Financial, Public and Regional Economics

The Analysis of the Evolution of Tax Revenues in EU Member States during 2009-2013

Cornelia Elena Tureac[1], Georgeta Dragomir[2]

Abstract: The state budget is a financial plan at the macroeconomic level, and it is designed as a set of accounts of the nation, which reflects the current year and next year projections on all economic agents in the country / region. The size of the public sector varies significantly from one Member State to another, which means that the financial resources available to the public sector differ substantially at the European Union level. The paper includes an analysis of the evolution of the main indicators corresponding to public financial resources at EU level achieved between January 2009 - December 2012 or December 2013, where data processing was available. The information was taken from the Eurostat statistics database. The research methodology used in this work was done by the use of indicators: the share of total public revenue in GDP; the share of taxes in GDP of production and imports; the share of current taxes on income, wealth etc. in GDP; the share of social security contributions in GDP. In the analysis there were considered, of the total financial resources of government, only the taxes levied on production and imports, current taxes on income, wealth etc. and social security contributions. In conclusion, the share of government revenues in GDP increases, but there are states where it decreases, such as Estonia, Lithuania, Luxembourg, Germany and Sweden. The public financial resources share in GDP at the level of the Eurozone was always higher in relation to the entire European Union, but always keeping the difference around 0.8 to 0.9 percentage points. France recorded the highest share of social security contributions in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of these financial resources in GDP, i.e. only 1.9% in 2009 and 1.8% in 2013.

Keywords: evolution; indicator; tax; share; resources

JEL Classification: H20; H21

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1. Introduction

The state budget expresses the economic relations, in cash, which appear in the sharing process of gross domestic product (GDP), consistent with the objectives of the economic, social and financial policy of each period. These relationships are manifested in two ways: on the one hand, the relationships through which the money resources are mobilized, available to the state, and on the other hand, the relationships that allocate these resources. The state budget is a financial plan at the macroeconomic level, and it is designed as *a set of accounts of the nation*, which reflects in the current year and the next year projections on all economic agents in the country / region.

As it is the most important mechanism by which the public finance functions are transposed into life, the state budget represents the most important instrument of state intervention in the economy, through fiscal and budgetary policies.

From the financial point of view, budgetary unit is a rule of order and clarity, allowing the state to present the real financial situation of the country, without dissimulation. Multiplying budgets and private accounts can become very difficult to get an overview of public revenues and expenditures, which encourages waste.

2. Research Methodology

The size of the public sector varies significantly from one Member State to another; it may also mean that the financial resources available to public sector differ substantially from the European Union. Hence the reason we achieved an analysis of the evolution of tax revenues in the EU Member States.

In the analysis there were considered from the total government financial resources, only taxes levied on production and imports, current taxes on income, wealth etc. and social security contributions, as defined by Eurostat.

The period for which it was analyzed the evolution of these revenues is January 2009 - December 2012 or December 2013, where data processing was available. The information was taken from the Eurostat statistics database.

The indicators analyzed for this study are:

- The share of total public revenue in GDP;
- The share of taxes on the production and imports in GDP;
- The share of current taxes on income, wealth etc. GDP;
- The share of social security contributions in GDP.

We opted to use the evolution of shares in the analysis in order to achieve a more accurate comparison of the evolution from one Member State to another.

3. Research Results

The evolution of the share of total public revenue in GDP, at the level of the whole union, as well as just in the Eurozone, is shown graphically in Figure 1, based on Eurostat data.

As it can be observed, the share of public funds in GDP in the Eurozone was always higher in relation to the entire European Union, but always keeping the difference around 0.8 to 0.9 percentage points.

An evolution of the same indicator for each of the Member States is presented in Table 1. Seen on individual countries, it is observed that in the analyzed period in general the share of government revenues in GDP increases, but there are states where it decreases such as: Estonia, Lithuania, Luxembourg, Germany and Sweden.

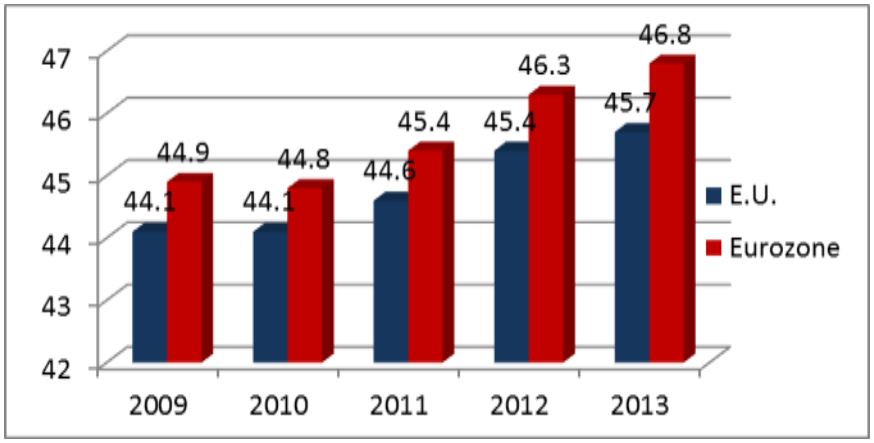

Figure 1. The proportion of total public revenues in GDP

Table 1. The proportion of total public revenues in GDP by states (%)

