be made on the basis of pre-tax returns, not tax considerations, and the individual would be faced with more freedom in the absence of progressivity. Double taxation is eliminated and a 100 percent write-off of all investment spending in the first year is the only depreciation rule present in the model. Hence, the “The Flat Tax” belongs to the group of tax systems labeled consumption-based taxes.

Having analyzed USA specifically, Hall and Rabushka argue that the multiple federal personal tax brackets and the federal business tax could be replaced by a flat tax at 19 percent, while holding government revenue constant. Representing one of the chief reasons for such a low tax is the myriad of loop holes and favorable deductions that are possible within the current tax system. The exemptions and deductions make few, both individuals and businesses; pay all the taxes that *should* be paid in the current system.

Directly opposing today’s generic structure, the Flat Tax does not allow for any deductions, tax credits or exemptions at all. The only deduction left for individuals is a common personal allowance to still ensure the tax being progressive. For businesses, no deductions are available at all.³ Hence, it provides a consumption-based tax where all possible costs are deducted to finally reach a single tax base, which is considerably broadened. Together with the different loop holes being filled; in the end, Hall and Rabushka found that at 19 percent, the flat tax was able to yield the same tax revenue as the then present US federal tax.

In 1995, Atkinson presented a tax scheme called the *Basic Income/Flat tax* proposal. The basis of his proposal is the basic income⁴ (BI) that would replace all social security benefits and to be paid to all citizens without exceptions. For many people in Sweden, relying on a BI it would mean a net gain as opposed to today’s personal deduction that only benefits those with a taxable income⁵, and, especially those with high marginal taxes. Also, under Atkinson’s system, the unemployment trap would disappear since no benefits would be lost for a person returning to employment. This also means that tests and administration for distributing social benefits and other transfers would be needless. And at the same time, all income would be taxed from the first krona.

³ Beginning in gross revenue, cost of goods sold, wages and salaries and investments are subtracted to end at the business tax base. That procedure can be defined as a process of different deductions, however, this is not how each item and process should be perceived.

⁴ De facto money paid from the government every month, a basic income is an income unconditionally paid to all individuals on an individual basis, without means test or work requirement; it is guaranteed.

⁵ In Sweden many social security benefits are taxed in the same way as ordinary income.

Although Atkinson argues for a BI being able to be financed with a graduated tax scale, he concentrates his proposal on a flat tax on all income. Having concentrated his research at United Kingdom specifically, Atkinson argues that a tax at around 40 percent would be sufficient to finance a reasonable level of BI.

The groups who seem to be the winners of the BI/Flat tax system are especially those who do not qualify for social security benefits and persons voluntarily not employed. An interesting feature related to this is the system's neutralizing characteristics in terms of gender. Among those who would especially benefit from a BI/Flat tax system are e.g. married women not in work – Parker (1993) notes that women do badly out of the social security system and that a BI system would mitigate such inequality. And, of course, the same counts for men being unemployed with his partner working.

David F. Bradford's (1986, 1987), of Princeton University, *X-tax*, is a variant of the Hall and Rabushka proposal incorporating two parts; a business tax and a compensation tax. Under the X-tax, all businesses pay a single rate on the difference between proceeds from sales and purchases from other businesses, and payments to workers are deducted. When they are not regarded as businesses, individuals are taxed only under the compensation tax – the base of which consists of payments for labor services. The compensation tax, opposing the business tax, is levied at graduated rates, incorporating a zero bracket and some set of higher rates on larger amounts received, up to a top rate that is the same as the business tax rate. In addition, an earned income tax credit, as under the current U.S. system, could be available.

Today, in the U.S., financial transactions such as borrowing and lending issue and repurchase of stock, payment and receipt of dividends, do not enter the calculation of the taxable base. They do this under Bradford's system. However, since these transactions pose special problems and which would be too lengthy to explain, they are not presented here. What Bradford basically does is to adjust these parameters to raise the needed revenue and achieve the desired degree of progressivity of the system. In his proposal he suggests, for the U.S., a business tax rate at 28-30 percent, which would also be the top rate of compensation tax. If neglecting the deductions of payments to workers, the business tax component of Bradford's system constitutes a value-added tax of the consumption type as in the Hall and Rabushka case, implemented by the subtraction method.⁶

Although not included in the concept of a flat tax *per se*, two other proposals than the Hall and Rabushka model, also relying on switching to a

⁶ A value-added tax of the subtraction type is essentially equivalent to a value-added tax of the *invoice-and-credit type*. Under the invoice-and-credit method, the selling company is paying a tax on all of its sales, noting the amount of tax on the sales invoice. On the other side, a taxable firm making a purchase, it is allowed a credit against tax liability of the amount of tax shown on the invoice. This translates into the effect that a sale from one business to another gives rise to simultaneous payment of tax by the seller and equal credit against tax for the buyer. Hence, there is no net tax paid to the government until the point of sale to a buyer other than a taxable firm, generally the public (see Bradford, 1987, for more thorough discussion).

consumption tax base, is worthwhile mentioning; (1) the *value added tax* and (2) the *national retail sales tax* (Esenwein & Gravelle 2004).

Analyzing USA specifically, Esenwein & Gravelle (2004) shows that although much of the recent proposals to the American congress are referred to as “flat taxes,” most proposals actually go much further than only adopting a flat-rate tax structure; they would change the entire tax base from income to consumption. More recently, they indicate, the President has pointed toward some interest in a more fundamental tax reform, specifically referring to a national retail sales tax.

In Sweden and in other developed nations, a VAT is applied in combination with income taxes. The VAT does not replace income taxes, but rather finance a higher level of government spending – Esenwein & Gravelle (2004), working for the Finance Division of the government of the United States, obviously, in contrast, looks at a fully fledged replacement. Also, as they indicate, this is an important sub-national tax in the United States.

As an individual has two options with respect to his income; it can be consumed or saved, it translates into, by definition, that income must equal consumption plus saving, a relationship that helps to understand how a consumption-based tax might be levied at the individual level. Every individual would add up all his income as is done under today’s system but would then add net borrowing (subtract out the net saving (saving minus borrowing)). The result would produce a tax based on consumption at the individual level. The alternative is to collect the tax at the retail level as a retail sales tax on final consumption.⁷ Or it could be collected all along the value chain in the form of a VAT. With the VAT, firms pay tax on gross receipts less purchases of materials, goods for resale and capital to be used in the business. A VAT can be implemented using either a credit-invoice method or a subtraction method (Esenwein & Gravelle 2004). Because consumption is smaller than income a comprehensive consumption tax would require higher tax rates than a comprehensive income tax to raise the same revenue, although with a low savings rate, the bases (and thus tax rates) are very close (independently of the point or form of collection a consumption tax is ultimately paid by the individual consumer).

Contrasting the Hall and Rabushka proposal which is said to minimize distortions at the level of the individual’s choice between work and leisure, a sole consumption tax could still be distortionary. Under either tax, income or consumption based, the price of leisure is reduced relative to the consumption an individual could finance with an extra hour of labor. However, there are differences and advantages talking in favor for a consumption base tax. While an income tax distorts the choice between present and future consumption (read saving), reducing the resources an individual will have available for consumption in the future (hence raising the price of future consumption relative to the price of present consumption), a tax on consumption is neutral from this perspective.

⁷ Referring to Esenwein & Gravelle (2004), in theory, a retail sales tax exempts the sale of intermediate goods including capital goods to be used in a business.

The relative price of future consumption in terms of present consumption is the same as if there were no taxes (Esenwien & Gravelle 2004). However, it is still ambiguous whether adopting a consumption tax may increase overall economic efficiency. As already stated, under a consumption tax which yields revenue equal to an income tax, the tax rates would have to be higher. This in absolute terms would then increase the distortion when choosing between work and leisure. However, according to Esenwien and Gravelle (2004), many economists have argued that a consumption tax is superior in achieving economic efficiency because of the elimination of the distortion between present and future consumption. Simulated outcomes of inter-temporal models, they argue, virtually always predict a gain in efficiency from the shift from flat rate income to flat rate consumption taxes.

3.4 Swedish applications

There are a number of proposals to a Swedish variant of the flat tax. These have all been arguing for a flat tax introduction, but have, as stated in the introduction, only been versions of a single tax rate rather than a true flat tax.

Swedish Employers' Confederation 1998

The most ambitious proposal yet is the reform package proposed by the Swedish Employers' Confederation SAF (Herin *et al.* 1998). Their plan calls for a flat tax combined with the removal of payroll taxes together with the introduction of a personal basic security account with existing payroll taxes being transformed into salary. The proposal suggests a flat tax at 30 percent of income after payments to the basic security account with 20 percent of gross salary, but not more than 50,000 SEK, and after a personal deduction of 30,000 SEK. Such method would yield a tax decrease of 320 billion SEK and a decrease in transfers of 340 billion. The plan also calls for removal of double taxation of dividends and the abolishment of tax on capital gains for individuals.

As in most applications of a flat tax system, the (re-)structure of the social security part is elementary due to its vast part of government spending. The SAF plan spends considerable effort in structuring a new approach to this. The personal basic security account laid out would be used to cover for health, unemployment and parents insurance, welfare benefits and child allowance. Health care would still be covered by the municipality. Looking at 1998 specifically, the SAF proposal would reduce the tax burden to 34 percent from 54 percent of GDP, representing a considerable decrease.

Looking at capital, for capital income, assuming a market's rate of return of 4.5 percent, marginal cost of capital in real terms calculated using 1998's tax regulation was 8.2 percent for the corporate sector. Applying the conditions of the proposal, a minimum return would instead be 6.3 percent implying a tax wedge of 40 percent opposed to 1998's 82 percent – demonstrating strong incentives both to start new companies and making new investments. For the

financing of the reform, together with a simplification of the system the authors expect strong dynamic effects to come about from such change in incentives.

TCO and the Federation of Private Enterprises 1998

In the same year as the proposal by the Swedish Employer's Confederation was presented, the civil servant union TCO and the Swedish Federation of Private Enterprises jointly presented its flat tax proposal transforming the current tax system in two steps:

Firstly, a return to the 1991 reform's grounding principle saying that the municipal tax and the marginal tax cannot be higher than 30 and 50 percent respectively was suggested. Focusing here on improving the conditions for low- and middle income individuals, a general deduction of 30,000 SEK⁸ was proposed. While the lowering of the marginal tax was motivated in the proposal by the rationale of pure efficiency, the higher deduction found its rationale in fairness solely (though also implying efficiency in the long run). Together with the above, in the first step, social security fees or payroll taxes were suggested to be lowered to four percent, being financed by lowering investment and employment support to the business community of 20 billion SEK.

