



## TAX PERFORMANCE ASSESSMENT IN SCANDINAVIAN COUNTRIES

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### **Abstract:**

*The aim of this paper is to evaluate fiscal policy performance level in Nordic countries of Europe by quantifying the gap between their performance and an optimum benchmark value. In this study it was selected Denmark, Finland, Sweden and Norway. These countries occupy the first places in the ranking of countries with the highest rate of tax burden in Europe. The first part of paper contains general aspects of fiscal performance in international research and an overview of the Nordic tax systems model. The second part of paper focuses on evaluation of tax policy performance in these countries by using OptimTax scoring analysis. The research is based on a multivariate analysis instrument that uses quantitative data on various aspects of tax policy. OptimTax achieves a score for assessing the degree of optimization of fiscal policy. The results reveal high levels of tax performance in Scandinavian countries and a trend that seems to be more constant than ascending, except Norway.*

**Key words:** *tax burden rate, tax policy, tax performance, tax optimum*

### **1. Introduction**

Taxation has become a vital component of the development effort. Without tax systems that function well, governments cannot provide even basic social services and infrastructure. Many countries are focusing on tax reforms which can be motivated by several ideas. First, structural reforms cannot pay off without an improved public infrastructure, which is necessary to promote the private sector. But public infrastructure cannot be improved without an equitable and efficient means of mobilizing revenue. Second, reform measures often cause short-term disruptions in the economy, such as a temporary increase in unemployment. Third, many countries are beginning to see that the tax system has a role to play in providing a safety for the poor. (Javad Khalilzadeh-Shirazi, Anwar Shah, 1991) The introduction of a fiscal rule contributes to restoring the sustainability of fiscal policy. (Tomomi Miyazaki, 2014)

It is generally accepted that fiscal performance is a key factor in a country's long-run growth. Understanding the determinants of fiscal performance has thus

become a central topic of research. In general, performance measurement is part of the broader processes of strategic and operational planning and is essential for accountability and transparency. With this in mind, there are two important considerations that form a backdrop for any discussion of performance measurement: first, measuring performance is only relevant if there are consequences for over and under-performance, and if organizational performance can influence such matters as the allocation of an organization's resources and the assessment of personal performance of its managers; and second, as it is commonly argued that what gets measured gets done, performance measurement must be used to support the selection of the organization's priorities, so that what gets done is what should get done. (William Joseph Crandall, 2010)

Tax performance measurement is an ongoing process of ascertaining how well, or how poorly, tax policy is achieving its goals and objectives. It involves the continuous collection of data on progress made in this regard. Tax performance measurement should be based on performance indicators which contain important and useful information about the effects of a tax decisions or tax activity expressed as a percentage, index, rate or other comparison which is monitored at regular intervals and is compared to one or more criteria. Tax performance indicators help illustrate how well a tax policy is doing in meeting its objectives or achieving the desired public outcomes. They need to be relevant, quantifiable, verifiable and free from bias.

Budget policy is one of the key factors that influence fiscal performance in a country. A recent strand of literature has emphasized the role of budget institutions in affecting fiscal performance. In the last two decades more than 120 countries have moved toward a multiyear budget process. The econometric findings suggest that medium term budgets adoption is associated with strong improvement in fiscal discipline. The effects are increasing with each successive phase. (Razvan Vlaicu et. all, 2014) Political economy literature argues that the institutional framework of the government budget process is an important determinant of a government's fiscal performance. (Jürgen von Hagen, 2006)

Hagen J. (2006) shows that the EU fiscal rules have contributed to improving budgetary institutions in those countries where the political environment is appropriate for a rules-based approach to fiscal discipline. However, this is not the case in all EU countries, and especially not in the large EMU economies. Tests of the relationship between budget rules and fiscal performance are metric sensitive and arbitrary in the evaluation of the stringency of the rules, in the aggregation of these evaluations in an index and in the imposition of a linearly specified model. Lagona F. and Padovano F. (2007) have demonstrated that more stringent rules reduce fiscal imbalances and budget size.

There is growing interest in the role of independent fiscal institutions in helping to improve fiscal performance. Research suggests that delegating macroeconomic forecasting to an independent fiscal council can indeed reduce forecasting bias. There is some empirical evidence that independent fiscal institutions can buttress a government's capacity to comply with a numerical rule. Good fiscal institutions are a

necessary condition for achieving disciplined fiscal performance. Experience demonstrates, however, that their existence is not sufficient. Without strong and sustained political commitment to a medium-term fiscal goal and, where relevant, to the mandate of a fiscal council, durable improvements in fiscal performance will remain elusive. (Hagemann R., 2010)

Tax performance evaluation is necessary because tax policy is a factor that influences economic performance. Taxes may affect economic performance via their effects on capital and labor markets, and on human capital formation. The literature review on this subject concludes that the effects of taxes on economic performance are ambiguous in some areas and unsettled and controversial in others. (Willi Leibfritz, John Thornton, Alexandra Bibbee, 1997)

In this condition, creation of optimal tax and budget systems is one of the difficult problems of economic science. One of the most important areas of tax reform is to develop a tax code in the aspect of optimal tax gravity. It is well known that social-economic level of the country is highly determined by improvement of financial field, implementation of which would be impossible without optimal and reasonable tax policy. (George Abuselidze, 2012) The spirit of the optimal tax literature is that the efficiency costs of taxation are potentially large and is worthwhile to focus attention on how to minimize these costs. Tax systems are also evaluated by how they affect the distribution of welfare, and the efficiency cost must be balanced against the distributional implications. (Joel Slemrod, 1990)

The main objective of the paper is to evaluate fiscal policy performance level in Nordic countries of Europe by quantifying the gap between their performance and an optimum benchmark value. We have selected Denmark, Finland, Sweden and Norway. The paper starts with preliminary issues on fiscal performance according to international literature and then continues with two main parts. The first part presents the features of Nordic tax system model and the second part focuses on evaluation of tax policy performance in these four Nordic countries by using OptimTax scoring analysis. Research methodology is according to the rules of scoring analysis. At the end of the paper are emphasized the main results.