	2009	2010	2011	2012	2013
Belgium	48.1	48.7	49.6	51	52
Bulgaria	37.1	34.3	33.6	35	37.2
Czech Republic	38.9	39.1	40	40.3	40.9
Denmark	55.3	55	55.7	55.5	56.2
Germany	45.2	43.7	44.3	44.8	44.7

	2009	2010	2011	2012	2013
Estonia	42.8	40.7	38.7	39.2	38.1
Ireland	34.5	34.9	34	34.5	35.9
Greece	38.3	40.4	42.2	44.4	45.8
Spain	35.1	36.7	36.2	37.2	37.8
France	49.2	49.5	50.7	51.8	52.8
Croatia	40.8	40.5	40.3	40.8	41
Italy	46.5	46.1	46.1	47.7	47.7
Cyprus	40.1	40.9	39.9	39.4	40.3
Latvia	34.5	35.3	34.9	35.1	35.1
Lithuania	35.5	35	33.2	32.7	32.3
Luxembourg	44.5	42.8	42.7	44	43.6
Hungary	46.9	45.6	54.3	46.6	47.6
Malta	38.8	37.7	38.6	39.9	41.1
Netherlands	45.8	46.3	45.6	46.4	47.3
Austria	48.5	48.3	48.3	49.1	49.7
Poland	37.2	37.5	38.4	38.3	37.5
Portugal	39.6	41.6	45	40.9	43.7
Romania	32.1	33.3	33.9	33.7	32.7
Slovenia	42.3	43.6	43.5	44.4	44.7
Slovakia	33.5	32.3	34.1	33.7	35.9
Finland	53.4	53	54.1	54.5	56
Sweden	54	52.3	51.5	51.2	51.5
UK	39.6	39.8	40.3	42	41.1

Source: EUROSTAT

Regarding the second analyzed indicator, i.e. the share of taxes on production and imports in GDP, in the category of those taxes there were included, according to Eurostat data, all mandatory taxes generated by the production and importation of goods and services.

Regarded as compared to the entire Union and the Eurozone it is barely visible as compared to the share of total public revenue in GDP, the change in production and imports share of taxes in GDP is higher the Eurozone than the average value of the same indicator in the European Union as a whole. The data is presented in Table 2.

Table 2. The share of taxes on production and imports in GDP

(%)

	2009	2010	2011	2012	2013
E.U.	12.7	13	13.2	13.4	13.4
Eurozone	12.6	12.7	12.8	13	13.1

Source: EUROSTAT

Table 3 reflects the share change of taxes in GDP production and imports for each Member State separately. In order to determine the values it was used the following formula:

$$\Delta p_{\frac{V_{PI}}{GDP}} = p_{V_{PI}/GDP_1} - p_{V_{PI}/GDP_0} = \frac{V_{PI_1}}{GDP_1} x100 - \frac{V_{PI_0}}{GDP_0} x100 \quad (1)$$

where:

$\Delta p_{\frac{V_{PI}}{GDP}}$ - change of production and imports share of taxes in GDP

$p_{V_{PI}/GDP}$ - production and imports share of taxes in GDP

Table 3. Change in share of taxes in GDP production and imports

	2009-2008	2010-2009	2011-2010	2012-2011	2013-2012
Belgium	0	0.3	-0.2	0.3	0
Bulgaria	-2.3	-0.2	-0.4	0.6	0
Czech Republic	0.4	0.1	0.5	0.6	0.2
Denmark	-0.2	-0.2	0.2	-0.1	0
Germany	0.6	-0.4	0.1	0	-0.1
Estonia	2.5	-0.7	-0.2	0.3	-0.5
Ireland	-1.1	0.2	-0.6	0.2	0.6
Greece	-1.1	0.8	0.7	-0.3	0.3
Spain	-1	1.7	-0.5	0.5	0.5
France	0.3	-0.2	0.4	0.2	0.2
Croatia	-0.9	0.9	-0.5	0.7	0.4
Italy	-0.1	0.4	0	1	-0.5

	2009-2008	2010-2009	2011-2010	2012-2011	2013-2012
Cyprus	-2.5	0.2	-0.8	0.3	-0.4
Latvia	-0.2	0.6	0.1	0.1	0.1
Lithuania	0	0.3	-0.2	-0.4	-0.1
Luxembourg	0.4	-0.5	0.1	0.5	0.3
Hungary	1	0.5	-0.2	1.3	0.1
Malta	-0.4	-0.5	0.4	-0.2	0.2
Netherlands	-0.3	0.3	-0.6	-0.2	0.3
Austria	0.5	-0.1	-0.1	0.2	-0.1
Poland	-1.4	0.8	0.2	-0.9	-0.3
Portugal	-1.4	0.6	0.4	0	-0.1
Romania	-1	1.2	1.1	0.2	-0.5
Slovenia	-0.3	0.3	0	0.3	0.8
Slovakia	0	-0.3	0.4	-0.6	0.5
Finland	0.5	0	0.8	0.2	0.4
Sweden	0.8	-0.9	0.8	-0.1	0.3
UK	-0.3	1	0.6	0.2	0.1

From the data of the table it can be observed that in the European Union this indicator recorded changes of increase and decrease from one year to another. The only exceptions occur in the case of Czech Republic and Finland, which were exclusively positive changes from one year to another.