In the second step – a flat tax was introduced. Through the deduction, progressivity was to be reached in line with research above. The central government tax should be excluded which corresponds exactly, by paying municipality tax solely, to a flat tax. Here, in the second step, also, the general deduction was to be increased by 10,000 to 40,000 SEK.

The financing of the proposal relies both on redistribution and dynamic effects generated by the new system. In the first step, a loss of revenue of 40 billion SEK was estimated relying on public figures – this being financed by reintroducing VAT at 25 percent, lowering supports by municipality to businesses and child care, and through decreased supports for housing. In the second step an additional 33 billion was estimated to be lost. Relying on an estimated surplus in 2001's public finances together with a discussion with respect to dynamic effects such as lower unemployment in effect of the new system, the shortage was to be financed.

Swedish Employers' Confederation 2000

In 2000, Gunnar Du Rietz and Lars-Olov Jacobsson of the Swedish Employers' Confederation published an adjusted version of a Swedish flat tax reform following the federation's proposal two years earlier.

The Du Rietz and Jacobsson tax scheme relies mainly on two features: Firstly, they argue for a personal deduction of 50,000 SEK to make low income earners able to live off their salary without transfers. However, as the analysis proceeds they find that a more reasonable level is to move from 50,000 to 30,000, since large deductions are on aggregate very costly.

⁸ At the time of writing, one Swedish krona is worth 0.1195USD.

A problem with personal deductions is that low income earners already have a higher deduction today than high income earners. The deduction in 2003 was 25,900 SEK for incomes between 104,900 and 120,200 SEK and it then decreases to 11,400 SEK at an income at, or above, 264,300 SEK. To overcome this problem, the authors discuss the possibility of introducing an EITC (Earned Income Tax Credit) at levels around 20,000 SEK. However, due to the negative marginal effects of an EITC, it will be hard to phase out at higher income levels, something the authors feel would be necessary since the combination of the current personal deduction and an EITC would, otherwise, cost too much. The other major feature of the Du Rietz and Jacobsson proposal is a limit on payroll taxes which would remove all parts of the tax that does not correspond to a specific benefit in the social security system.

Du Rietz and Jacobsson do not cover the taxation of businesses and basically only argues for a uniform income tax rate. However, an explicit tax rate is actually not presented but a marginal tax weighted average that would decrease from 39.9 percent to 31.0 percent. Total costs for the reform are 87 billions SEK and the financing is made by reducing spending on transfers in the social security system and by relying on various dynamic effects.

The Federation of Private Enterprises 2001

In 2001, the latest serious flat tax proposal was introduced, this time by the Federation of Private Enterprises (Juth 2001) alone. The proposal shares much of the characteristics of the reforms previously introduced; however, since it deviates in some perspective, it is worth presenting. The system suggests a flat tax at 30 percent for all income; labor, capital, profits, and transfers. It is presented as a 10 year step-by step plan.

Taxation of labor is suggested as follows. The current central government tax is excluded implying a proportional tax (see the federation's 1998 proposal). The municipality hence still has some power changing the tax levels; the system though suggests the central government to take half of the revenues from the new income tax scheme. The general deduction is increased to 50,000 SEK in two steps, resulting in the effects presented earlier; e.g. employment and liquidity traps is thought to disappear with a lowered reservation wage.

Payroll taxes are excluded on the part of the taxes that are directly connected to benefits. The rest is transferred into employer's contribution. These 17 percent (total payroll taxes representing 33 percent) will be deductible employer's contribution at a maximum of 5 base amounts⁹. In addition, the employer's contribution for the pensions scheme is included which is seven percent at an unchanged roof or maximum of 7.5 base amounts. The lowering of the payroll taxes is exchanged against higher wages with the objective that the wage should be as high as the total employment cost for the employer. This will, according to the authors, increase the transparency of the system, and for which it is developed, it enhances the base for which an income tax can be extracted.

⁹ One base amount in 2001 was 36 900 SEK.

By summarizing, the effects on the changes of taxation of labor will lead to a more worthwhile situation for labor in effect of the absence of marginal taxes and through the lowered reservation wage.

Capital and capital income would be taxed as follows. Firstly, an exclusion of gift and estate taxes is suggested (excluded effective December 2004) – this will according to the proposal be advantageous in stimulating entrepreneurial activity and for the development of small and medium enterprises. An elimination of the double taxation on dividends and the taxation of realization profits at the household level are also suggested. This will, according to the authors, increase the supply of risk capital, important at the level of young growth companies. Venture capital is favored in that the tripled taxation on returns is eliminated. All in all, a better environment, according to the authors, for companies to be able to grow in.

The effects of the proposal is that disposable income for households will increase to 250 billion SEK, the tax burden will decrease by 10 percentage points from 51 to 41 (on the basis of the year of the proposal), that is, downward to the levels of the EU. Financing the proposal is done by various savings in the public budget and by relying on dynamic effects in light of the changes above, totally reaching a 216 billion SEK over a 10 year period, balancing the 215 billion in tax reduction which would be the result to the above.

3.5 How to evaluate tax systems

When evaluating a tax system or comparing two or more, the main criterias that it shall achieve independently of its form are: (1) efficiency, (2) fairness, and (3) simplicity (Clemens & Emes 2001). Below, using these criteria, the flat tax is compared with a graduated tax system such as the current system in Sweden.

Efficiency

As seen in the introduction, taxes are by their very nature distorting. By minimizing these distortions while extracting the tax revenue needed, efficiency is inevitably reached. Taxes shift individuals' and corporations' consumption behavior which make them act in a way which would not be the case in the absence of the tax – therefore the tax brings with it a societal cost. In a graduated tax system, generally speaking, this cost increases with the tax on average and in marginal terms (Larsson and Mitelman 1998). The Flat Tax, as illustrated, does by introducing taxes at proportional levels remove the marginal distortions, however, considering the levels as such, the effects are still ambiguous; determined case by case.

Fairness

Evaluating a tax system based on equity, or fairness, is difficult since it tends to be a matter of subjective judgment. But with a departure in the theory of

horizontal- and vertical equity (Emes and Clemes 2001), a (more) objective analysis can be conducted.

Horizontal equity refers to the fact that individuals with similar income and faced with similar circumstances, should bear the same tax burden and that income from different sources, but of the same size, must be taxed equally. Vertical equity is a far more politicized term. It requires individuals to increase their share tax paid to rise with income. If decreasing marginal utility is true for income, a high income earner can pay a higher share of his or her income in tax than a low income earner with less utility loss.

Looking at Sweden specifically, it is quite easy to find that horizontal equity does not hold in the current system. For example, capital gains are taxed at 30 percent whereas wage taxes can be close to 60 percent. And dividends are put through double taxation for individuals but not for businesses (Rabe and Bojs 2005). In a flat tax system, on the contrary, all income is taxed once and at the same rate. This ensures that full horizontal equity is reached. Turning to vertical equity, it can be found in terms of wages. Almost all other taxes are proportional within the Swedish tax code.¹⁰ However, vertical equity is accomplished mainly by increasing marginal tax. As previously stated, unfortunately, high and increasing marginal taxes have been found to have very negative effects on economic growth; it could lower labor supply, and has proven to reduce social welfare (Emes and Clemes 2001). Disincentives to work, save and invest are the price for vertical equity in a tax system with graduated high marginal taxes.

In a flat tax system, vertical equity is achieved without any of the damaging effects on the economy found in the graduated system. By allowing a personal deduction, the proportion of income that is paid in tax is increasing with increasing income. No negative effects of a rising marginal tax are evident. The average tax is however rising with income but, still, it has no effects on individuals' and companies' courses of action (Emes and Clemes 2001).

Simplicity

A tax system has to be easy to understand and to comply with. Actions and consequences have to be intuitive and foreseeable. Most modern states have tax systems with an almost infinite number of exceptions, amendments, tax credits and special deductions added to them – many of them as a result of significant lobbying from special interest groups. Sweden is no exception here. It is difficult even for a professionally trained accountant to understand all parts of the tax codes. And a number of new exceptions and changes are made every year. However, for most taxpayers filing their tax returns, it is a matter of signing a pre-printed form with everything added up in advance by the Swedish Tax Agency. In fact, if no changes are made to the pre-printed form, signing is redundant; today it is even possible to file the tax return via e-mail or SMS.

¹⁰ The ceiling on the property tax is determined partly on income.

The complexity of the Swedish tax system is no longer filling out the forms, but the very large number of complex, ever changing tax codes that lie behind it. Still, very few ordinary workers are able to predict with any certainty how much they would keep in case of a pay raise, or what their total tax paid would be during any given year. The complexity of the system makes lawyers and CPAs a very large part of the tax system. And, anyone who cannot afford a lawyer stands the risk of missing very valuable special deductions. Looking at the USA, around 500 000 professionals get their salary from helping people cope, or take advantage of, the tax code (Hall and Rabushka 1995). Many flat tax proposals make the tax code comparably vastly simplified with the flat tax proposal by Hall and Rabushka as the most prominent example of such simplification up to date. The code itself is very easy to understand and follow regardless of the size or type of business or individual transaction. The simplification of the tax code, enhancing efficiency, is perhaps the Flat Tax's greatest contribution.

4 The Hall and Rabushka proposal

The Hall and Rabushka Flat Tax reform was first introduced by Robert E. Hall and Alvin Rabushka of the Hoover Institution at Stanford University in the Wall Street Journal on December 10, 1981. Since then, the model have been expanded and refined by the authors in the books "Low tax, Simple Tax, Flat tax" (1983) and "The Flat Tax" (1985, 1995).

The basic idea of the Flat Tax is to tax consumption, not income or investments. As consumption equals income minus investments ($C=Y-I$), a consumption tax, such as the Flat Tax, will tax income minus savings. This means that people are taxed only on what they extract from the economy, not what they contribute to it. A system that taxes income, such as for example the U.S. tax system, hence taxes consumption and investments (Hall and Rabushka 1996). Taxing only consumption could be achieved with other forms of consumptions based tax models such as the national sales tax or value-added tax, but Hall and Rabushka argue that such methods would not create the tax exemption specifically needed for low-income individuals (Emes and Clemens 2001). A straight value-added tax would not create the progressivity needed, Hall and Rabushka argue.