## **2. The Nordic tax systems model – overview and features**

In the international literature the Nordic model is seen as a social and economic system. The Nordic model is widely regarded as a benchmark. A number of comparative studies of economic and social performance have ranked the Nordics high. A common finding of cross-country comparisons is that the Nordics succeed better than other countries in combining economic efficiency and growth with a peaceful labor market, a fair distribution of income and social cohesion. (Andersen T. M. et. All, 2007) The model is pointed to as a source of inspiration for other people in their search for a better social and economic system.

There is a Nordic success story in the sense of a favorable combination of economic efficiency and social equality. The Nordic model offers a good business. The

Nordics are open to globalization, and state intervention in the business sector is comparatively limited, as it is regulation of markets climate. High taxes are economically harmful, but their negative effects can be mitigated if public spending supports employment and growth. (Deloitte, 2014)

Critics have been looking for inner contradictions in the model and they have questioned its sustainability. Some argue that the economic performance of the Nordic countries is simply a result of exceptional and temporary advantages, bound to disappear over time. The Nordic welfare state is vulnerable to changes in employment and the age structure of the population. The demand for welfare services tends to grow and the relative cost of producing them tends to increase, which is why spending on welfare services rises faster than GDP. (Andersen T. M. et. All, 2007)

Some of the principal features of the Nordic model are the following: a comprehensive welfare state with an emphasis on transfers to households and publicly provided social services financed by taxes, which are high notably for wage income and consumption; a lot of public and/or private spending on investment in human capital, including child care and education as well as research and development; and a set of labor market institutions that include strong labor unions and employer associations, significant elements of wage coordination, relatively generous unemployment benefits and a prominent role for active labor market policies. (Andersen T. M. et. All, 2007)

The findings of a very large literature can be summarized in three statements. The stateness of the Scandinavian countries has long historical roots and the relationship between the state and the people can be considered as a close and positive one. In the Nordic countries the principle of universal social rights is extended to the whole population. The historical inheritance of the Nordic countries is that of fairly small class, income, and gender differences. At the same time, what has come to be known as the 'Scandinavian' or 'Nordic model (of welfare)' has attracted growing attention in international mass-media. The Nordic model cannot be considered as a common European model. Simply, other European countries cannot repeat its preconditions and their subsequent outcomes. (Matti Alestalo, Sven E.O. Hort, Stein Kuhnle, 2009) The Nordic model is preferable to the Continental model of nations such as France and Germany, which combines welfare state policies and interventionism. But Nordic model does not look very impressive when compared to the US. (Daniel J. Mitchell, 2007)

Taxes are essential. They fund the public amenities, infrastructure and services that are crucial for a properly functioning economy. But the level of tax rates needs to be carefully chosen and needless complexity in tax rules avoided. But, which are the particularities of the Nordic tax systems?

## **Denmark**

The Danish tax system is highly progressive with marginal rates for personal income tax ranging from 8% (up to the amount of personal allowance) to about 56.2% (the upper ceiling plus the labor market contribution and the average church tax of

0.7%). The income tax consists of the 8% tax, municipal tax, church tax and state tax. The municipality taxes range from 22.5% to 27.8% and the church tax, which is optional, range from 0.43% to 1.45%.

The corporate tax rate is 24.5% falling gradually to 22% in 2016. The reduction is not applying for entities in the oil and gas industry. There are no local taxes on corporations, but municipalities receive a share of the corporate income tax revenue. The VAT rate has been since 1.01.1992 25% and only newspapers are taxed at a zero rate. Most of the activities exempted from VAT are subject to a payroll tax. (Deloitte, 2014)

Denmark has the highest tax-to-GDP ratio in the EU, 48.1% in 2012, around three percentage points above Belgium and France. In the last 10 years, the tax burden rate fluctuated within 47.5% and 50.8% in Denmark. The maximum value was in 2005 (50.8%) but it started to decrease until 2010. The Danish tax structure has several features. Social contributions are very low as most welfare spending is financed by personal income taxation. Direct taxes have a share of 63.6% of total tax revenues (EU-28: 33.4%) and the main component is personal income taxes which represent 50.9% of total taxation in 2012. The proportion of indirect taxes is 35.0 % and it is above the EU-28 average (34.5%). (Eurostat, 2014)

In terms of the distribution of revenue between levels of government, Denmark differs substantially from the EU average because of the small role played by social security funds (0.9% of GDP). The share of taxes raised by central and local government is 70.9% and 26.9% (EU-28 48.7% and 11.0%). (Eurostat, 2014) Another feature of Danish tax system is that environmental tax is the highest in the EU.

## **Finland**

In Finland, personal income is divided into two components, earned income and capital income, taxed according to different rates and principles. Central government taxation of earned income is progressive. Since 2013 there are five tax brackets. Marginal rates range from 6.5% to 31.75%, the taxable income threshold is 16,300 euro in 2014. The municipal income tax is levied at flat rates on earned income. The rate varies between 16.50% and 22.50%, the weighted average being 19.74 % in 2014. A church tax is payable by members of the two state churches and the rate varies between 1% and 2%. Capital income is taxed at a rate of 30% on income up to 40,000 euro and at 32% on income exceeding 40,000 euro. It is levied on dividends, rental income, interest income, capital gains, income from the sale of timber and a share of business income. High taxes on labor are likely to adversely affect incentives for working longer hours and investing further in education, even if hours worked per employee and returns on education in Finland are well above the other Nordic countries. (OECD, 2013)

Corporate tax is levied at a 20.0 % rate on all corporate income, out of which expenses incurred for the purpose of acquiring or maintaining business income are deducted. The standard VAT rate is 24 % since 1.01.2013. The reduced rate of 14 % is applied on food and restaurant services. A reduced rate of 10 % is applied for hotels,

medicines, books, newspapers and tickets to cultural events. (Deloitte, 2014) Except EU excises, Finland levies excise duties on sweets, ice cream and soft drinks and certain beverage packages. Finland also levies a tax on newly registered cars and an annual circulation tax.