The financial resources from the current taxes on income and wealth as a share in GDP and their annual changes are shown in Table 4, both for the whole European Union and the Eurozone.

Table 4. The share of current taxes on income and on wealth in GDP (%)

	2009	2009-2008	2010	2010-2009	2011	2011-2010	2012	2012-2011	2013	2013-2012
E.U.	12.4	-0.9	12.3	-0.1	12.5	0.2	12.9	0.4	13.1	0.2
Eurozone	11.6	-0.9	11.6	0	11.9	0.3	12.4	0.5	12.7	0.3

Source: EUROSTAT

As a share of GDP, the public financial resources arising from taxes on income and on wealth are lower than the average in the Eurozone, at the level of the entire

union. Regarding their annual change, it is increasing in both Eurozone and the entire European Union.

The most important component of public resources funds as a share of GDP represents the social security contributions. Table 5 shows that their share in GDP in the Eurozone is slightly more significant than the average at the level of the entire European Union. Also the annual changes in the absolute size of this indicator are very small, generally 0.1 percentage points, increasing and decreasing.

Table 5. The share of social security contributions in GDP (%)

	2009	2010	2011	2012	2013
E.U.	14.1	13.9	13.9	14	14
Eurozone	15.8	15.7	15.7	15.9	16

Source: EUROSTAT

Analyzing the same indicator in each Member State levels, as shown in Table 6 it shows large discrepancies from one country to another. Thus, France has the highest share of these financial resources in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of social security contributions in GDP, i.e. only 1.9% in 2009 and 1.8% in 2013.

Table 6. The share of social security contributions in GDP per Member States (%)

	2009	2010	2011	2012	2013
Belgium	16.8	16.5	16.7	17.1	17.3
Bulgaria	7.7	7	7.3	7.2	7.8
Czech Republic	14.9	15.2	15.5	15.6	15.6
Denmark	1.9	1.9	2	1.9	1.8
Germany	17.3	16.9	16.7	16.8	16.8
Estonia	13.2	13.2	12.1	11.6	11.4
Ireland	7.4	7.3	6.2	5.9	6.2
Greece	12.7	13.4	13.1	13.7	13.4
Spain	13.4	13.4	13.3	13	12.8
France	18.8	18.7	18.8	19	19.4
Croatia	12.2	12	11.7	11.5	11.3
Italy	14	13.8	13.7	13.8	13.8
Cyprus	8.7	8.9	8.8	8.5	8.9
Latvia	9.4	8.6	8.7	8.6	8.3

	2009	2010	2011	2012	2013
Lithuania	13.2	12.2	11.6	11.3	11.2
Luxembourg	12.9	12	12.2	12.6	12.2
Hungary	13.3	12.2	13.3	13.3	13.4
Malta	7.3	7.1	7.3	7.3	7.3
Netherlands	14.6	14.9	15.5	16.6	16.9
Austria	16.5	16.3	16.3	16.4	16.7
Poland	11.3	11.1	11.4	12.3	12.2
Portugal	12.5	12.3	12.3	11.6	12.2
Romania	10.2	9.5	9.1	9	8.8
Slovenia	15.2	15.5	15.3	15.5	15.2
Slovakia	12.7	12.5	12.5	12.7	13.8
Finland	12.9	12.8	12.7	13.3	13.4
Sweden	8.7	8.7	7.7	7.7	7.5
UK	8.4	8.3	8.3	8.4	8.3

Source: EUROSTAT

The shares of above 16% are registered in Austria, Netherlands, Germany and Belgium.

For a better overview of the importance of the four categories of public financial resources in Table 7 there are presented together with the values of the four indicators, while Figures 2 and 3 graphically illustrate the same data.