4.1 Basic principles

The Hall and Rabushka Flat Tax rests on a number of basic principles. Firstly, the Flat Tax is based on a single rate of taxation for all sorts of income regardless of the source. This means that income such as salaries, wages and pensions will be taxed uniformly at the same level as income from businesses. It will make the shifting of income from one source to another futile since there are

no tax advantages to gain from such transition. The Flat Tax is source neutral.¹¹ Secondly, all income will be classified as either wages or business income. The two income classes will cover one hundred percent of all income and make it virtually impossible to avoid or evade tax by defining it creatively. Thirdly, income is to be taxed only once. By its very nature, double taxation on dividends is hence not part of the Flat Tax. This also means that no tax will be collected on revenue from interest. Finally, income will be taxed as close to the source as possible. Closeness to the source is important because it makes evasion of tax by not declaring it at the destination impossible and it facilitates collection of taxes by reducing administration.

The Flat Tax consists of two parts, (1) the wages and salaries tax and (2) the business tax; combined into an integrated system. The individual wage tax is for wages only, and the business tax is essentially a cash-flow tax.

When analyzing the U.S. specifically, Hall and Rabushka argue that the multiple federal personal tax brackets and the federal corporate tax could be replaced by a single 19 percent tax rate, holding government revenue constant.

4.2 The individual wage tax

As one of the two parts of the Flat Tax, the individual wage tax would tax the income that employers pay their employees. This is defined as actual payments of wages, salaries or pensions to the employee. No tax is paid on pension contributions or other fringe benefits that are not part of an employees' salary. Tax on pensions is paid when the retired worker receives his or her money, not when it is set aside by the employer. Fringe benefits are tax free for the employee but not tax deductible for the employer. If a person decides to make voluntary contributions to a pension plan of their own, no tax is paid until the money is taken out of the savings plan.

To make the income tax progressive a personal allowance is allowed. The size of the allowance is 16,500 USD for married filing jointly, 9,500 USD for a single person and 14,000 USD for a single head of household. Additionally, another 4,500 USD is deducted from income for each dependant. A family of four would deduct 25,500 USD in 1996 and the allowance rises with cost of living.

Apart from the personal allowance no other deduction is allowed. No deduction can be made for mortgage interest, charitable contributions or other expenses today tax deductible.

For 80 percent of all taxpayers the individual wage tax will be the only tax they need to pay (Hall and Rabushka, 1996). The remaining 20 percent will also have to file business tax. These 20 percent includes anyone who is self-employed, have a small firm beside regular work, or pays expenses directly when making a living.

¹¹ This is however only true if income is higher than the personal allowance. Otherwise a move from business income to wages would entail a tax brake.

Of central importance in the Flat Tax is the reduced administration. Hall and Rabushka illustrates this with there own taxation form where the calculations steps can be easily followed. The idea is that the tax return form should fit on a postcard, even for multinational companies, which it does.

4.3 The business tax

The second taxation form designed by Hall and Rabushka is for the business tax. Regardless of the size or field of business, all businesses will use the very same tax form. The figures are taken straight from the business accounting.

The business tax is not just for corporations but for all income that is not filed under the individual wages tax. Hall and Rabushka write that the purpose of the business tax is not to tax businesses and corporations but to tax their owners at the source of their income. Basically, they say, “people pay taxes, not businesses” (Hall and Rabushka 1995).

Since a single tax rate is used for business income instead of having income from corporations taxed at the individual’s marginal tax, which vary with income, it is far more practical to collect the tax at the source, i.e. the business, instead of at the destination, that is, the individual.

A business will pay tax on all income that has been generated during the year with deductions for the amount that the firm has paid its employees and suppliers. The base for the business tax is:

Total revenue from sales of goods and services,
less
Purchases of inputs from other firms,
less
Wages, salaries and pensions paid to workers,
less
Purchases of plant and equipment.

The total revenue includes all income the business has had but not financial income. The first of the three allowable costs are the costs of all the goods, services and materials that were bought for generating the product that the business sells or provides. Tax has already been paid once for these items by the seller. The second allowable cost is for all wages, salaries and pensions that have been paid to employees. However, salaries to owners, or others, that earn less than they contribute are not deductible. Taxes on salaries and pensions will be paid by employees and former employees. The last allowable cost is expenses for capital equipments, buildings and land. This means that there is a full write-off the first year and that all investments are expensed. There is no principle difference between buying a 20 USD screwdriver or a 200 million USD pulp and paper machine. Both will be fully deductible the first year. Equipment sold will be an income for the business.

Not deductible under the Flat Tax, but today in the U.S., are for example interest and fringe benefits. Contributions to social security will not be deductible but considered a fringe benefit. Benefits taken out of the social security system will in return be tax free for the receiver.

If taxable income, calculated accordingly, is positive, a 19 percent tax is due. If the taxable income for some reason is negative, no tax should be paid that year. However, the business will not receive any cash from the government.

Taxable income could be negative for example during a start up phase or a period with intense growth when large investments have been necessary. Since all investments are immediately written-off rather than being depreciated for up to 40 years or more this will not be uncommon. Any negative taxable income will be carried forward to the next year with a positive taxable income, and tax will be paid on the difference. Should the balance still be negative, the remaining amount will continue to be carried forward. The negative tax balance earns the market interest rate and there is no limit on the number of years or the size of the deficit a company can have.

Many banks and other financial institutions have interest as their major source of income. In the Flat Tax, interest, rents and other capital income are not taxable. A person might deposit her salary on an account that yields no interest but at the same time the bank provides services to the customer by preparing statements, processing credit cards and providing automatic teller machines. On the banks tax form it would appear as if the bank had no income at all, just costs for staff and keeping the vault nice and shiny, and, hence, it would be operating at a loss every year. The price of the services provided to its customers is offset by the low, or zero, interest rate. Instead, the customer could have invested her money in treasury bills and paid cash for any services from the bank that s/he used. The income from those services would then be taxable income for the bank. In the Flat Tax system, the bank, or other financial institution, has to augment by the difference between the market interest rate and the actual rate paid for revenue from any service provided in connection with a financial transaction.

4.4 Critique

The Hall and Rabushka Flat Tax model has been given a lot of positive attention. A number of bills have been introduced in the U.S. Congress by members of both parties, and in 1996, Steve Forbes built his presidential campaign specifically around the Hall and Rabushka Flat Tax.¹² However, Hall and Rabushka's model has also been subject of much critique.

In "Fairness and Efficiency in the Flat Tax" (Hall *et al.* 1996), Robert Eisner is critical on a number of issues. Eisner does not believe that the Flat Tax holds up to the fairness principles of vertical or horizontal equity stipulated

¹² No such bill has however received an actual floor vote (Esenwein and Gravel 2004).

by Hall and Rabushka, nor that it will lead to any grater efficiency. While the Flat Tax eliminates many distortions, it will also bring some new.

Using adjusted gross income – AGI – figures from 1993 from the IRS, Eisner spends considerable effort in recalculating the Flat Tax for individuals’ wage and business income and comes up with a different distributional set. He shows that low income earners would not benefit in total from the Flat Tax. In fact they would pay more dollars in tax than with the system in place at the time. High income earners, with more than USD 100,000 AGI, would get a large tax cut. This is because consumption is a smaller part of income as income increases.¹³ Much of the tax burden is shifted away from the income tax to the business tax, which is regressive, making the total taxes for high income earner actually regressive. Regarding horizontal equity, Eisner argues that big savers pay less tax than small savers. Since capital gains are tax free, a household earning USD 100,000 in dividends and interest rates pays no taxes where as a household earning USD 100,000 in wages would pay USD 19,000 in tax leaving USD 81,000 to spend.

Eisner also finds that prices would rise with up to 4.68 percent with the Flat Tax and that is possible that it will propagate through the economy and amplify if monetary policy cannot reduce the inflation. The Flat Tax will not vary with the business cycles and act as a stabilizer since consumption falls less than investment and income when the economy slows. At the same time during a boom tax receipts grows less than income since investment is fully deductible. The immediate expensing of investment will also facilitate the investment in projects that might have a high social cost, Eisner continues.

Investment in housing would also be discouraged with a Flat Tax. Since interest no longer is deducible cost of living will go up. Eisner means that the lowered interest rates due to the elimination of taxes on interest are exaggerated by Hall and Rabushka and that the compensation only will cover parts of the increased cost. At the same time, Hall and Rabushka argue that the expensing of investments will stimulate investment and thus increase interest rates. That is, to Eisner, an impossible equation.

Hall and Rabushka claim that the lowered marginal tax will increase the labor supply but Eisner does not agree. First, the federal tax, which is the target for the Flat Tax, is only a small part of total taxes in the U.S. In fact, in 1993 the federal taxes were only 9.9 percent of GNI and total taxes were 42.0 percent. Second, adding all the taxes that are connected with employment marginal taxes are more likely to be 34 percent than 19 percent. In addition, tax on fringes benefits means that millions of American workers will have to finance their insurance by them self with loss of bargaining power as a result.

In “Report for Congress”, an internal but public US congress document, Esenwein and Gravel (2004) overviews some of the issues with consumption

¹³ Although Eisner does not agree that the Flat Tax is a true consumption tax, he points out that private savings is gross private domestic investment plus net foreign investment plus the government budget deficit. Hall and Rabushka state that private savings equals gross private domestic investment (Hall *et al.* 1996 pp. 46-47).

based taxes. They question the inter-temporal models that are used to evaluate tax outfall. As stated in the distortions previous section, there are reasons to believe that the models do not reflect how people actually behave. If the behavioral response is small to investment incentives, such as the use of rules-of-thumb when it comes to savings and work/leisure trade off, the gains will be small too. An increase in the savings rate may not be fully desirable since this means that less consumption will take place today. Also many of the potential gains from a flat tax could be achieved with a less comprehensive income tax reform. Esenwein and Gravel (2004) agree with Eisner that the Flat Tax would create a diversion from owner-occupied houses towards other business investments, but the magnitude of this is hard to appreciate.

Esenwein and Gravel (2004) also elaborate on the transition difficulties moving into a Flat Tax. With the increase in business taxes it would be necessary with a one time price inflation not to cause the economy to slow down. This would create large disruption and would be very hard to offset in a precise way with monetary policy. Changes in prices will be transferred to the stock market. If inflation offsets the increases in prices, assets will lose much of its buying power. If there is no inflation nominal prices remain the same but the value of a company's old capital would fall. And, if the company is financed via debt, the fall will be even larger. Also, but probably of trivial importance in the longer run, is that the entire occupation group of lawyers specializing in taxation will be out of work under the Hall and Rabushka system, Eisner states.

However, finalizing their critique, Esenwein and Gravel (2004) mention that there is no large scoop for underground economy to be reduced with the Flat Tax, the case is rather on the contrary; it will be even more profitable for firm to hide sales than before since tax is on income, not profit. Perhaps the lawyers will survive after all.