Social contributions are paid both by employers and employees. In 2014 the rate is 1.32% on employment income and 1.49 % on other income (pension and other benefits). Employees also pay an unemployment insurance contribution (0.50 % of gross salary) and a pension insurance contribution (7.05 % of gross salary for those above 53 years and 5.55 % for others), and a health insurance contribution for daily allowance (0.84 % of gross salary for salaried persons and 0.97 % for the self-employed).

In Finland the overall tax burden (including social contributions) was 44.1% of GDP in 2012, slightly above the level of the previous year. The Finnish tax burden is among the highest in the EU, exceeded only by four countries (Denmark, Sweden, Belgium, and France). During the 2000's the overall tax burden displayed a declining trend from 47.2% in 2000 to 42.5% in 2010, but has been increasing again since 2011. The most important category of taxes is direct taxes which have a share of 37.0% of total taxation in 2012, including a share of personal income tax in total taxation of 29.4%. The share of indirect taxes (33.3%) is slightly below the EU-28 average (34.5%). Social contributions, mainly paid by employers, account for 29.8%, which is less than in most other EU Member States. (Eurostat, 2014)

Local governments receive a rather large proportion of total tax revenues (22.8 % in 2012). These taxes comprise municipal income tax, a share of the corporate income tax revenue, and real estate tax. The central level receives 46.9% of total taxation, and 29.7% of tax receipts go to social contributions fund. (Eurostat, 2014) Tax structure is similar in Finland, Denmark and Sweden, where approximately one quarter or more of the total tax receipts go to the municipalities. The central government collects somewhat less than half of all tax revenues and social security funds almost a third.

## **Sweden**

Since 1991 in Sweden individuals pay the national income tax and municipal income tax. The national income tax rate of 20% applies to incomes above SEK 420,800 (48,768 euro) and 25% to incomes above SEK 602,600 (69,837 euro). A municipal income tax applies at a flat rate which varies between municipalities. The weighted average for 2014 is 31.73%. Taxation of companies follows the classical system, based on a low tax rate of 22% (reduced from 26.3% in 2013).

The standard VAT rate is 25%. A reduced rate of 12 % applies to food stuffs and to services related to tourism. A reduced rate of 6 % applies to domestic daily and weekly newspapers and periodicals; domestic transportation of persons and ski-lift services; cinema, circus and concert admission fees. The purchase and rental of immovable property; medical, dental and social care; education; banking and other financial services; certain cultural and sporting activities are exempt from VAT.

(Deloitte, 2014) Zero-rated goods and services include prescription medicines, gold for investment purposes, and a number of financial services as well as insurance and reinsurance services.

The employer's contributions are made up of: old-age pension contribution, survivor's pension contribution, sickness insurance, parental insurance, occupational injury insurance, unemployment contribution and general payroll contribution, all amounting to 31.42 %. Employees pay an additional pension insurance premium of 7 % of net employment and business income up to a maximum of SEK 32100 (EUR 3 695). The employers' contributions for persons under 26 years are reduced to 15.49 % (old-age pension contribution and  $\frac{1}{4}$  of the other charges).

Swedish taxation levels are the fourth highest in the EU. In 2012, the tax burden rate (including social contributions) was 44.2% in 2012 (EU-28 average was 39.4%). Compared to the neighboring countries, the rate is lower than in Denmark, but higher than in Finland (44.1%) and equal to Norway (44.2%). The overall tax burden decreased from 51.5% of GDP in 2000 to 44.2% in 2012. (Eurostat, 2014) The accelerated decline of the tax burden rate since 2007 was driven by equally faster decline of the personal income tax share in total tax revenues and social contributions. In 2012 revenues from indirect taxes have a share of 42.3% in total tax revenues, while revenues from direct taxes have a share of 41.4%. Sweden stands 26 among the EU countries with share of social contributions of 16.2% in total taxation. This tax mix still differs quite markedly from the EU-28 average where the direct and indirect taxes raise respectively 33.4% and 34.5% of revenues. In the region, only Finland (29.8%) was more or less within the range of the EU average of 32.4%.

Most of the taxes are collected at the central government level (58%) which is higher than the EU-28 average (48.7%). The local government amounts in Sweden to 34.9% of tax revenues and is more than three times higher than the EU-28 average of 11%. This continues to be the highest value in the EU, followed by Denmark (26.9%) and Finland (22.8%). It could be explained by the large share of personal income tax collected at the municipal level. Exactly the opposite situation is noted for social security funds. Social contributions funds collect only 6.6% of Swedish taxes while the EU-28 average was 32.4%. (Eurostat, 2014)

## **Norway**

Norway, like several other Nordic countries, has adopted a dual tax system. Income from labor and pensions is taxed at progressive rates, while most other forms of income are taxed at a flat rate. The tax rate on ordinary income is 27% since 2014. This rate combines central government, county and municipal taxes. The surtax is the progressive element of the personal income tax. The surtax is levied at a rate of 9% on income below NOK 857,300 (102,148 euro) and at a rate of 12% on income above. Companies are subject to corporate income tax of 27% as of January 2014. Special regimes apply to activities related to the exploration and exploitation of petroleum resources. (Deloitte, 2014)

The Norwegian VAT standard rate is 25%. There is a reduced rate of 15% on food and a rate of 8% on passenger transport, broadcasting services, admission to cinemas, accommodation in hotels and camping sites and business letting of holiday homes. A zero rate applies to the sale of books and newspapers. The national insurance contributions payable by employees are computed on gross salary and pension income. The general rate of 8.2% applies to employment income. A reduced rate of 5.1% applies to pensions and life annuities, as well as to employment income earned by individuals under 17 or over 69 years. There is an exemption for incomes up to NOK 39,950 (5,117 euro) from the contributions. For income above this amount, the contributions are at a balancing rate of 25% until the general rate of 8.2% on employment income is achieved.

