Aggregated Index for Modelling the Influence of Fiscal, Financial and Social Policies on Enterprise Financial Performance

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Abstract. In this study we develop a financial performance aggregate index (FPAI) for modelling the relationship between fiscal policy and financial performances. There are seven variables used to compose the index, that specifically reflect the influence of fiscal, financial, and social policies on the enterprise's financial performance. Mainly, it is expected that the FPAI could be applied for modelling the effective management of typical fiscal policies for companies from different sectors, but also for evaluation of financial performances of an enterprise under these fiscal and social policies. This paper represents the theoretical results of our research, while the empirical results will be provided in a future study.

Keywords: taxation, fiscal variables, financial performance aggregate index (FPAI), total assets turnover

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1   Introduction

It is widely known that taxation, fiscal and social policies influence both the firms' behaviour and the macro economy in the framework of a market economy (Conefrey and Fitz Gerald, 2011).

According to published literature, the influences of fiscal policies on company's activity are noticed especially at the level of corporate's financial policy decisions. Thus, empirical studies published by now analyse the impact of taxation on firm's policy, mostly with regard to equity policy, debt-equity decision, investment policy, ownership structure policy, etc. (Auerbach, 2002; Graham, 2008).

There are also studies regarding the influence of taxation on firm location decisions and how can tax policy foster the creation of new companies.

Barrios *et al*. (2009) have analysed how host and parent country taxation influence the location decisions of multinational firms. They use in the study a large international firm-level dataset and their results show that parent firms tend to be located in countries with a relatively low taxation of foreign-source income. At the same time parent-country taxation is instrumental in deciding the structure of multinational companies.

Da Rin *et al.* (2010) analyse at the European level how the taxation component of fiscal policy influences entrepreneurial initiative. They involve in the study panel data from 17 European countries and, using recent models of how corporate taxation affects firm's incorporation decision, find that taxation may affect not only the entry decision, but also the characteristics of entering firms.

Overall, studies regarding the relationship between fiscal policy and firms analyse especially big companies, and there are very few published results considering SMEs, as far as we know. The models and methodologies used in these researches belong to two different categories, namely econometric models for panel and cross-section data, and Computable general equilibrium models CGE (Alho, K.E.O, 2008, for example in the case of CGE models).

On the other hand, evaluation factors of the fiscal policy can have causal relationship with financial performances such as profitability, growth, liquidity, debt, turnover, and valuation ratios (Weston and Thomas, 1985).

Starting from the causal relationship mentioned above, this paper aims to study the extent to which fiscal, financial and social policies influence financial performance of firms belonging to specific economic sectors. For this purpose we develop a financial performance aggregate index (FPAI) for modelling the relationship between fiscal policy and financial performances.

Some literatures suggest that financial performance can be measured in terms of return on assets (ROA), return on investment (ROI), and return on sales (ROS) (Johnson *et al.*, 1993; Daily and Johnson, 1997; Shang and Marklow, 2005), while other studies measure it in terms of profitability, liquidity, solvency, managerial performance and capital structure (Courtis, 1978; Weston and Thomas, 1985, Van-Horne, 1989; Laitinen, 2002).

Nevertheless, the aggregate index FPAI we propose includes as variables some new rates able to reflect the influence of fiscal, financial and social policies on firm's financial performance. The novelty of this work is given by the seven variables used to compose the index, that specifically reflect the influence of fiscal, financial, and social policies on the enterprise's financial performance; so that the FPAI will allow to see on the one hand the influence of fiscal policy from the viewpoints of its both instruments: taxation and government spending, and on the other hand how sector-specific tax expenses influence firms' financial performance, when fiscal policy differently encourage economic sectors. Mainly, it is expected that the FPAI could be applied for modelling the effective management of typical fiscal policies for companies from different sectors, but also for evaluation of financial performances of an enterprise under these fiscal and social policies.

The present paper represents only the theoretical results of our research, and it is organized as following. In Section 2, the proposed financial performance aggregate index FPAI is briefly introduced, while the full description of each variable included, and the justification of their use is given by Section 3. The Section 4 concludes this study and summarizes the theoretical results of our research, which will be verified empirically in our future study.

2   Index Description

There are seven variables used to compose the index, that specifically reflect the influence of fiscal, financial, and social policies on the enterprise's financial performance. Each variable represent a rate already known and used in literature or composed by us so that to be able to illustrate as better as possible the relationship between fiscal - social policies and firm's financial performances, starting from the information offered by company's financial statements.