Table 7. The share of the main public financial resources in GDP (%)

Indicator	2009		2010		2011		2012		2013	
	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone	E.U.	Eurozone
Total public revenues;	44.1	44.9	44.1	44.8	44.6	45.4	45.4	46.3	45.7	46.8
Fees Applicable to production and imports	12.7	12.6	13	12.7	13.2	12.8	13.4	13	13.4	13.1
Current taxes on income and wealth	12.4	11.6	12.3	11.6	12.5	11.9	12.9	12.4	13.1	12.7
Social security contributions	14.1	15.8	13.9	15.7	13.9	15.7	14	15.9	14	16

Source: EUROSTAT

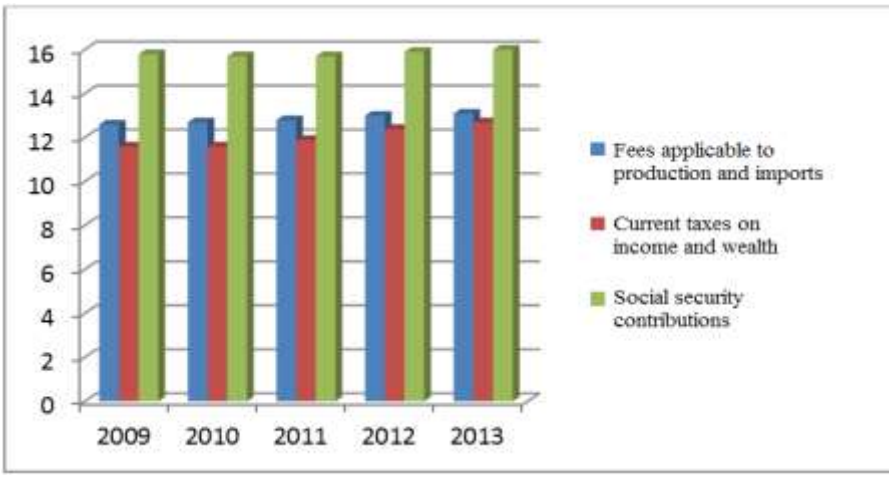

Figure 2. The share of the main public financial resources in GDP in the Eurozone

One can easily see that the largest share in GDP is in the social security contributions in both the Eurozone as well as in the whole European Union. In comparison, however, between the two geographical areas taken into account, at the level of the Eurozone the financial resources in the form of social security contributions as a share of GDP, they are above the EU average.

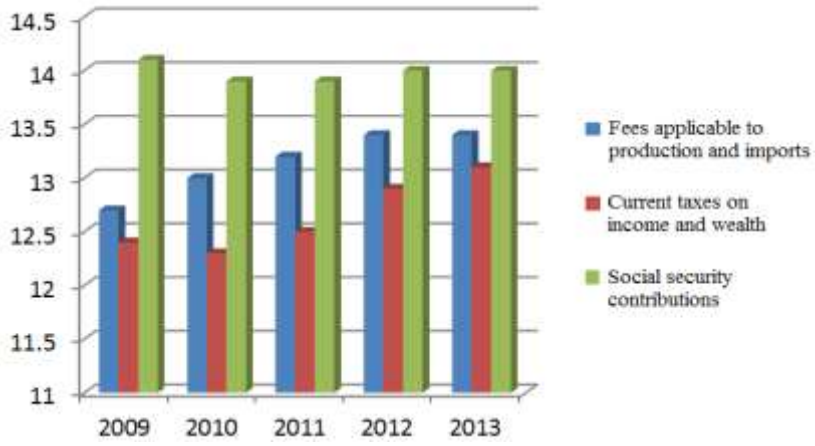

Figure 3. The share of the main public financial resources in GDP in the EU

There are also below the EU average, but there are fees for the production and imports, and public financial resources from taxes on income and wealth.

4. Conclusion

The state budget expresses the economic relations, in cash, which appear in the sharing process of gross domestic product (GDP), consistent with the objectives of the economic, social and financial policy of each period. These relationships are manifested in two ways: on the one hand, the relationships through which the money resources are mobilized available to the state, and on the other hand, the relationships that allocate these resources. This paper aims at analyzing the public financial resources of each Member State of the European Union. There were taken and analyzed statistical data from Eurostat for the following indicators: the share of total public revenue in GDP, the share of current taxes on income and wealth in GDP, the share of taxes levied to production and imports in GDP and the share of social security contributions in GDP. In general, referring to the EU Member States, the Eurozone indicator values are often different from the average values applicable to the entire European Union. For example, the share of public funds in GDP was always higher in the Eurozone than the EU average. The situation is diametrically opposite in terms of share of taxes in GDP production and imports. Overall we cannot speak about a uniform evolution of tax revenue in the Member States of the European Union. The size of the public sector and economic development varies significantly from one Member State to another, which means that the financial resources available to public sector differ substantially across the EU. During the analyzed period the share of government revenues in GDP generally increases, but there are states where it falls, such as Estonia, Lithuania, Luxembourg, Germany and Sweden. It is barely visible as compared to the share of total public revenue in GDP, changing production and imports share of taxes in GDP is higher than the Eurozone average value of the same indicator in the European Union as a whole. The most important component of public financial resources as a share of GDP represent the social security contributions. Note that their share in GDP in the Eurozone is slightly more significant than the average in the whole European Union. The annual changes in the absolute size of this indicator are very small generally 0.1 percentage points in both increase and decrease. Analyzing the share of the social security contributions in GDP per Member States, France recorded the highest share of these financial resources in GDP (18.8% in 2009 and 19.4% in 2013) while Denmark has the lowest share of social security contributions in GDP respectively only 1.9% in 2009 and 1.8% in 2013. It can easily be seen that the largest share of GDP have social security contributions in the Eurozone as well as in the whole European Union. In comparison, however, between the two geographical areas taken into account, at the level of the Eurozone the financial resources in the form of social security contributions as a share of GDP are above the EU average. Due to the current economic crisis, at the level of many Member States difficult budgetary situation

have occurred, which led to a general increase in the tax share in the EU, reflected at the level of direct and indirect taxes, as well as the level for social security contributions. Given the general economic environment and in order to meet the economic and social challenges, the institutions of the Member States of the European recommend fiscal policies that encourage the economic start and reducing unemployment.