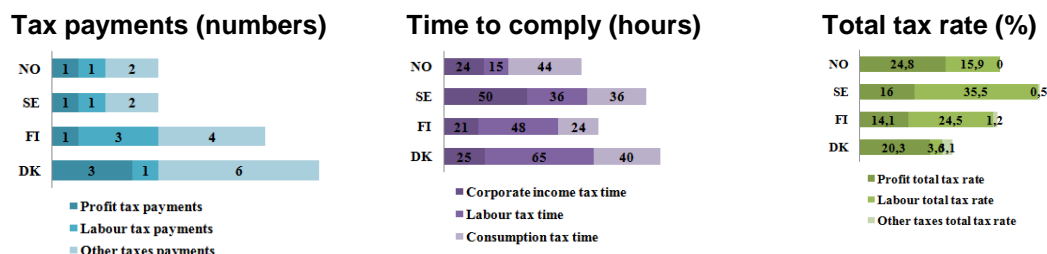
Norway's total fiscal pressure amounted to 42.2% in 2012; a value which exceeds the European Union average by 2.8 percentage points. Norway's ratio is the lowest of the four Nordic countries, lower than Finland's and Sweden's, and well below the Danish one. The level and structure of revenues in Norway are clearly influenced by the important role played by oil and gas extraction in the economy.

The Norwegian tax system is characterized by a high share of direct taxes, although a sharp decline was experienced from 52.6% of tax revenue in 2008 to 49.3% in 2010. The share of direct taxes in total taxation is 50.2% in 2012. The high revenue from direct taxes is due to corporate taxes which have a share of 24.6% of total taxation in 2012, more than four times the EU-28 average. Revenues from indirect taxes and from social contributions cover a smaller share of budgetary revenue; they are also lower than the EU average. Indirect taxes stand at 27.1% of total tax revenues, well below EU-28 average of 38.9%. In 2012, 64.7% of taxes were paid to the central government, while local government (municipalities and counties) received 12.6% of the total tax revenues. Social security funds receive a low share of government tax revenues, 22.7% compared with 32% in the EU-28. (Eurostat, 2014) OECD recommends a gradual fall in the level of taxation, accommodating this within the fiscal guidelines by reducing the growth of public spending below that of national income of Norway. (OECD, 2014)

*Paying Taxes* is a global report which measures the number of tax payments, the time required for complying tax obligations and the total tax rate for 189 countries. Tax payments refers to total number of taxes and contributions paid, including consumption taxes (value added tax, sales tax or goods and service tax) for a manufacturing company in a year (2012). Time required to comply with 3 major taxes (hours per year) refers to collecting information and computing the tax payable, completing tax return forms, filing with proper agencies, arranging payment or withholding, preparing separate tax accounting books, if required. Total tax rate (% of profit before all taxes) contains profit or corporate income tax, social contributions and labor taxes paid by the employer, property and property transfer taxes, dividend, capital gains and financial transactions taxes and waste collection, vehicle, road and other taxes.



Figure 1 The Scandinavian countries in Paying Taxes



Source: Paying Taxes 2014

Globally, Denmark stands at 12 in the ranking of 189 economies on the ease of paying taxes. In Denmark firms make 10 tax payments a year, spend 130 hours a year filing, preparing and paying taxes and pay total taxes amounting to 27.0% of profit. Finland stands at 21 in the ranking of 189 economies on the ease of paying taxes and firms make 8 tax payments a year, spend 93 hours a year filing, preparing and paying taxes and pay total taxes amounting to 39.8% of profit. Figure 1 shows that in Sweden firms make 4 tax payments a year, spend 122 hours a year filing, preparing and paying taxes and pay total taxes amounting to 52.0% of profit. Sweden is on 41<sup>st</sup> place in the world. The 17<sup>th</sup> place is reserved to Norway, where firms make 4 tax payments a year, spend 83 hours a year filing, preparing and paying taxes and pay total taxes amounting to 40.7% of profit. (PWC, The World Bank, IFC, 2013)

The current international tax regime permits countries to maintain different tax rules, which encourages multinational firms to shift the location of their investments and operations to countries that impose relatively lower tax burdens. Multinational firms shift more and more paper profits through sophisticated tax-planning strategies to investments in countries that impose relatively lower tax burdens, which often reduces taxes collected in relatively high-tax countries. (Arthur J. Cockfield, 2010) So, tax competition influence setting tax rates. It is a factor that leads to a decrease in tax rates in general. This phenomenon is currently affecting the Nordic countries and tax strategies are needed. The identification of optimal tax strategies for each country should have as a starting point the process of quantifying fiscal policy's performances.

### 3. Data and methodology

This paper proposes to measure the degree of fiscal policy optimization by using OptimTax scoring analysis. OptimTax is a multivariate analysis tool that uses quantitative data on various aspects of tax policy and achieves a score to assess the degree of optimization of tax policy in a country.

OptimTax tool is based on seven economic indicators as follows:

**I<sub>1</sub> - Fiscal pressure** is given by the ratio of tax revenues including social contributions to gross domestic product expressed as a percentage. Eurostat is data source for total

receipts from taxes and social contributions (including imputed social contributions) after deduction of amounts assessed but unlikely to be collected as percentage of GDP, updated to 24/07/2014.