5 The Swedish tax system

5.1 The Swedish tax and transfer model

The Swedish tax and transfer model is characterized by heavy involvement by the government in the provision of social services. Many transfers are available in the system; transfers to the retired, compensation for short-term income loss and for fees associated with children and housing. Also, a great variety of services are provided in child-, elderly-, and health care (Strand 1999).

Comparing the Swedish transfers to its international counterparts, especially within the OECD, they are relatively generous; with the country paying the highest taxes proportionally among the OECD countries calculated on a gross basis, the transfers are absolute independently of the income and wealth position of the beneficiary (Strand 1999, SOU 2002:47 and OECD 2005). As a consequence, as the system has developed over time, a high tax level is

inevitably required to finance this above-average level of both government transfers and public consumption. However, Swedish people seem to be ignorant of the levels. Looking at the individuals exclusively, according to a recent study, fiscal illusion in Sweden is significant among the public (Sanandaji and Wallace 2003). On average, the Swedish public considerably underestimates the size of total income paid in taxes by the average worker. On average, results point at a tax of 40 percent while in reality total tax burden finally at 63 percent (Sanandaji and Wallace 2003 and Nordling *et al.* 2003). An individual earning 236,400 SEK pays 197,774 SEK in tax each year; out of this, 75,000 SEK is income tax and the remainder are pay roll taxes and different indirect taxes, i.e. consumption taxes such as VAT, utility, company- and real estate tax (Nordling *et al.* 2003).

Gradually, from the 1960s and onwards, the involvement of the government to uphold the welfare provision has kept increasing. The provisions from this time on became more and more generous. The share of public expenditures (relative to GDP) rose from 30 percent in 1960 to above 60 percent in 1980. Compared with its OECD counterparts, Sweden's tax and expenditures levels became increasingly high; resulting in levels relative to GDP of 25 basis point above the OECD average in 1980 (Strand 1999).

The actual increase in taxes however took place as from the first true tax reform of Sweden in 1947 (Rabe and Bojs 2005). As an effect, the marginal taxes – income wise – in the first wave went up to 87 percent. Even if wealth tax was controlled for, the marginal tax could increase to over 100 percent on capital gains, the same for operating income; income tax and employers contribution here reached 100 percent as well. This effect was however adjusted quickly but the total marginal burden on operating income could despite several adjustments still reach levels of 90 percent (Rabe and Bojs 2005).

Because of the high taxes, tax planning inevitably became very popular. Interest expenses were fully deductible, which meant that, at very high marginal tax rates, lending based consumption was very favorable. As the state – at the very high end – covered 87 percent of the interest through the deduction and the individual for the rest of it, a deduction mania became evident throughout the entire economy (Rabe and Bojs 2005). This created a big black sector and the moral to pay taxes decreased more and more as time went by. In the beginning of the 1980s, the first big reform was introduced as to take care of the problems. However, the reform soon lost its value.

With the objective of lowering the marginal taxes and the right for deductions – primarily for interest expenses – the new system launched in 1982 contained two parts: (1) one income tax for a base amount where full deductions were still possible, and (2), one other income tax for additional amounts where deductions were severely limited. At state tax level, deductions also remained. However, since the tax scales were not index adjusted the possibility of tax planning remained. And, in the aftermath of Swedish counterparts abandoning their current systems for a new paradigm (Rabe and Bojs 2005) – lowering taxes on great scale with fewer possibilities for deductions – all together, the Swedes

had to consider themselves again coping with another old-fashioned tax scheme. As a consequence, Sweden decided upon a new reform – the biggest in Sweden ever made up to date – launched in 1991.

The reform, which aimed at following other countries' example, lowered marginal taxes significantly as well as further lessened the possibilities for deductions. A shift in the tax base was evident when, as representing the reform's core, direct taxes had to stand away for the indirect taxes, such as the VAT.

Following the finance crisis from 1992 and onwards, Sweden though had to put strict guidelines on its transfers required getting the public finances under control. The tax scheme was therefore again modified, and soon to follow, a situation occurred where Sweden again was closer to the previous system prior to the 1991 reform (Larsson and Mitelman 1998).

5.2 Swedish taxes and their relative distribution

In 2003, Swedish public tax revenue was 1,405 billion SEK of which 436 billion was from labor (excluding social fees), 326 billion from consumption, and 114 from capital (Statistics Sweden 2005).

5.2.1 Labor

Four main different taxes constitute the taxes on labor: (1) central government income tax, (2) local government or municipal (state income) tax, (3) general payment to pensions, and finally, (4) payroll taxes (Nordling *et al.* 2003). Also, a fifth form of taxation is presented here; taxation of income from capital. Representing the core fairness stabilizer, a personal allowance or general deduction on income is allowed.

Central government income tax

Central government income tax was in 2003, 20 or 25 percent dependent on income. 20 percent was for a net salary in the range of 301-447,000 SEK; 25 percent for a net of 447,000 SEK and above. A poll tax of 200 SEK a year was in 2003 levied on all tax payers. For the year of 2003, government revenue generated by the central government tax income was 34.9 billion SEK (Sanandaji and Wallace 2003).

Local government income tax

Local government income tax includes a county tax and a funeral fee. Earlier a church fee was included but has recently been excluded. The local government tax, in 2003, varied in the range 28.9 to 33.7 percent, averaging at 32.36 (Nordling *et al.* 2003). For the year of 2003, the local government income tax contributed to government spending, a 335.1 billion SEK.

Central payment to pensions

The fully deductible central payment to pensions was introduced in 1998 replacing the, at that time current, public employers contribution. The rate in 2003 was seven percent. The payment to pensions is indeed much favorable; apart from the deductibility of 75 percent, the payment is almost covered by a full tax reduction (Nordling *et al.* 2003). The payment though is only valid on a net salary up to 300,000 SEK a year (Sanandaji and Wallace 2003).

Payroll taxes

Payroll taxes, or social security fees, are paid by the employer and have its origin in financing the social security system. Today the case is somewhat different and the fees have more characteristics of a general tax; the payroll taxes are mandatory following the OECD regulations bringing in compulsory finances to public institutions (Nordling *et al.* 2003). In 2003, the payroll taxes were 32.82 percent of the gross salary (for the self-employed 31.01 percent). Together with the employers' contribution for operating businesses, the pay roll taxes contributed in 2003 with 367.6 billion SEK to government spending (Sanandaji and Wallace 2003). Payroll taxes are introduced on every income from service, although the payer is not (formally) necessarily an employer (Nordling *et al.* 2003). Excluding non-legal persons, there is a limit from where the pay roll tax is introduced though; up till 999 SEK the employer is exempted from paying. For non-legal persons, the limit is set at 10,000 SEK.

Table 1. Direct taxes on labor income in 2003.

Tax	Percentage	Total government revenue, billion SEK
Local government income tax	32.36	335.1
Central government income tax	20/25	34.9
General payment to pensions	7	17.4
Payroll taxes	32.82/31.01	367.6

Source: Extracted from Sanandaji and Wallace (2003).

Income from non-trading partnership or sole trader

All non-trading partnerships or sole traders, hereafter referred to as operating businesses, that an individual conducts in Sweden is counted as income from service. Revenues generated by trading partnership are counted as income from service at the level of each owner (Nordling *et al.* 2003). In the taxation of operating businesses, the state does also, in addition to the central government income tax, require employer's contribution (Rabe and Bojs 2005). These fees represent the payroll taxes paid by corporations and was in 2003, 31.01 percent. The employer's contribution for operating business is allowed to be extracted from the declaration of income the year after they have been stated. The first year, a deduction corresponding to, at the highest, 25 percent of net income is allowed. This deduction is then later rolled over to the next year, being counted

against the fees in the same year. The purpose is to avoid the same income being taxed both by the income tax and by the fees (Nordling *et al.* 2003).

Personal allowances

The personal allowance or general deduction varies with different levels of income. Income at 57,800 SEK and below has a general deduction of 16,400 SEK. For a minority of the Swedes, the general deduction is “only” 11,400 SEK, this at levels above 264,300 SEK. The maximum is at 25,900 SEK a year at a yearly income of 104,900-120,200 – following this, the deduction falls gradually to the normal level of 11,400 SEK (Sanandaji and Wallace 2003).

Table 2. General allowances in 2003.

Taxable income, SEK	General allowance, SEK
Up to 57,800	16,400
57,900 – 104,800	16,500 – 25,800
104,900 – 120,200	25,900
120,300 – 264,200	25,900 – 11,500
From 264,300	11,400

Source: Nordling, et al. (2003)

The pensioned used to have the right to a special deduction; however, now removed it is compensated by the higher amount in pay out. This has lead to the pensioned being taxed, more or less, in the same way as workers (Nordling *et al.* 2003).

Individual's pension fee

For individuals, employers' contribution was introduced in 1993. Five years later these fees were named generic pension fees. For 2003, these were, as previously stated, seven percent, this at 8.07 base amounts – 330,063 SEK. In 1999, a temporary tax reduction of 1.2 percent for low income individuals was introduced and in 2003 this reduction was included as part of the general deduction.

Marginal tax rates

The effects of the above – turning to the marginal tax rates – made these in 2003 span between 27.18 to 57.36 percent (Nordling *et al.* 2003).

At 16,400 SEK, since the general deduction is the lower of the income, i.e. 0.423 in base amount, there is no tax paid on income below 16,400 SEK.¹⁴ Thereafter, a county tax, funeral fee and employers contribution – the former even on the tax free amount – are paid (Nordling *et al.* 2003). Total marginal tax in the interval was 33.54 percent.

Earning 57,800 SEK, the general deduction is increased by 20 percent on the income in the interval 57,889 SEK to 104,899 SEK. The effect of this

¹⁴ One base amount in 2003 was 38,600 SEK.

increase in deduction is that the marginal tax decrease to 27.07 percent. With the general deduction staying at the same level between 104 900 and 120 299 SEK, the marginal tax goes back to the former; that is 33.54 percent (Nordling *et al.* 2003).

At 120,300 SEK: with income between 120,300 and 264,200 SEK, the deduction is decreased by 10 percent leading to a marginal tax increase ending at 36.78 percent. The logic here is to extract the previous loss of income from the former interval (Nordling *et al.* 2003).

At 264,300 SEK, the marginal tax is decreased to 33.54 percent as a result of a decrease in the general deduction to the lowest level 11,400 SEK. At 301,100 SEK, the difference is taxed at 20 percent in central government tax. In connection to the other taxes, this lead to a big increase in marginal tax ending at 53.19 percent.

At 330,000 SEK: As income above 8.07 base amounts does not imply a burden by the pension fee of seven percent, the marginal tax now decreases to a 52.36 percent.