Among the most important recommendations are:

- substantial decrease of the tax pressure on labor market;
- increase of tax revenues by broadening the tax base and lesser by increasing the tax rates of imposition or setting new taxes;
- reducing tax evasion, etc.

5. Acknowledgment

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6. Bibliography

Nastase, Gabriel I. (2013). *Buget si trezorerie publica*/*Budget and public treasury*. Bucharest: Pro Universitaria.

Popa, Ionela; Parpandel, Denisa & Codreanu, Diana (2012). Reforma bugetului UE in contexul actualei crize economice/ EU budget reform in the context of the current economic crisis. *Jurnalul Economie Teoretica si Aplicata/ Theoretical and Applied Economics Journal*, Volume XIX, pp. 118-129.

Ungureanu, M. A. (2011). *Buget si trezorerie publica*/ *Budget and public treasury.* 1st edition. Bucharest: Editura Universitara.

Eurostat database.

Impact of Analytics in Financial Decision Making: Evidence from a Case Study Approach

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Abstract: This study seeks to investigate the impact of analytics in financial decision making in organizations in a rapidly growing knowledge economy. Analytics has emerged as a critical business enabler in today's competitive market place. Its application has provided businesses with the opportunity to gain a competitive advantage by leveraging the vast amount of data they have available. Analytics is not limited to a particular tool or method however; it encompasses a range of combinations and it is this element that has made analytics such a success factor. This study uses a case study approach to identify critical areas of business where analytics have played a vital role in financial decision making. Application of analytics in financial decision making is shown to streamline information resulting in making decisions more efficiently and effectively. This study provides insights in financial decision making using statistical backing which has a vast number of applications in finance functions. As such, areas such as such detecting fraud, budgeting and forecasting, risk management and customer insights need to actively apply analytical tools to better manage and enhance the information gained from these areas. This study integrates the use of information technology tools and packages with financial management with the view of enhancing financial decision flow in organizations.

Keywords: information technology; process; software; fraud; decision making

JEL Classification: G14; G31; G32; M21

1. Introduction

Business leaders from around the world and across industries are consistently questioning whether or not they are deriving the full value from the large amounts of data available to them, both internally and externally. While advances in technology allow for data to be collected more efficiently, organisations are still searching for methods or tools to extract value out of their data to enhance the organisation's competitive edge. Most often, the information extracted is used to

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make decisions that directly impact on market share, profitability, customer satisfaction and other key success factors. Therefore, the information needs to add value in order for it to be useful. This is where analytics comes into play; with its advanced statistical techniques and tools it has the potential to extract the maximum value out of the large quantities of data available. Organisations worldwide have seen the value in using analytics and have been pushing to implement it in some way in their organisations since the dawn of the new millennium. Research conducted by Lesser, Lavalle, Shockley, Hopkins, and Kruschwitz (2011) found that high performing organisations are twice as likely to make use of analytics within their organisations. This indicates that the benefits are being widely realised. These benefits are further reflected by research that shows that the analytics market experienced massive growth over the last decade and is predicted to experience robust growth over the next few years (Kalakota, 2013). Despite the prominent growth in analytics within the market place, its application remains fragmented and not fully understood. This discussion provides a practical view of how analytics has been supporting financial decision making, by using case studies to provide real-life examples. In doing this, the study aims to identify themes highlighted in the literature and projects where analytics was implemented amid a rapidly growing knowledge economy. Overall, this study asks the question: How does analytics support financial decision making?

2. Literature Review

The term analytics has no set definition and is based on perspective and business need (Natadarma, 2012). In general, analytics is referred to as the science of logical analysis. According to Davenport, Harris, & Morison (2010), the most common definition in the market place for analytics is as follows: “the extensive use of data, statistical and quantitative analysis, exploratory and predictive models, and fact-based management to drive decisions and actions”. Therefore, analytics does not apply to a specific technology or technique but to a group of technologies and methods. On a similar note, Laursen and Thorlund (2010) emphasised that analytics or business analytics is not only a technical solution but encompasses three elements, namely, technological, human and business processes. A few studies have described analytics as a part of Business Intelligence (BI), which makes extensive use of analytical techniques (Bose, 2009; Negash & Gray, 2008). However, other studies have labelled analytics as nothing more than an advanced discipline of BI (Laursen & Thorlund, 2010). From a technical standpoint, BI is used to facilitate the connections in an organisation, whereas real-time information is used to support analytics. Drawing from the above definitions, analytics is a process of turning data into actions by using advanced tools and techniques. This

process was highlighted by Liberatore and Luo (2010) and is depicted in Figure 1 below.