**I<sub>2</sub> - Tax revenues' growth rate** is given by the ratio of tax revenue from the current year and tax revenue from the previous year. Calculations were made by the author based on Eurostat data series indicator total receipts from taxes and social contributions (including imputed social contributions) after deduction of amounts assessed but unlikely to be collected, updated to 24/07/2014 and expressed in millions of national currency.

**I<sub>3</sub> – Public revenues and public expenditures ratio** is correlated to the capacity of government to cover public spending by using only domestic public revenues. For this indicator calculations were made based on Eurostat series for general government total expenditure and total general government revenue denominated in millions of national currency, updated to 24/07/2014.

**I<sub>4</sub> – Share of tax revenues in total government revenues** is obtained by dividing the total tax revenues to public revenues. This indicator shows the percentage of government revenues collected by taxes. For public revenues it were used general government total revenue, for tax revenue was used data series of total receipts from taxes and social contributions (including imputed social contributions) after deduction of amounts assessed but unlikely to be collected, expressed in millions of national currency.

**I<sub>5</sub> - Progress of the estimated public revenues** indicates that public revenues that result from budget implementation can cover initial budgeted revenues. It is determined as a ratio between actually provided revenues to government and the revenues estimated to be collected. There is no public data at EU level for this indicator, it was conventionally considered accomplished by all seven analyzed countries. This means that the countries collect all annual estimated revenues.

**I<sub>6</sub> - Share of borrowed resources in tax revenues** refers to the ratio between government debt and annual tax revenues. It indicates the financial resources raised by public loans or bonds issues that are in addition to insufficient tax revenues. Eurostat provided the statistical series for government consolidated gross debt, expressed in millions of national currency for each country, updated to 14/05/2014. The data cover the whole budget system of each country and not just the state budget.

**I<sub>7</sub> - Share of direct taxes in total tax revenues** It characterizes the structure of a tax system and shows its dependence on revenues from taxes on profit or income. In determining this indicator were used Eurostat series for current taxes on income, wealth, etc. and total receipts from taxes and social contributions (including imputed

social contributions), updated to 24/07.2014. An optimal tax system should be based on taxation of income, profits, gains and estate of taxpayers, not on indirect taxes. All data series cover the period 1995 - 2012 and were accessed on 21/08/2014. It is assigned to each indicator a score between 1 point and 5 points, according to the recorded value. These points have the following meaning: the values approaching optimal situation receive the maximum score of 5 points and the indicators that reach undesirable values receive the minimum score of 1 point. Each indicator has a coefficient of importance in the final score value, as shown in the table below. The level of optimization of budget and fiscal policy is even greater as the score tends to a maximum of 5 points. Otherwise, the minimum score is 1 point. The level of optimization of budget and fiscal policy can be determined as a percentage by dividing the number of attained points at the maximum score of 5 points. The optimum value should be 100%.

The system of hypothesis is the following: *Hypothesis 1*: The optimal tax rate implies a lower tax burden (below 30%). If fiscal pressure is low, the taxpayers can utilize a larger part of their incomes. These incomes may be used more rationally and efficiently than government. *Hypothesis 2*: An optimal situation is recorded when there is a yearly tax revenues growth rate of over 15%. The positive evolution of an economy should generate additional government revenue. *Hypothesis 3*: The optimum value of this ratio is higher than one, over 1.2. If the state has a surplus of funds, then tax optimization level increases. *Hypothesis 4*: Fiscal optimum is achieved when tax revenues are the main source of government revenue (less than 75%) but without strictly depending on tax revenues. *Hypothesis 5*: The optimization of fiscal policy improves as the degree of realization of public revenues exceeds 1. *Hypothesis 6*: Borrowed resources should not exceed the 10th part of tax revenues. Optimal fiscal policy should not be based on additional financial resources from borrowing, so that the optimal situation requires a small value of this indicator. *Hypothesis 7*: An optimal fiscal situation is characterized by a high share of direct taxes (higher than 70%). Working assumptions are summarized in the table below as scores for each indicator. It should be noted that in setting limits for each score ranges it were considered economically logical reasoning criteria because it were not identified any previous researches establishing these values.

**Table 1: OptimTax hypothesis' system**

Indicator	K	1 p	2 p	3 p	4 p	5 p
$I_1$	0.16	>50%	(40%-50%]	(35%-40%]	(30%-35%]	≤30%
$I_2$	0.07	≤80%	(80%-95%]	(95%-105%]	(105%-115%]	>115%
$I_3$	0.20	≤90%	(90%-100%]	(100%-110%]	(110%-120%]	>120%
$I_4$	0.15	>95%	(90%-95%]	(85%-90%]	(75%-85%]	≤75%
$I_5$	0.07	≤70%	(70%-80%]	(80%-90%]	(90%-100%]	>100%
$I_6$	0.15	>50%	(30%-50%]	(20%-30%]	(10%-20%]	≤10%
$I_7$	0.20	<25%	[25%-35%)	[35%-50%)	[50-60%)	≥60%