And finally, at 447,300 SEK, income above is taxed in addition to the above at 5 percent more, providing the highest marginal tax rate in Sweden of 2003: 57.36 percent.

Capital income tax

The tax on capital income was in 2003 30 percent (Nordling *et al.* 2003). A reduction of 30 percent is made on deficits at the tax on service, operating business and/or real estate tax. Above 100,000 SEK, the deduction is lowered to 21 percent. For the year of 2003, the capital income tax generated 11.2 billion SEK in government revenues (Nordling *et al.* 2003). Another type of capital income tax is the rate of return tax which is the tax on the pension fund's returns. Insurance companies, banks and asset managers pay this tax which was introduced in 1991 to make the taxation of different means of savings more equal in form (Nordling *et al.* 2003). For pension insurance the tax is 15 percent while capital insurance returns are taxed at 27 percent. The total assets in the pension funds at the end of 2002 – the 2003 base – was 1,756 billion SEK (Nordling *et al.* 2003). This base generated a 15.13 billion SEK to government spending (Statistics Sweden 2005).

Individual income calculation

As described, three different sources of individual income are present in the Swedish tax system: (1) income from service (i.e. salary and/or pensions), (2) income from operating business, and (3) income from capital. Following the above introduction to the tax on labor, displayed in Figure 1 is a description of how income for a generic individual is calculated step by step.

Figure 1. Individual income calculation.

1. Income from service is calculated, thereafter income from operating business where available,
2. General deductions such as deduction for pension saving, periodical support, deficit of operating business (where applicable), is extracted from income from service. Succeeding this, taxable income is now available.
3. Taxable income from service and operating business are put together, providing the total taxable income.
4. Succeeding this, deduction for the general pension of seven percent is made together with the personal allowance or general deduction. This generates the end taxable income.
5. Tax on income from capital is calculated separately.

Source: Nordling *et al.* (2003).

End taxable income in the figure above is taxed using the local government income tax. On income as stated, as a breaking point, from 284,300 SEK (301,000 SEK in taxable income) and above, central government income tax of 20 percent is also applied (Nordling *et al.* 2003). Introduced in 1999, the additional bracket at above 430,100 SEK (447,300 in taxable income) was launched into the Swedish system. Incomes at this level were now to be taxed at a 25 percent central income tax instead of the generic 20, as in the previous system. This increase in tax, the Defense-for-the-Weak tax, was said to be temporary, but has remained (Nordling *et al.* 2003).

5.2.2 Consumption

With a VAT at 25 percent, Sweden together with Denmark is the country within the EU with the highest tax – absolute wise – on general consumption (SOU 2002:47). Representing one of the biggest income sources for the state, the VAT including consumption by the public sector contributed in 2003 with 220.4 billion SEK to government spending. The public sector contributed with 48,291 billion, translating into a net sum of 172.1 billion SEK in VAT (Nordling *et al.* 2003). Deviating from 25 percent, some exceptions are present in the system (Sanandaji and Wallace 2003): VAT on books and newspapers are six percent and on food and hotels the rate is 12 percent. This generates an average weighted VAT of 21.5 percent (17.7 percent of total price) (Sanandaji and Wallace 2003). Foreign travel, including the travel within the country, is exempted from VAT (Nordling *et al.* 2003).

5.2.3 Corporations

Previously, the taxation of small businesses and trading partnerships as part of labor income was presented. For corporations, a separate system is applied.

The taxation of incorporated companies and economic associations was prior to the reform of 1991 considered exceptionally high (Nordling *et al.* 2003). The tax reached 52 percent excluding additional tax on dividends to the wage earner's investment funds. Deductions of significant size were (however) allowed,

and could at the most lead to an efficient tax of 20 percent. To reach this level though, investments in new tangible assets were required, and companies did follow. Although it was only a matter of an attempt to decrease tax, investments in tangible assets for this reason were very common (Nordling *et al.* 2003).

Reaching the same income levels as before, due to a broadening of the tax base, the 1991 tax reform resulted in a company tax of 30 percent (Nordling *et al.* 2003). New rules were introduced stating that the companies were allowed provisioning the profits corresponding to 30 percent of their own equity and 15 percent of total salaries (20 percent for sole traders).

Following the reform of the 1991, further developments took place in 1994. The tax was lowered from 30 to 28 percent and the possibility of provisions changed at the same time – replacing the earlier system, companies now were able to place 20 percent (25 for sole traders and partners of trading partnerships) of their profits in a periodic fund for the coming five years. The period was as time went by increased to six years and from 2002 and onwards the rate at which provisions were possible now reached 25 compared to earlier 20 for incorporated companies (30 percent for sole traders and partners of trading partnerships) (Nordling *et al.* 2003).

Double taxation

Also in 1994, following the shift of governmental power (to the social democratic party), double taxation of equity was reintroduced whereas received dividend was fully taxed at 30 percent (Nordling *et al.* 2003). Being exposed to international capital markets, corporations were said not to be affected by this change; by reintroducing the double taxation of equity it would not affect companies' capital cost, i.e. the exclusion of the double taxation did only affect the owners, not the corporations *per se*. However, as Nordling *et al.* (2003) points out: "It is possible that the logic makes sense for larger corporations being publicly traded, still, for private equity, the double taxation on capital is likely to carry negative effects".

Indeed, in 1996 the government changed the rules; taxation of dividend in private equity was exempted the high levels counted for public companies (Nordling *et al.* 2003). The basis for the rules was that the stocks acquiring cost and the difference between the salaries and 10 base amounts were to be multiplied by 70 percent of the reference rate. Within this range, the dividends were exempted from tax – everything else being taxed at ordinary 30 percent (Nordling *et al.* 2003). As a consequence though, the change to the better can still provide negative effects. Strand (1999) argues that although these changes are favorable, trying to take care of the problems it creates at the same time disincentives for smaller companies to grow bigger and go public. Also, Strand (1999) points out that, there are still some features of the double taxation which makes for example cross-mergers more difficult. As a result of more favorable taxation in the country of the partnering (read non-Swedish) firm, it has in some cases lead to a reallocation of headquarters.

Using their example of the asymmetry in double taxation, Nordling *et al.* (2003) present the following classic principle of corporate finance: Beginning in that there are mainly three ways to finance a company: (1) equity financing (own capital), (2) debt financing (venture or risk capital), and (3) through credit facilities with suppliers etc. – the last being however excluded in the following – they present the case for the favorable tax shield evident through debt financing. Looking at the remainder, there are differences in how the dividend should be treated tax wise. The dividend to the shareholders, being residual claimants (succeeding the more senior debt holders), are taxed twice; firstly in the company at 28 percent, and secondly at the time of the dividend at 30 percent as income from capital. The earnings that shall be provided to the debt holders is, however, not taxed. There is a tax shield evident stating that since the pay off to the debt holders is interest, it is deductible in the company's declaration. The effect is that one krona of the earnings before interest and taxes – EBIT – is reduced to $(1-0.28)*(1-0.30) = 0.504$ SEK, i.e. a tax of 49.6 percent. With more debt, if the krona would have been paid out as interest, it would only have been reduced to 0.70 through their capital income tax – a tax at 30 percent. Hence, a company can increase its value by increasing its debt.

Nordling *et al.* (2003) highlights the problem from a societal perspective showing on the true asymmetry; smaller companies are not able to lower their capital cost by issuing more debt as in the case of bigger corporations, hence there is favorable rules on behalf of larger corporations while smaller companies are misapprehended.

The 3:12 firms

Incorporated companies and economic associations owned by one individual or a few is called the *3:12 firms*. According to the directive, SOU 2002:47, the 3:12 firms face marginally more favorable rules than larger corporations albeit more complicated. The difference from larger corporations is that the smaller firms face a trade off in taxation in taking out profits as profits *per se* (read dividends) or as salary (Nordling *et al.* 2003). The 3:12 rules try to mitigate or balance such trade off. The rules state that an owner of a small business is not taxed – capital wise – on the share of the dividend extending the normal rate of return (Nordling *et al.* 2003).¹⁵ Determining the normal rate of return is done by departure in the nominal amount that the owner(s) has/have invested in the company. From this amount it can be enhanced 100 percent of the paid salary above 10 base amounts, though, not salary to owners. The normal rate of return is then calculated by taking this amount times the reference rate plus an additional five percent.

Nordling *et al.* (2003) argue, however, the often non-rationality of taking out profits as dividend instead of salary: Considering the efficient tax for equity dividend of 49.6 percent; if the individual running the business takes out the profits as salary s/he pays firstly a 31.01 percent in employers contribution and

¹⁵ Note from the above that part of the normal rate of return is levied from tax.

then later 32.36 in income tax which provides a sum of 48.37, a bit smaller than the efficient equity dividend tax. Considering moreover that the individual lives in a low tax county (ref. local government tax) and is not part of any religious community, the incentives are of course increased by such conditions. However, an individual running a business will anyway take out the first 115,000 SEK as salary to be able to take advantage of the lower salary interval, especially where the general deduction is increasing. Above that, income from service generates pension rights.

Ending the introduction to the corporate tax, totally it reached 53 billion SEK in governmental revenues for 2003 (Statistics Sweden 2005).

6 Model

Specifying the Hall and Rabushka Flat Tax under Swedish conditions, the year of inference – 2003 – is chosen based on that it represents the latest fiscal period up to date presenting reliable data. There is no other reason to why this specific period has been chosen.

The model relies on one core conjecture; *income neutrality* is assumed, i.e. tax revenues will be held constant, that is, the model is static in nature not introducing any potential dynamic effects part of the actual modeling, i.e. effects of e.g. individual's consumption behavior with respect to different tax levels. Such an assumption lies well within that no proposal to a Swedish tax reform should be introduced being based on dynamical effects; every reform presented should be able to be financed within the present budget (Larsson and Mitelman 1998).

Income held static is subjected to the different tax schemes. To see the effects of a Hall and Rabushka Flat Tax application, a comprehensive data set is needed. For this specific purpose, such data was ordered from Statistics Sweden.

6.1 Reconstructing the tax base

In the following, the current Swedish tax system is constructed as to reflect the proposal by Hall and Rabushka. It presents the case for the individual wage tax and business tax, summarizing by stating the model's constraint.

6.1.1 Individual wage tax

As seen from Hall and Rabushka, no deductions or other adjustments are allowed between the incomes received from the employer and the incomes that are taxed, apart from the standardized personal allowance. The size of the personal allowance is the independent factor in the calculations impending.

Due to differences in productivity, wages and general social systems between the U.S. and Sweden it is not useful to use the original personal allowances by Hall and Rabushka.