If we consider the FPAI index and its components as elements of a simple regression equation, the equation form is given by the following formula:

$$FPAI_t = \alpha + \beta TAT_t + \gamma OpR_t + \delta SIOS_t + \eta FES_t + \theta STES_t + \lambda SGS_t + \sigma RPR_t + \varepsilon_t \qquad (1)$$

where:

$\alpha, \beta, \gamma, \delta, \eta, \theta, \lambda$ – model coefficients; t –time;

$FPAI_t$ – financial performance index;

TAT_t – total asset turnover;

OpR_t – operational return before deducting expenses with social security & insurance, other taxes (special funds) and financial expenses;

$SIOS_t$ – share of social security & insurance, corporation income tax, other taxes (special funds) and tax savings in net sales;

FES_t – share of financial expenses in net sales;

$STES_t$ – share of specific sector tax expenses in net sales;

SGS_t – share of subsidies and grants in net sales;

RPR_t – reinvested profit ratio

ε_t – the error term; the variable that capture all other factors which influence the dependent variable, other than the regressors mentioned above.

3   Description of component rates

The rates considered significant for emphasize the influence of fiscal and social policies on firm's financial performance are both consecrated and newly proposed rates. The following description illustrates each of the seven rates, with their interpretation and justification for being use in this analysis.

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a) Total Asset Turnover (TAT) is meant to measure a company's efficiency in using its assets. The total assets turnover is measured as ratio between net turnover (net sales) and total assets of the company:

$$TAT = \frac{\text{net sales (S)}}{\text{total assets (TA)}}.$$

This rate means whenever assets are converted into sales during the year or simply how much money results in a year from the use of a certain amount of assets. The higher a company's asset turnover, the lower its profit margin tends to be, and vice versa. Also, the ratio measures the efficiency of employed capital and the higher it is, the better.

We introduced this ratio in our financial performance aggregate index in order to reflect the efficiency of assets used in the firm's activity. This rate is widely used in numerous internationally recognized models and achieved on different sectors of activity and different companies category: Grammenos *et al.* (2008) used it to estimate the probability of default for shipping high yield bond issues; Sohn and Kim (2007) developed an accurate scoring model for SMEs in order to effectively manage governmental funds and predict the default of funded SMEs based on both financial and non-financial factors; Tsai *et al.* (2006) reconciles diverse efficiency measures to characterize the productivity efficiency of 39 Forbes 2000 ranked leading global telecom operators, being the first attempt to compare the operating performance of global telecom operators in the Forbes 2000 rankings with the Carnes, Cooper and Rhodes (CCR) ratings especially linked with EBITDA margin, return on assets, total assets turnover and net profit ratio.

Zariyawati *et al.* (2010) investigate the effect of corporate tax rate changes on firms' financial performance of SMEs in Malaysia, using four financial ratios as current ratio, debt ratio, total asset turnover and return on assets from the year 1999 until 2003 in observing the SMEs performance .Their analysis indicated that tax changes do affect SMEs performance. This is due to the significant performance improvement can be observed in SMEs profitability. This proves that total assets turnover is a relevant indicator for measuring companies' performance.

b) Operational Return (OpR) before deducting expenses with social security & insurance, other taxes (special funds) and financial expenses is a new ratio we propose in order to express the efficiency of operational activity (operating and financial activity), independent of social, financial and fiscal policy.

To this purpose, we took into account the operating and financial results, and we cancelled the deduction of social security and insurance expenses, the expenses with other taxes as special funds and financial expenses, eliminating thus the influence of fiscal and social policies met at firm's level. The proposed formula is:

$$OpR = \frac{ER + FR + SSI + OT + FE}{TA}$$

where:

OR – operating results; FR – financial results; SSI - social security & insurance; OT - other taxes;

FE - financial expenses

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We intend to describe through this rate the companies' operational returns under the hypothesis that there are no fiscal obligations, nor banking debts. The influences of fiscal obligations and banking debts are reflected by further variables.

c) The Share of Social Security & Insurance, Other Taxes, Corporation Income Tax and Tax Savings in Net Sales (SIOS) by developing this new ratio we want to exclusively show the influence of social and fiscal policies on companies' performance. We add tax savings indicator to reflect the total income tax that would be paid if the company does not use banking loans. The formula is:

$$SIOS = \frac{SSI + OT + CIT + TS}{net\ sales}$$

where:

SSI - social security & insurance; OT- other taxes; CIT – corporate income tax;

TS-tax savings related to banking interest expenses.

Generally, these expenses influence negatively companies' financial performance, due to the fact that expenses with social security & insurance, other taxes and corporate income tax including tax savings related to banking interest expenses usually have an important share in total expenses of a company. We are taking into account tax savings in order to emphasize that interest expenses are deductible to the income tax calculation and, if the company uses banking loans, these expenses reduces taxable income and company income tax.

d) Share of Financial Expenses in Net Sales (FES) shows the influence of financing policy on firm performance and the influence of company's financial structure on aggregate performance index. It is measured as ratio between financial expenses and company turnover:

$$FES = \frac{FE}{net\ sales}$$

where:

FE – financial expenses.