Figure 1. Analytics Process

Source: (Liberatore & Luo, 2010, p. 2)

While Figure **1** above figure may represent analytics as a simple linear process, analytics projects may not follow the identical order and the process may be iterative, especially the first two steps, where more data may be required after further analysis has been applied.

While the definition and types of analytics differ, there are some common elements found that act as drivers, which are essential no matter what analytical process is being performed. According to Liberatore and Luo (2010), the driving forces behind analytics are data, process, software and people. The declining cost of data storage and the advancement in these technologies have ignited an explosion in the amount of data organisations can process, collect and store. This led to a fundamental business process redesign with which companies aimed to increase business performance. This was done by putting more emphasis on value-added activities through improved process design (Davenport, 2013).

The use of computer software to read, analyse and present data has increased exponentially in the last two decades (Natadarma, 2012). The number of tools being offered is vast and they are extremely useful. Many vendors have included analytic tools as part of their software suites. Analytical software packages range from simple statistical tools, such as spreadsheets (e.g. Microsoft Excel), to intermediary statistical software packages (e.g. SPSS Statistics), complex intelligence suites (e.g. SAS), predictive industry applications (e.g. SPSS Modeller) and advanced reporting and analytical modules that form part of enterprise systems (e.g. Cognos). This move by vendors has increased the competition in this area, which has helped drive analytics within organisations

Finally, the demand for data-driven managers has increased drastically over the past few years (McAfee & Brynjolfsson, 2012). Many executives are now more computer literate and have strong technical backgrounds due to working through this technological boom. Therefore many, if not all companies have put an

emphasis on these applications in training staff or in the recruitment process in order to hire people with the necessary skills.

The collective impacts of these drivers have shaped the emergence of analytics and its characteristics. Analytics has become more data driven especially now that data are more available and less expensive. With the focus on process improvements as mentioned above, there has been a shift from human-made decisions to automated processes. One of the main purposes of analytics being performed is to improve processes that will lead to improvements in decision making. The software and data component of these drivers also ensure that insights and decisions are retained, which means there is continuity when decision makers move on. This is the power of analytics, however, this concept has expanded through time and to understand that, an exploration into the emergence of analytics needs to be undertaken.

3. Methodology

This study uses the case study approach in analysing the impact of analytics on financial decision making. In order to ground the understanding of the influence of analytics on decision making, case studies are used to gain a practical understanding and further demonstrate examples of information derived from the use of analytics. The data used to populate the case studies were sourced from IBM's internal intranet project reference site, however, the information used was publically available information as the data is used for external purposes and the projects used are available via the Internet to all. The names were excluded in the analysis to keep the anonymity of the companies. However, where names have been used, the information sourced is widely available via the Internet, and therefore it is not necessary to keep the company anonymous as no confidential or sensitive information is shared. The projects and information selected were based on their relevance and applicability, while the analysis of the information followed a combination of an explanation-building analytical technique and document analysis method. The goal of the explanation-building analytical technique is to analyse the information by building an explanation about the case (Yin, 2014). This technique was selected due to the complex and difficult nature of precisely measuring the areas covered (Riege, 2003). Similar to the work done by Edgar Schein (2003), which analysed the failure of a large successful computer company to sustain growth in the market, explanation building (EB) was used as the information analysis method of choice. The EB technique was used in conjunction with document analysis as they both follow the same principles. Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give added voices and meaning to the research topic (Patton, 2005).

Hence, these methods were employed to derive the important themes from the selected projects in order to demonstrate these points.

4. Findings and Discussion

One of the biggest challenges in the current environment is to identify forces that drive value creation, such as financial, operational, market and competitor drivers. Failure to identify these drivers and then relate them back to organisational performance can result in companies missing market trends and falling behind. Insights from IBM's global chief financial officer (CFO) study reveal that CFOs recognise that analytics provides an advanced tool set to collect and analyse data to gain a competitive advantage in a new way, providing real-time insights across the value chain from pricing to inventory management (IBM, 2010). Mike Newman, the CFO of Office Depot, had the following to say about analytics: "Business analytics is one of our most critical Finance initiatives. We need to have the right people and tools and stay very close to the business" (IBM, 2010). There are many areas in which analytics aids financial decision making. With this vast flow of data from various sources, a large portion will have financial implications and will end up with finance departments. Therefore, the opportunity to apply analytics in decision making is huge. This also highlights the shift of the finance function, moving away from transaction processing to a more strategic advisor role. In order to get a flavour of how analytics impacts on financial decision making, a few areas only are looked at, as it would not be possible to cover all in this section. These areas also relate to some of the components of the finance function.