The variable wages and salaries include both small business income and a number of common deductions.

The wages are split into 32 different income classes depending on size. For each group a gross tax base is calculated from which the personal deduction is drawn. Note that only the single person allowance is used, not the joint and dependent allowance. This is due to the difficulty of calculating where to place children and the fact that joint taxation is not used in Sweden.¹⁶

For an income class, the incomes from small business are taken out of the wages and salary, where they are entered due to the fact that they are taxed under the ordinary income tax as mentioned earlier. From the new wages and salary the total amount of deductions are added back.

The single highest deduction is from interest rates. This calculation is then repeated for all income classes and a new total tax base is derived.

The reconstruction of the tax base is made using the following formula:

$$\sum \text{wages and salaries} - \text{income of small business} + \text{total deductions}$$

Table 3 shows the calculation of the new tax base as well as the distribution of income and the total deductions. The higher tax base in the zero income class is due to the fact that the deductions were larger than the taxable income.

Table 3. Income classes and the new tax base.

Income classes, 000s SEK	Individuals	Wages and salaries	Income of small business	Total deductions	Tax base
0	2,056,979	-	-	699,588,070	699,588,070
1-19	408,315	3,232,599,411	107,821,658	442,675,602	3,567,453,355
20-39	216,086	6,381,463,863	293,840,988	563,131,186	6,650,754,061
40-59	170,150	8,451,279,906	576,824,490	638,678,536	8,513,133,952
60-79	236,028	16,971,600,648	867,666,846	780,305,136	16,884,238,938
80-99	492,303	44,334,156,830	1,138,092,350	1,330,357,581	44,526,422,061
100-119	410,692	45,167,981,821	1,568,898,131	1,762,909,132	45,361,992,822
120-139	424,163	55,214,092,714	1,801,128,710	2,375,875,544	55,788,839,548
140-159	474,323	71,180,808,514	2,010,286,696	3,365,409,860	72,535,931,678
160-179	506,488	86,169,862,684	2,012,206,745	4,727,273,960	88,884,929,899
180-199	521,255	98,986,011,500	2,409,526,179	6,047,758,715	102,624,244,036
200-219	523,339	109,896,445,771	2,161,251,320	7,122,751,492	114,857,945,943
220-239	486,505	111,786,332,591	2,054,775,790	7,501,804,842	117,233,361,643
240-259	420,408	104,962,075,110	1,889,560,651	7,303,863,626	110,376,378,085
260-279	346,675	93,485,220,303	1,734,926,507	6,660,075,933	98,410,369,729
280-299	286,856	83,095,164,164	1,996,702,229	6,038,592,813	87,137,054,748
300-324	278,653	86,794,621,997	2,767,047,112	6,439,256,157	90,466,831,042
325-349	186,399	62,768,996,748	1,357,935,324	4,778,998,752	66,190,060,176

¹⁶ Joint taxation is only used when taxing wealth which is not taxed under the Flat Tax.

350-374	134,540	48,686,070,760	1,014,113,278	3,743,986,711	51,415,944,193
375-399	101,699	39,353,249,806	818,074,696	3,033,984,413	41,569,159,523
400-424	78,592	32,376,062,037	690,338,712	2,481,740,660	34,167,463,985
425-449	61,653	26,940,233,032	612,741,060	2,055,912,069	28,383,404,041
450-474	49,029	22,653,103,178	504,386,785	1,747,857,514	23,896,573,907
475-499	39,778	19,375,047,449	409,723,806	1,470,349,929	20,435,673,572
500-549	59,201	30,981,651,308	608,790,208	2,328,025,733	32,700,886,833
550-599	40,455	23,198,137,393	488,794,153	2,004,632,825	24,713,976,065
600-699	48,775	31,423,373,612	651,775,888	2,278,944,516	33,050,542,240
700-799	26,012	19,392,875,306	434,199,191	1,363,908,573	20,322,584,688
800-999	23,532	20,800,131,340	472,148,268	1,383,569,472	21,711,552,544
1000-1499	15,362	18,106,853,707	434,369,271	1,090,469,628	18,762,954,064
1500-1999	3,567	6,069,982,430	164,075,350	302,948,857	6,208,855,937
2000-	3,471	11,411,918,348	363,253,652	430,238,117	11,478,902,813
Sum	9,131,283	1,439,647,404,281	34,415,276,044	94,295,875,954	1,499,528,004,191

Source: Statistics Sweden.

As can be seen, the total tax base is 1,499.5 billion SEK with the Flat Tax deduction rules applied. The difference is not very large compared with the 2003 taxable income of 1,405.2 billion SEK when incomes from small business are taken out.

6.1.2 Business tax

The business tax is based on aggregated numbers for all incorporated businesses as collected and presented by Statistics Sweden. Following the Flat Tax, an aggregated revenue sheet is then calculated where income from small businesses is added, see Table 4. Wages include all cash salary paid to employees but not the mandatory pay roll tax of 32.82 percent since fringe benefits are non-deductible.¹⁷ Pay roll taxes are technically a tax on labor but often thought of as a business tax.¹⁸

Banks and financial institutions

As previously discussed, banks and other financial institutions pose a special problem since they to a large extent make their revenue from interest, and interest is not defined as a taxable income under the Flat Tax of Hall and Rabushka. The problem of correctly calculating their income and cost structure on an aggregated base hence posits a vast task. There are a number of ways to calculate an estimate for the tax income from the financial sector but the best proxy readily available is the Hall and Rabushka estimate of a 1.3 percent increase in taxable income from the financial sector.¹⁹ However, the model is not

¹⁷ Regulation regarding pay roll taxes is vast and complicated and there are a number of exemptions to the general 32.82 percent tax rate. However, for the purpose at hand here it is of minor importance.

¹⁸ For a thorough discussion see Sanadaji and Wallace (2003).

¹⁹ Hall and Rabushka find in their example that for the First National Bank of Rockey Mount in Virginia the taxable income with the Flat Tax is 1.296 percent higher than with the then current tax system in the US, given 35 percent business tax (Hall and Rabushka 1995:74). If this can be considered a general case also for a Swedish application can be discussed, but it is within any reasonable margin of error.

very sensitive to the tax incomes from the financial sector since it is fairly small given the overall span of tax income.

Data of the financial institutions' cost structure is not available in the same way as for other businesses and a comprehensive overview of the financial sector is beyond the scope of this paper. Although very important on a micro level, the sensitivity of taxes from financial institutions is as seen limited on the total tax revenue and hence the 1.3 percent rule-of-thumb can be considered in the calculations to be regarded within the margin of error. Using the Hall and Rabushka proxy, taxable income from business in the Swedish financial sector would increase to 11,649 million SEK from 11,500 million SEK.

Table 4. Businesses aggregated revenue sheet split on ordinary and financial firms (Statistics Sweden and Swedish Tax Agency 2005).

	Incorporated	Financial institutions	Small business	Business tax base
Gross revenue	5,057,645,000,000	N/A	N/A	N/A
Inputs	-3,644,497,000,000	N/A	N/A	N/A
Wages	-647,047,000,000	N/A	N/A	N/A
Plant and equipment	-302,103,000,000	N/A	N/A	N/A
Total allowable costs	-4,593,647,000,000	N/A	N/A	N/A
Taxable income	463,998,000,000	11,649,000,000	34,415,276,044	510,062,276,044

6.1.3 Constraint

To keep the Flat Tax' tax revenue neutral, the revenue needed is the same as what was actually paid in 2003 from the wage tax, business tax and capital gains taxes from individuals. However, the latter is not taxable under the Flat Tax. A model is created where the only input variable is the personal deduction allowed for individuals since that is the only factor not given as a function of anything else in the flat tax model. The size of the personal deduction is of great importance to the Flat Tax tax rate since large personal deductions are very expensive on an aggregated level. The size is also important for the progressivity of the Flat Tax. The progressivity is proportional to the deduction.

The constraint is thereby as follows:

$$\sum ((ntb_i - pa) \cdot ftr) + \sum (ntb_b \cdot ftr) : \sum ct = \sum ft$$

Where

ntb = new tax base
pa = personal allowance
ftr = Flat Tax tax rate
ct = current tax income
ft = Flat Tax tax income
i = individuals
b = business

6.2 Quality of model design

Reconstructing a graduated tax scheme, applying a Flat Tax system as the one by Hall and Rabushka certainly puts emphasis on some inventiveness. Getting as close as possible to the definition of Hall and Rabushka's specifications has somewhat been a daunting task, as in the case with the financial institutions. This specific problem does not however create any significant differences in results on a macro level, though, it might pose a flaw to the model specification in more detail. The reliability of the model must be considered good²⁰, however for construct validity it means that in repeated sessions others may reach different conclusions even if they are marginal; differences *per se* indeed represents a big problem.

7 Results

Applying the constraint, the individual wage tax and business tax are interconnected into the model so that the same tax rate in both systems will yield the same tax revenue of 513.9 billion which was the total tax revenue for the affected tax in 2003. Table 5 shows the 2003 tax system compared to the flat tax starting with a 30,000 SEK personal allowance. It is important to remember that all persons do not fully take advantage of their personal allowance since they have income smaller than the deduction.

With a deduction of 30,000 SEK the Flat Tax rate is 28.47 percent. Due to technical issues it is difficult to calculate the exact average tax rate in 2003 but Statistics Sweden makes it 32.6 percent, the Government claims it was 31.6 percent and a quick division with the number in the table yields 30.3 percent.²¹

Table 5. The tax system of 2003 vs. the Flat Tax.

	2003 tax system	Flat Tax
Income takers	9,131,283	9,131,283
Wages and salaries w/o SBI	1,405,232,128,237	1,405,232,128,237
Small business income	34,415,276,044	
Total current deductions		94,295,875,954
Flat Tax personal allowance per person		30,000
Taxable income	1,439,647,404,281	1,295,281,292,766
Tax rate	N/A	28.47%
Income tax revenue	435,726,770,475	368,737,405,477
Dividends and interest tax	10,079,874,908	

²⁰ As for other businesses than financial institutions, and for individuals, fortunately all tax returns are included in Statistics Sweden's statistical database. The quality of the statistics is very robust and as this database was programmed specifically for the purpose of this paper, it makes repetition for other periods reliable.

²¹ The differences are mostly due to different ways of calculating. Statistics Sweden has both wages and capital gains in the base whereas the Government calculates a mean of all municipalities and counties (which do not control for the number of tax payer in a certain municipality or county).