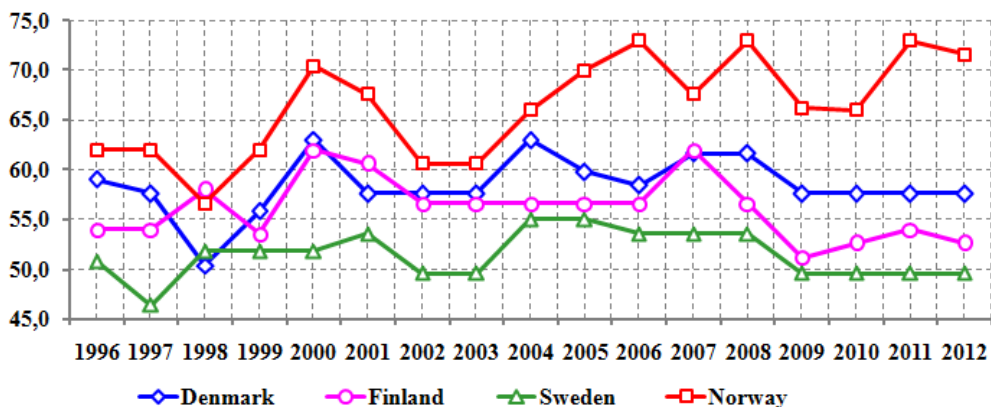
$$\text{OptimTax (points)} = 0.16 \times \text{points } I_1 + 0.07 \times \text{points } I_2 + 0.20 \times \text{points } I_3 + 0.15 \times \text{points } I_4 + 0.07 \times \text{points } I_5 + 0.15 \times \text{points } I_6 + 0.20 \times \text{points } I_7$$

There are two restrictions that influence the relevance of the results, namely: the quality and source of quantitative data on the one hand, and assumptions that define the fiscal optimum situation on the other hand.

#### 4. Results

After applying the scoring analysis tool between 1996 and 2012 it were obtained values of fiscal policy optimization level over 45% of the maximum level of 5 points for all four countries. The results are detailed in Appendix. OptimTax scores range from a minimum of 46.4% in Sweden (1997) and 73% in Norway (2011) with a maximum average of 61.8% for all countries in 2000. It can be identified a tendency towards improving tax performance for Norway. Tax systems performance in Scandinavian countries has experienced successive upward and downward variations for each country, but these variations are concomitant for all four with cyclical developments in the world economy (1998 – 2002, 2003 – 2009, 2010 – 2012). It can be appreciate that Scandinavian countries have high values for tax performance level and are positioned at short distance from the tax optimum point.

**Figure 2 Trend of tax performance level in Scandinavian countries**



Source: Author's calculations

In the figure above it can be seen that tax optimum level in Scandinavian countries has a simultaneous evolution, but the trend seems to be more constant than ascending. There can be identified two peaks and three drops. The first drop is in 1998 when the OptimTax average score was 54.2% for Scandinavian countries, but it was followed by a rapid growth during two years. The first peak of tax optimization is in 2000 (61.8%), the scores fluctuated from 51.8% in Sweden to 70.4% in Norway. This peak is followed by a drop in tax policy performance in Scandinavian countries

between 2001 and 2003. The average score reached a low value of 56.1%. In Sweden the tax performance level decreased by 2.2 percents; while in Norway it decreased by 9.8 percents to 60.6%. In the further period, 2004 - 2007, Denmark and Finland have not made significant progress in improving their fiscal policy performance level, their evolution were linear and smooth. At the same time, Norway improved its tax policy performance reaching values over 70%, while Sweden records a smooth decrease in OptimTax scores from 55% to 53.6%.

The second peak was 61.2% and it was reached in 2007-2008 when Finland and Norway reached the maximum level of fiscal policy performance. Individual values ranged from 53.6% in Sweden to 73% in Norway. This period is followed by a drop in tax policy performance in 2009 to an average tax policy performance of 56.2%. In 2009 the minimum score was 49.6% in Sweden and the maximum value was 66% in Norway. Since 2010, except Norway, the other Scandinavian countries have a constant progress toward improving their fiscal performance.

Norway has the highest levels of fiscal policy performance across the analyzed period and among Scandinavian countries. On the contrary, the lowest fiscal policy performance levels are registered in Sweden, while Denmark and Finland have similar developments.

**Table 2: OptimTax scores between 2000 and 2012**

Country	Denmark	Finland	Sweden	Norway
<b>Maximum scores</b>	<b>63%</b> (2004)	<b>62%</b> (2000; 2007)	<b>55%</b> (2004; 2005)	<b>73%</b> (2006;2008;2011)
<b>Minimum scores</b>	<b>57.6%</b> (1998)	<b>51.2%</b> (2009)	<b>49.6%</b> (1997)	<b>60.6%</b> (1998)
<b>Average (2000 – 2012)</b>	<b>59.3%</b>	<b>56.5%</b>	<b>51.8%</b>	<b>68.1%</b>

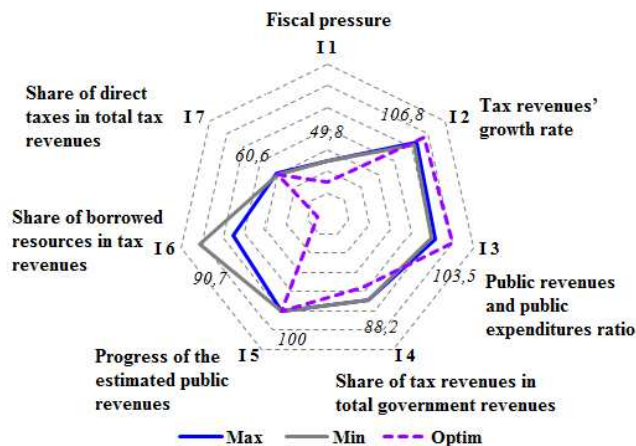
*Source: Author's calculations*

Table 2 contains a summary of the maximum and minimum fiscal policy performance scores between 2000 and 2012 for Scandinavian countries. The highest levels of fiscal performance in each country were recorded since 2000, instead the last '90 years brought the minimum values. We notice a large discrepancy between the values of tax optimization level in Norway (73%) and Sweden (55%). The lowest fiscal policy performance was recorded in Sweden 49.6%, while Norway recorded a minimum of 60.6%. Interestingly, the minimum value of Norway tax system performance in 2002 exceeds the maximum Sweden tax system performance in 2004. The average fiscal policy performance in each country contains more significance. Between 1996 – 2012, on average, Norway had a OptimTax score of 66.4%, followed by Denmark with 58.4%, Finland 56.1% and the lowest values was 51.4% in Sweden.