Although fraudulent financial statements are the most common form of fraud, there are other types of fraud, such as transaction fraud, which is common and is being effectively dealt with by insurance companies and banks. In this analysis, we cover the detection of fraudulent financial statements by drawing on a study that tested this detection by using analytical techniques. There have been numerous studies that have analysed the use of data mining methodologies in detecting fraud in financial statements (Chen & Du, 2009; Kirkos, Spathis, & Manolopoulos., 2007; Kotsiantis, Koumanakos, Tzelepis, & Tampakas, 2006; Ngai, Hu, Wong, Chen, & Sun, 2011; Phua, Lee, Smith, & Gayler, 2010; Ravisankar, Ravi, Raghava Rao, & Bose, 2011). Data mining methods include various advanced classification and prediction capabilities that use complex algorithms to process the data. These advanced methods fall directly under the realm of analytics. The study focused on, is that of Kirkos et al. (2007), which carried out an extensive examination of publicly available data gathered from various companies, in order to identify fraudulent financial statements (FFS) by making use of data mining classification techniques. The main aim of the study was to educate those in the auditing field on

the various methods available, since detecting fraud using traditional methods has become difficult (Kirkos et al., 2007). There have also been various studies that have used analytical techniques to try to detect management malpractice or fraud, which will not be discussed further in this paper (Beasley, 1996; Fanning & Cogger, 1998; Liou & Yang, 2008).

Budgeting and forecasting are iterative processes that run concurrently in organisations (Player, 2009). However, these processes suffer from delays arising from data collection, data integrity and data distribution issues. The amount of time this information takes to be become available to analysts to make tweaks, may leave a company more than a month behind in taking corrective action. Globalisation and geographical distribution exacerbate the challenge. Moving away from more human interaction to automation allows for fewer errors to occur. In the current business environment, organisations need to be more agile with their budgeting processes. The following case study gives a practical example of a real-life implementation.

Case Study 1:

Company: Wireless Provider

Background: The Wireless Provider is one of the largest privately held wireless providers in the United States and has led the industry with innovative voice and data services. It also has a commitment to providing advanced wireless services in rural America that has long been available to those living and working in metropolitan areas.

Key Issues: The company was using Excel spreadsheets and an old general ledger system that flowed into its financial reporting tool and had no functionality or infrastructure to create a comprehensive budget. All the information needed to compile the budget was on disparate spreadsheets which were on systems not designed to handle budgeting.

Outcomes: IBM Congos TM1 solution was implemented, which is an analytics-based financial performance management and reporting software tool. According to a senior manager of the company: 'From the get-go, IBM Cognos TM1 greatly facilitated our data collection for the budget, giving us a central place for departments to input detailed information'. The finance team no longer had to manually look up invoices. Congos TM1 also allowed for referencing of individual transactions that made up totals in financial reports. The software also offered transparency and provided up-to-date information, which allowed for fast, flexible reporting and ad hoc analysis. One of the biggest benefits was the ability for the software to interface with Excel, which made it easier for the employees to get used to it.

Source: IBM Project Reference Hub

4.1 Risk Management

In the current volatile business climate, financial risk management stands out in terms of priority for many organisations. In order to meet regulatory and internal demands, accurate data as well as tools are needed in order to analyse the risk and exposure across the organisation (Cokins, 2009). Organisations need to manage the increasing data complexity with intensive analysis to be able to better respond to risks that arise in real time. However, this agility requires access to efficient computing resources that are able to perform this intensive analysis. The results must also be easily accessible to employees and managers. Solutions should provide the ability to collect and store key risk indicators, which would reduce the time needed to compute real-time risk exposures. They also include advanced visual displays and reporting tools that source information from all parts of the organisation, which enables the system or solution to provide a consolidated view of risk management exposures. The following case study provides a practical example of how an analytics solution helped with risk management.

Case Study 2:

Company: Israeli Bank

Background: Established in 1900's, Israel Bank is one of Israel's largest banks and a financial market leader with operations around the globe. In Israel, the group to which the bank belongs includes financial companies involved in investment banking, credit cards, trust services, and portfolio management. Overseas, its bank operates through branches, subsidiaries, and representative offices that primarily serve as wealth management hubs and trade enablers.

Key Issues: As the pre-eminent banking franchise the bank runs simulations on the nearly 70,000 deals it manages every day. To ensure comprehensive risk management and to liberate its traders to pursue new opportunities, the bank wanted to empower risk managers to easily assess risk and set meaningful limits on trade. Combined with increased regulatory requirements, these were the drivers that promoted the next level of risk management.

Outcomes: Using IBM Algo Market Risk, the bank's market risk team was able to run a daily batch process after hours by extracting data from the dealing room. Running a scenario-based Monte Carlo simulation, as well as historical Value at Risk (VaR), the software helped the bank to evaluate trades and risk. The bank is now able to run daily risk analysis batch processes for all positions in all portfolios, which allows them to deliver accurate information to managers in a timely manner. The head of risk for the bank, had the following to say: 'While IBM Algo Market Risk undoubtedly enables us to have a solid foundation for risk management, its value clearly extends beyond that scope.