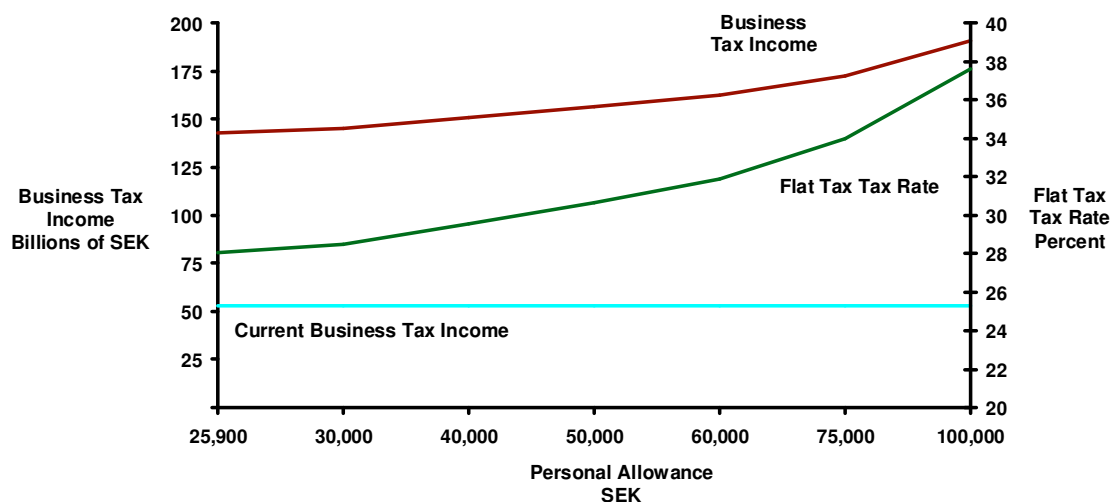
Realizations net gains tax	11,200,000,000	
Wealth tax	3,934,000,000	
Business tax	53,000,000,000	145,203,239,907
Total taxes	513,940,645,383	513,940,645,383

Table 6, paralleled shown as a figure, see Figure 2, demonstrates six different scenarios where the personal allowance has been allowed to vary in the interval 25,900 – 100,000 SEK. As the personal allowance is increased, the business tax increases with it.

Table 6. The Flat Tax and variety in personal allowance.

Personal allowance, SEK	Flat Tax tax rate, percent	Income tax, SEK	Business tax, SEK
25,900 ²²	28.04	370,902,812,337	143,037,833,046
30,000	28.47	368,737,405,477	145,203,239,907
40,000	29.53	363,343,015,264	150,597,630,119
50,000	30.66	357,548,043,060	156,392,602,323
60,000	31.86	351,460,211,470	162,480,433,913
75,000	33.81	341,478,493,695	172,462,151,688
100,000	37.42	323,098,699,540	190,841,945,843

Figure 2. Income from business under the Flat Tax with regards to the variety in personal allowance.



Following, in Table 7, the average flat tax with respect to the different income classes are presented.

²² 25,900 SEK was the highest personal basic deduction allowed in 2003.

Table 7. Average Flat Tax with respect to income classes.

Income Classes, 000s SEK	Current Average Tax, Percent	Difference in Tax, Percentage Points			Difference in Tax, Percent		
		30,000	60,000	100,000	30,000	60,000	100,000
0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-19	1,00	-1.00	-1.00	-1.00	-100.00	-100.00	-100.00
20-39	13,89	-13.17	-13.89	-13.89	-94.82	-100.00	-100.00
40-59	20,61	-9.21	-20.61	-20.61	-44.70	-100.00	-100.00
60-79	22,78	-6.25	-17.64	-22.78	-27.43	-77.45	-100.00
80-99	23,36	-4.33	-12.63	-23.36	-18.55	-54.09	-100.00
100-119	23,83	-3.09	-9.28	-20.29	-12.98	-38.94	-85.14
120-139	25,08	-3.11	-7.76	-16.11	-12.39	-30.93	-64.24
140-159	26,20	-3.32	-6.84	-13.25	-12.66	-26.12	-50.58
160-179	27,00	-3.40	-6.04	-10.91	-12.60	-22.37	-40.40
180-199	27,63	-3.50	-5.48	-9.22	-12.66	-19.84	-33.36
200-219	28,15	-3.58	-5.01	-7.79	-12.71	-17.79	-27.66
220-239	28,57	-3.64	-4.64	-6.68	-12.75	-16.25	-23.38
240-259	28,92	-3.71	-4.35	-5.76	-12.82	-15.03	-19.91
260-279	29,18	-3.72	-4.05	-4.94	-12.74	-13.90	-16.94
280-299	29,25	-3.59	-3.69	-4.15	-12.28	-12.60	-14.19
300-324	29,80	-3.96	-3.83	-3.91	-13.30	-12.87	-13.12
325-349	31,19	-5.13	-4.72	-4.31	-16.45	-15.13	-13.83
350-374	32,48	-6.25	-5.63	-4.85	-19.23	-17.32	-14.95
375-399	33,59	-7.21	-6.41	-5.33	-21.48	-19.09	-15.87
400-424	34,56	-8.06	-7.10	-5.75	-23.32	-20.55	-16.64
425-449	35,42	-8.80	-7.71	-6.13	-24.86	-21.78	-17.30
450-474	36,29	-9.57	-8.36	-6.55	-26.38	-23.03	-18.05
475-499	37,22	-10.41	-9.08	-7.08	-27.98	-24.40	-19.04
500-549	38,40	-11.48	-10.01	-7.76	-29.90	-26.06	-20.21
550-599	39,82	-12.75	-11.09	-8.53	-32.02	-27.86	-21.42
600-699	41,43	-14.23	-12.40	-9.54	-34.34	-29.93	-23.03
700-799	43,25	-15.88	-13.84	-10.63	-36.71	-32.01	-24.57
800-999	45,08	-17.54	-15.30	-11.72	-38.90	-33.93	-26.00
1,000-1,499	47,56	-19.79	-17.27	-13.21	-41.61	-36.31	-27.77
1,500-1,999	49,87	-21.89	-19.11	-14.61	-43.90	-38.33	-29.29
2,000-	52,19	-23.99	-20.92	-15.91	-45.95	-40.08	-30.48

8 Analysis

From the results above, both affirmative and negative outcomes of introducing the Hall and Rabushka Flat Tax to Sweden have been discovered.

Most noticeably is the shift in tax revenues from tax income from individuals to businesses, representing the 200 percentage increase in business tax following Hall and Rabushka's own modulations. This is demonstrated in Table 6.

On the sensitivity in tax level vs. personal allowance, at the highest levels of the latter, at 75,000 and 100,000 SEK, the tax rate is 33.81 and 37.42 percent respectively. This is not significantly higher than today's average municipal tax rate and with the 75,000 SEK allowance it is definitely lower than in some municipalities that have tax rates at over 34 percent. As several marginal taxes are removed, and at Swedish high marginal tax levels, a positive effect in labor supply is likely to be in place. This is in contrast to the critique to the model, which is governed towards the U.S. – considering its ambiguous effects of the removal of marginal taxation, in Sweden marginal taxes are significantly higher and the benefit would thus be greater.

The way taxes from businesses make up for the decrease of personal income tax is in line with theory, but as has been mentioned it poses special problems. Although Hall and Rabushka state that in the end we are all individuals paying tax and by that it should not matter if there is a business or an individual contributing the most, businesses and the economy as a whole would inevitably be faced with a number of troubles. The economy could easily slow down if there is no mechanism that mitigates the increase in business taxation.

Depending on the size of the personal allowance, the amount of money collected from business taxes are almost three times as high as with the current tax system. This would have a major impact on businesses profitability and hence stock prices if net present value of the cash flow is the underling method of valuation. Hall and Rabushka do not cover this fact at all in their work but it will doubtlessly have a major impact, not only on financial markets but the entire economy. This actualizes the claim of Epstein (2002) that flat tax schemes, or perhaps rather the transition to a flat tax scheme from any already set tax system, are more suitable for non developed economies where large valuation shifts might have lesser impact.

Regarding the business tax and its implication for the economy it is important to point out the differences between the U.S. economy and the Swedish. The Swedish economy is a small and open economy whereas the U.S. is obviously much larger but also much less open. It might be argued that the U.S. is not as sensitive as Sweden to foreign tax breaks and other more competitive tax schemes. Capital will not leave the U.S. to the same extent as it would

Sweden should both countries make the same changes in corporate and business taxation.

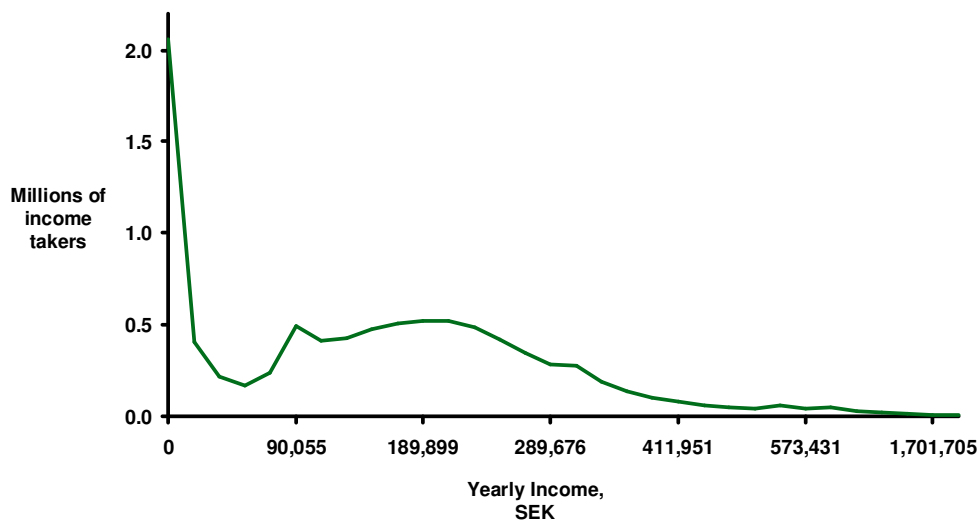
A suggested solution to the problem, as mentioned, is the one time price inflation discussed earlier but unfortunately monetary policy is considered to be hard to use as stabilizing instrument in cases as this with large price changes.

Also problematic are the *levels* for businesses *per se*. Despite the vast amount that the current Swedish tax system transfers, the business tax is still below the average tax for individuals. Company taxation is currently at 28 percent. Although the findings here are more far reaching than previous research only the first scenario with a Flat Tax at 28.04 percent, possibly also the second scenario, comply with this level. This is unfortunate.