As the indebtedness of the company or leverage ratio is higher, the more financial expenses are higher. Modigliani and Miller (1958) highlight that return on equity, as indicator that reflects the company's performance estimated for a company indebt, is a linear function of leverage ratio, if return on assets is higher than average interest rate. This indicates that a company indebted will get a return on equity higher, to the same average cost of capital. Debt solution for a company should not be absolutized as growing of return on equity, and can be interpreted as a need perceived by shareholders of indebted company to request a financial risk premium as a result of joint financing structure adopted by the company. In many companies from Romania, for example, the leverage ratio is high, banking loans being the second more used source of financing by Romanian companies, after self-financing.

e) The Share of Sector-Specific Tax Expenses in Net Sales (STES) is used in order to show the influence of sector-specific tax expenses on firm's performance, and it is measured as ratio between sector-specific tax expenses and turnover:

$$STES = \frac{sector\_specific\ tax\ expences}{net\ sales}$$

We introduce this ratio because fiscal policy could be oriented to differently encourage the economic sectors, depending on how much these sectors are considered strategic for national economy. Thus, there could be tax expenses, specific to different industries, which may influence FPAI. Specific taxes are indirect taxes where a fixed sum is paid per unit sold. Examples of such taxes are excise duties on tobacco, alcoholic drinks and petrol, for the companies acting in this field of activity.

f) The Share of Subsidies and Grants in Net Sales (SGS) shows the influence of fiscal policy on firms' performance, considering the second instrument of fiscal policy, namely the government spending. This is a ratio between subsidies, including grants and turnover:

$$SGS = \frac{subsedies\ and\ grants}{net\ sales}$$

It is well known that fiscal policy influences both the collection of revenues to the state budget from the companies and the redistribution of public incomes to economic sectors that require financial support. Over the last years financial support as subsidies and grants were accorded to different Romanian economic sectors (agriculture, tourism and fisheries) by Sectoral Operational Programmes. Many grants accorded by these programmes are oriented to SMEs. We must mention that companies do not receive grant as 100% of the investment value, but they have to co-participate with a value between 10-50% of the investment. These subsidies and grants can contribute to the increment of companies' financial performances.

g) Reinvested Profit Ratio (RPR) illustrates the share of reinvested profit in the company's net profit and the profit remains available for reinvestment:

$$SGS = \frac{\text{reinvested profit}}{\text{net results}}$$

We developed this ratio because there were periods of time in Romania, at the beginning of the2000s, when tax-exempt was applied for reinvested profit. In 2009, due to the negative economic consequences induced by international financial crisis, this facility had been applied again, until 31st of December, 2010.

These laws grant exemptions from taxation profits reinvested in the production and/or purchase of equipment (machinery, equipment and working installations). Also, tax-exempt of reinvested profit is applied to assets considered new in the sense that were not previously used, and those who benefit from these facilities are required to maintain assets at least a period equal to half of their normal period of use, otherwise they will pay tax and penalties for delay. In the period when the minimum company income tax was applicable, if the income tax of the company receiving tax exemption for reinvested profit is below the minimum income tax, then minimum income tax is paid.

This rate can be used, alongside other indicators, to analyse the companies' financial policy.

4   Conclusions

Previous empirical studies published results that confirm the importance and the influence of fiscal and social policies on financial performance at firm level. Using different methodologies, literature study mostly the behaviour of big companies under the influence of taxation or social policies.

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Beside consecrated rates used in corporate financial performance analysis, our study propose several new rates that form a financial performance aggregate index (FPAI) for modelling the relationship between fiscal and social policies and financial performances of a firm.

The possible empirical results of such an analysis are reflected in Table 1.

Table 1 Expected results

Independent variables	Expected influences on dependent variable FPAI
TAT	It is expected to be statistically significant and positive correlated with FPI.
OpR	We expect positive correlation with FPI, statistically significant.
SIOT	Due to the important share of its components in total companies' expenses, we expect a statistically significant negative correlation with FPI
FES	It is expected a positive correlation with FPI

Independent variables	Expected influences on dependent variable FPAI
STES	We expect that specific-sector tax expenses negatively influences financial performance.
SGS	It is expected a positive influence on FPI
RPR	The reinvested profit ratio is expected to positively correlate with FPI

The expected influences illustrated by the above table will be verified in our future study, were we apply the index and the variables on real data from Romanian private companies.

5   Acknowledgments

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