### Denmark and Finland

During 1996-2012, the research findings indicates values for tax optimization level over 50% in both countries, but it notes that the performance of fiscal policy in Denmark is mostly higher than those recorded in Finland. During six years the differences are quantified to 5-6 percents, although in 1998 Finland had a level of fiscal performance of 58%, ie with 7.6 percent more than the minimum value in Denmark (50.4%). In 2000 and 2004, the OptimTax for Denmark indicates a maximum of 63%, 1 percentage point over 62% in Finland in 2000 and 2007. In general, the trend is slightly ascending in Denmark and slightly descending in Finland with periods of constant evolution.

**Figure 3 Maximum and minimum value of tax optimization level in Denmark**

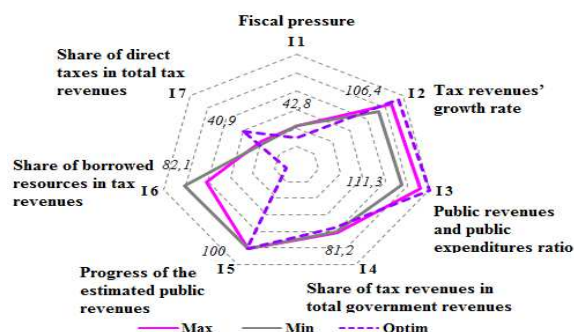


Source: Author's calculations

Even if the number of inhabitants in Denmark (5.6 million persons) is only by 3.7% larger than in Finland, Denmark collects over 120 billion euro as revenues from taxes and social contributions, by 41.7% more than Finish government (84.6 billion euro). This is due to a high tax burden rate in Denmark, the highest among European countries. The average tax burden rate in Denmark during 1996 – 2012 was 49.4%, it decreased from maximum 51.5% in 2005 to 48.9% in 2012. [Eurostat, 2014] Average tax burden rate in Finland is by 5 percents lower than in Denmark and it fluctuated from maximum 47% in 2000 to minimum 42.4% in 2010 and it increased to 44% in 2012. There are no differences in the values of tax revenues growth in these countries. Tax revenues annually increased by 4% during analyzed period. The evolution budgetary deficit/surplus has the same trend in Denmark and Finland. Denmark. These countries have collected between 1998 – 2008 public revenues covering whole public expenditures, while since 2009 they registered a degree of coverage of public expenditure of 90%. The budgetary surplus had a maxim value of 5.3% of GDP in 2007 in Finland and 5.2% of GDP in 2006 in Denmark. But, since 2009 both countries

are facing with budgetary deficits: -1.8% of GDP in Finland and -3.8% of GDP in Denmark (2012). [Eurostat, 2014]

**Figure 4 Maximum and minimum value of tax optimization level in Finland**



*Source: Author's calculations*

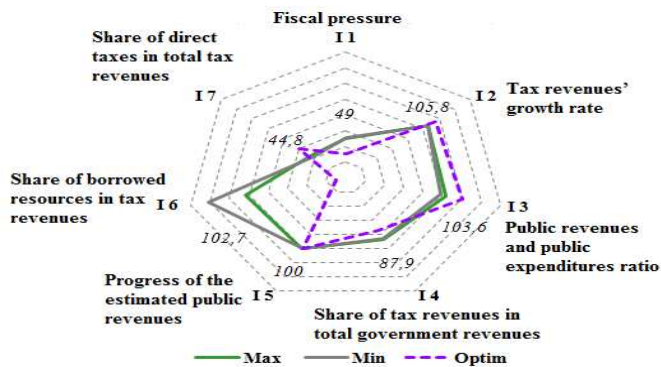
A weakness of both countries is given by insufficient financial resources collected from the population and the existence of a need for additional borrowed resources. The evolution of indebtedness ratio is similar too. In 1996 Finland had a consolidated government public debt of maximum 57% of GDP, it decreased to the minimum value of 33.8% of GDP in 2008, followed by an increase to 53.6% of GDP in 2012. Denmark had in 1995 a public debt representing 72.6% of GDP, it reduced until 2007 to 27.1% of GDP, but it started to increase to 45.4% of GDP in 2012. [Eurostat, 2014] Interesting is that even there are no significant differences between maximum OptimTax score in these two Scandinavian countries, the evolution of taxes on income and wealth in total tax revenues is opposite. Denmark is the country with the highest value if this indicator, i.e. the share slightly increased from 59.4% in 1999 to 62.15 in 2012. Meanwhile, Finland has the lowest value of this indicator among Scandinavian countries. The share of direct taxes in total tax revenues decreased from 44.9% in 2000 to 36.4% in 2012. [Eurostat, 2014]

### **Sweden and Norway**

These two countries have opposite evolutions in tax policy performance and the differences are large. OptimTax revealed a value of tax optimization of maximum 73% in Norway in 2006, 2008 and 2011, by 8 percentage points over the 55% recorded by Sweden in 2004 and 2005. The results positioned Sweden in the category of countries that have achieved a low performance of fiscal policy. Minimum tax policy performance level in Sweden was 46.4% in 2007, lower by 10 percents than the minimum value of 56.6% in Norway in 1998. No progress is evident for Sweden during 1996 - 2012. Sweden performance has a constant evolution during entire period. An increase in OptimTax values is seen in 2004 from 49.6% to 55%, continuing with a constant evolution until 2009 when the score decreased to 49.6%. These evolutions

are correlated to tax burden rate evolution in Sweden. Tax burden rate increased in 2004 to its maximum value of 51.6% and it gradually fell to 44.4% in 2012. Instead, Norway knows a strong ascending trend in reaching an optimal fiscal policy between 1996 and 2012. Based on our calculation, Norway recorded the highest values of tax optimization level determined by using OptimTax. Norway values are closed to the optimal values as it can be seen in Figure 6. Thus OptimTax scores ranged between 56.6% and 73% with an annual average of 68.1%, but the values had positive and negative oscillations.