The European Union states that no member state has any reason to be concerned with the competition as to capital taxation. Countries will not fight significantly, possibly only at the margin. Our scenarios however are nowhere favorable from this perspective. Taxation is not moving down at the margin, but only up; from current levels of 28 percent to 37.59 with the 100,000 SEK personal allowance, and this on a significantly larger taxable corporate profit. The only scenarios possible from the perspective of taxation are indeed the two first which suggests a tax of 28.04 and 28.47 percent respectively.

However, such distinct conclusions cannot be made without linking the discussion to the progressivity and hence the income distribution that the personal allowances would entail. Obviously there is a trade off between attracting capital and distributing the individual's income. This is however a matter of ideology and political choice, but grounded for below.

Figure 3. Income distribution in Sweden.



The income distribution effects are seemingly clear. Everybody gets a lower individual wage tax but the difference between the different income classes is noticeable. With a personal allowance of 30,000 SEK the mean tax reduction for incomes over 2 million is 23.99 percentage points compared with the tax reduction at incomes at 200,000 at only 3.58 percentage points.

As can be seen from Figure 3, the income distribution in Sweden is centered around 200,000 SEK and there is a large group, more than two million people, with no taxable income at all.

Figure 4 shows how the average tax is a function of income and the personal allowance. The Flat Tax 30,000 curve follows the current tax fairly well for low and mid income takers with salaries between 100,000 and 325,000. The Flat Tax reduces their tax with around thirteen percentage points where as high income takers receive a reduction of almost 50 percent. But when the personal allowance is increased to 100,000 SEK a heavier burden is placed on high income takers and low and mid income takers have significantly lower taxes compared with the 30,000 SEK and the 60,000 SEK allowance option.

A mid alternative with a 60,000 SEK personal allowance yields an average tax between the 30,000 and the 100,000 allowance.

Important to recognize is however that all income groups – if they pay tax at all which some income groups do not under the Flat Tax – have the same marginal tax but that redistribution takes place with the differentiated average tax.

Figure 4. Tax Distribution under the Flat tax.

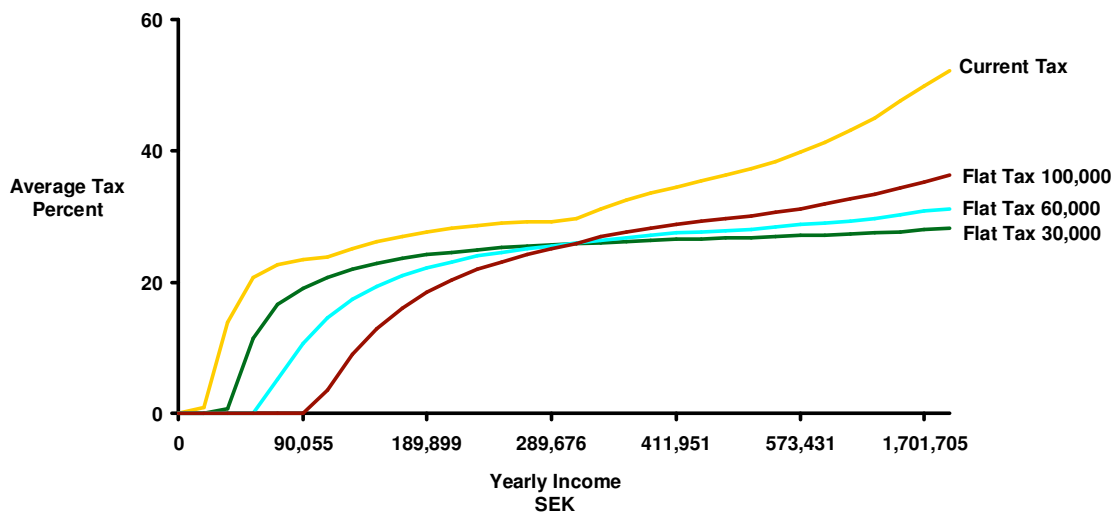
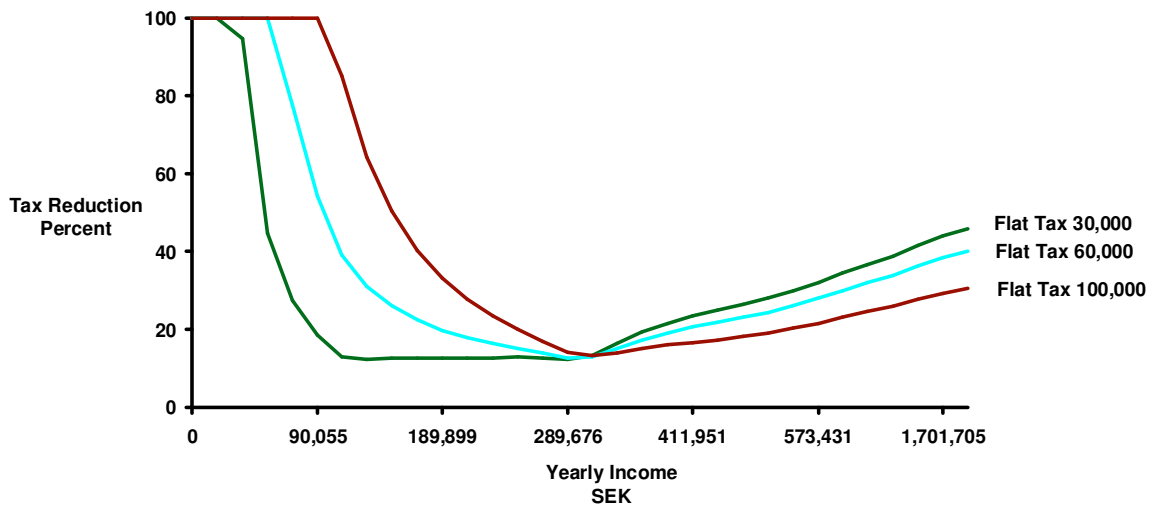


Figure 5 shows the relative tax reduction. By increasing the personal allowance from 30,000 to 100,000 the tax reduction for the highest income class is lowered from 45.95 percent to 30.48 percent. This is a significantly smaller reduction but

still a large decrease in tax obligations and a significantly higher disposable income for the individual. Recall that the Flat Tax system, as modeled here, does not affect the transfers in the Swedish welfare system. They are intact as the model is tax revenue neutral. With a change in the social security and other transfers there would be a tremendous scope for tax cuts for all tax payers.

Figure 5. Relative tax reduction under the Flat Tax compared to the current tax.



In our application no consideration has been taken to the vast number of other taxes that exists, such as the VAT or any special taxes on alcohol, tobacco and energy for example. This is neither due to their insignificance nor lack of distorting effects; the VAT was the single biggest state income source in 2003, as well as most economist agrees that the high tax on energy is harmful to the heavy industry throughout Sweden. It is just because they simply are not a part of the Flat Tax' grasp. The Flat Tax reforms taxation on income from work and business activity, nothing else.

Of interest is also how the Flat Tax applied on Sweden will affect the vertical and horizontal equity principles used when evaluating the validity of a tax system. Beginning in horizontal equity, that is that people with the same level of income and faced with similar circumstances should bear the same tax burden and that income from different sources should be taxed equally, the results do not differ much from the theoretical model. Since the vast flora of loopholes is being filled and deductions are abolished, it will no longer be possible to shelter income from taxation. This will definitely lead to higher horizontal equity. But there are other incomes under the Flat Tax that are tax free, such as the capitals gains income, and the critique laid out by Eisner is still valid, especially so considering the high and far reaching capital gains taxes currently present.

Regarding vertical equity, individuals with high incomes will still pay a larger share in tax than those with lesser income under the Flat Tax, although this is not as obvious when income rises. Since the reduction in tax is greater at the tails of the income distribution curve than in the middle, high income earners will benefit more than someone with a more average salary around 300,000 SEK. This is caused by the combination of the personal allowance and the fact that the lowered average tax affects a high income more than a lower. A person with a yearly income at 210,000 will pay an average tax of 20.37 percent whereas a person with a monthly salary of 525,000 will pay 30.64 percent if the personal allowance is set to 100,000 SEK. However, as can be seen in Figure 4 both of them have had, almost, the same relative reduction in tax, around 7.8 percent. But as the personal allowance rises, the vertical equity increases and the final amount of vertical equity will be a matter of political decision.

9 Conclusion

Earlier research on flat taxation in Sweden has chosen not to include business taxation as part of the modeling; businesses have predominantly been treated as exogenous to the proposals. Facing the above trade-off between attracting capital on the one hand and distributing income on the other, applying the Hall and Rabushka model to Sweden, this thesis has laid out the advantages but also the difficulties of applying the Flat Tax.

The major benefits of the Flat Tax for Sweden would be, as shown, reduced marginal taxes for all income takers, not only for high or low paid persons. The gain of giving both groups tax brakes should not be underestimated. People with lower incomes need a lower tax to better be able to live off their salary. And the most highly paid, also society's most productive workers according to theory, would no longer be exposed to work disincentives with increasing marginal taxes and their efforts on the marginal would pay off significantly better.

The perhaps largest problem with a flat tax is the large extra amount of tax that would be extracted from the business sector. Not only because this would put many businesses in the red, but also for the wide spread implications harshly lowered profits would have on the Swedish economy. The calculations made here show that the tax income from businesses would more than triple at certain levels of personal allowances. The more philosophical, although not wrong, approach that "businesses are owned by people" would probably find it difficult to dampen the negative cash flows and the valuation adjustments that would be sure to follow.

Leaving the business impact aside, we have shown that a Flat Tax at ranges from 28 to 37 percent can be achieved with general personal deductions ranging between 25,900 SEK to 100,000 SEK. The range of the personal deductions is of course a completely discreet variable.

10 Further research

The scope for further research regarding the Flat Tax system and its application in the Swedish economy is still large. Especially in the area of application on the overall economy and the impact on financial markets are still white spots on the Flat Tax map, not only for Sweden but for most of the Flat Tax literature.

Obviously, there are tremendous implications for the financial markets should a tax like the Flat Tax be introduced. The scope of the change in valuation of companies and the discounted cash flows need to be thoroughly investigated. Also more in-depth research into the indirect effects such as the impact on labor supply and income elasticity is needed. There are few, if any, good estimations available today regarding these issues. Perhaps more relevant is the exact mapping of such estimates to our specific model.

There is also a need for a more politically oriented analysis of a complete change in the tax system. The question whether it is at all feasible to impose a flat tax politically is also still open. As discussed earlier, there are a number of more or less politicized proposals published in Sweden, but although clearly detailed they have all been very light versions of a flat tax rate rather than a true Flat Tax, and they have, probably, never been meant to form the basis for a true change of systems.

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