**Figure 5 Maximum and minimum value of tax optimization level in Sweden**

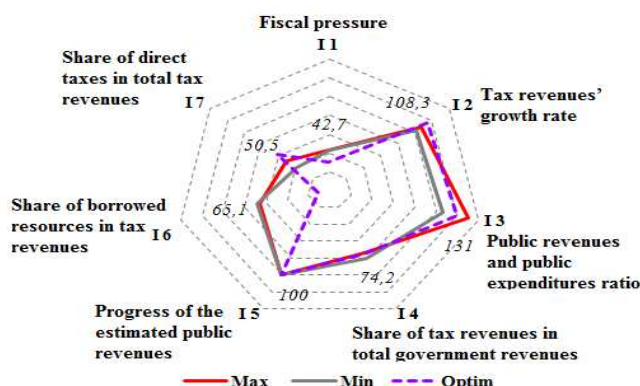


*Source: Author's calculations*

Compared to the other Scandinavian countries, Sweden has the largest number of inhabitants (9.6 million persons) that contributed in 2012 to state budget with taxes and social security contributions amounting to 181 billion euros. Swedish government has tax revenues by 10% higher than Norwegian government given that the number of inhabitants in Sweden is almost double than in Norway. However tax revenue growth rate in Norway is higher than in Sweden. In terms of coverage of public expenditures by public revenues Sweden has temporary sufficient domestic financial recourses and is facing with low values than Norway. The budget deficit/surplus fluctuated from -1.3% of GDP in 2002, to a maximum of 3.6% of GDP in 2007 and -0.6% of GDP in 2012. [Eurostat, 2014] Inferior performance of fiscal policy in Sweden is due to a high level of indebtedness. Sweden recorded in 1996 a public debt ratio of 73.3% of GDP and it gradually decreased to 38.3% in 2012. Borrowed financial resources exceed by 45% the volume of tax revenues in 1996 in Sweden and they represented only 86% of tax revenues in 2012. A feature can be identified in terms of share of direct taxes in total tax revenues. In Sweden it is decreasing from 45.8% in 2006 to 40.8% in 2012, while Norway improves its fiscal policy performance by expanding emphasis on direct taxation. Sweden has an average share of direct taxes in total tax revenues of 42.3%, the second value after Finland.



**Figure 6 Maximum and minimum value of tax optimization level in Norway**



Source: Author's calculations

Norway is a country with 5 million inhabitants sitting on about 385,000 km<sup>2</sup> and producing a GDP amounting to 385.75 billion euro in 2013. The GDP per capita was 75,900 euro, almost twice than in the neighboring Scandinavian countries.[Eurostat, 2014] Norway is a non-EU country with the highest Human Development Index from world (0.944) in 2013. [Human Development Report, 2014] But what are the particularities of Norwegian public revenues system? A first issue concerns the share of tax revenues in GDP. Norway is the Scandinavian country with the lowest average of tax burden rate (around 42.5% annually). The Norwegian government has tax revenues worth 164.3 billion euros (2012) whose annual evolution is upward during 1996-2012, except 2009. Tax system provides around 76% of government revenues and focuses on revenues from direct taxation which provide over 46% of tax revenues. These figures reveal a great advantage for Norway, they have a public financial resources system which is not strictly depending on tax system, it has other types of public revenues. Tax revenues share in total public revenues is decreased from 77% in 1996 to 74% in 2012. The share of taxes on income and wealth in total tax revenues increased from 38.2% in 1995 to 50.1% in 2012.

Another favorable aspect is Norwegian government's ability to cover all public spending by using their domestic financial resources collected from citizens. During entire period Norway reported annual budget surpluses of up to a maximum of 18.8% of GDP in 2008 and a minimum of 7.3% of GDP in 2003 (13.9% of GDP in 2012). In the same period the other Scandinavian countries have faced budgetary deficits. In the analyzed period, Norway borrowed resources representing approximately 126% of tax revenues in 2006 and only 69% of tax revenues in 2012. Public debt in Norway decreased from 55.4% of GDP in 2006 to 29.1% of GDP in 2012. Norway is an indebted Scandinavian country, after Sweden.

## **5. Conclusions**

Applying assumptions of OptimTax instrument during 1996-2012 for the Scandinavian countries led to the identification of simultaneous evolutions of tax performance, but the trend seems to be more constant than ascending in these countries. It was identified a tendency towards improving tax performance only for Norway. OptimTax scores range from a minimum of 46.4% in Sweden (1997) and maximum 73% in Norway (2011) with a maximum average of 61.8% for all countries in 2000. There can be identified two peaks in tax optimization evolution. The first peak of tax performance is in 2000, the scores fluctuated from 51.8% in Sweden to 70.4% in Norway. The second peak was 61.2% and it was reached in 2007-2008 when Finland (62%) and Norway (73%) have the maximum level of fiscal policy performance. Norway has the highest levels of fiscal policy performance among Scandinavian countries and across the analyzed period. On the contrary, the lowest fiscal policy performance levels are registered in Sweden, while Denmark and Finland have similar developments of OptimTax values around 56%-58%. Progress is evident in Norway during entire period, while Sweden has experienced involution in reaching an optimal fiscal policy since 2005. Even if Denmark has the highest tax burden rate among Scandinavian countries it has not the highest OptimTax score. A common problem is for all four countries the public indebtedness which reaches more the 1/3 of GDP. High values of tax performance in the Scandinavian countries are explained by the existence of two advantages: tax systems dependence on direct taxation and low public budgetary deficits since 2009, before they faced budgetary surpluses.

## **6. Acknowledgement**

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