By using it throughout the bank in numerous ways, we've realized far more advantages from the solution than we had anticipated.' The bank now has a competitive edge over other banks in Israel with the implementation of this analytics software by being in a better position to compare scenarios, anticipate potential threats and opportunities, more adequately plan, budget and forecast resources, balance risks against expected returns and work to conform to regulatory requirements.

Source: IBM Project Reference Hub

4.2 Customer Insights

The most important aspect of any organisation is its customers. Customers are the driving force behind the organisation and need to be considered in any decision made, more so in financial decisions because of the direct relationship. Customers are more empowered and connected than ever. With so much customer data available, which is continually getting richer and richer each day, organisations are pushing analytics to better understand and engage their customers (Lichtenstein, Bednall, & Adam, 2008). Organisations are now using analytics to predict and monitor customer behaviour using social media, online tracking, customer history and customer preferences. This completely changes the model for customer engagement. Predictive analytics has become a huge part of customer management, which helps predict what customers are likely to do based on what they have done in the past. With so many new tools coming into the market this has made it accessible to even the average business (Wareham, 2013). A report conducted by Forrester Research found that 80% of companies use both descriptive and predictive analytics to understand behaviour (Sridharan with Frankland & Smith, 2012). The following case study highlights how customer analytics has been practically implemented.

Case Study 3:

Company: Telecommunications Authority (TA)

Background: Established by the country's government in 1950's, TA is a dominant telecommunications provider, offering a wide range of voice and data services for businesses and consumers alike. TA offers fixed and mobile telephony, high-speed networks, television and Internet services and devices, and more.

Key Issues: TA decided to join the European Union, where it was confronted with not just intense competition but also an unprecedented opportunity to grow. To adapt to this shift in the marketplace, the telecommunications authority required a deeper understanding of its customers: who they were, which services they used, which services they needed, how much profit they

generated. All of which could help increase customer retention, profitability, growth and market share.

Outcomes: TA implemented a range of components that made up the final solution, which included IBM SPSS Modeller and IBM SPSS statistics, one of the most popular and powerful analytics software suites. This allowed TA to make a transition from a product-centric stance to a customer-centric stance, leveraging the statistical analysis and modelling solution. By applying this solution to customer data, the organisation was able to segment its customers and prospects based on factors such as age, income, geography, service plans, spending habits and usage metrics. This allowed the organisation to predict long-term revenue of each customer and develop a targeted approach by segment. This resulted in increasing revenue and increased response rates by up to 30% from marketing campaigns.

Source: IBM Project Reference Hub

The above discussion highlights how critical analytics has become in financial decision making. Analytics-based decision making is now well recognised as providing a distinct competitive advantage, which was well illustrated in the above case studies. It has become an integral part of decision making and companies have heavily invested in a bid to make their organisations more agile in the competitive global market place. Analytics impacts on the organisation across the board, from understanding customers to improving operations. With the huge amounts of information so easily and cheaply available, analytics has grown to be a key differentiator in the market place. The adoption of analytics has unveiled a variety of new opportunities for an organisation to gain a competitive edge in the market (Laursen & Thorlund, 2010). However, it also entails some challenges that would act as barriers to the deployment of analytics. The critical success factor for adopting analytics is to closely interlink the organisation's strategy and analytics mission. This will enable the organisation to leverage analytics to strengthen the ability of business processes to meet business objectives (Laursen & Thorlund, 2010).

5. Conclusion

This paper conceptualises the term analytics by describing various definitions, looking at how analytics has been segmented and the drivers behind analytics. The common definition for analytics highlights the use of advanced statistical techniques and algorithms, in order to extract value out of information. Organisations face extremely competitive and changing market environments, and in order to remain competitive they need to be able to promptly anticipate changing market trends and opportunities. With this dynamic market place the role of

finance has shifted, and it is not merely an information processing factory but needs to operate on a more strategic level. This entails more emphasis on decision making. The role analytics plays in financial decision making is demonstrated in various areas, such as detecting fraud, budgeting and forecasting, risk management and customer insights. Application of analytics in these areas is shown to streamline information resulting in making decisions more efficiently and effectively. The case studies used highlight practical implementations of these applications and how essential they are becoming in business. Applying analytics presents an organisation with new opportunities, such as more efficient supply chains, agile financial performance, fast product innovation and better customer insights. However, at the same time, adopting analytics poses some challenges, which should be taken into account when implementing a solution. Further research could be conducted using secondary data and regression methods.

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7. References

Beasley, M.S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *Accounting Review*, 71(4), 443-465.

Bose, R. (2009). Advanced analytics: Opportunities and challenges. *Industrial Management & Data Systems*, 109**,** 155-172.

Chen, W.-S. & Du, Y.-K. (2009). Using neural networks and data mining techniques for the financial distress prediction model. *Expert Systems with Applications*, 36, 4075-4086.

Cokins, G. (2009). *Performance management: Integrating strategy execution, methodologies, risk, and analytics.* Hoboken, NJ: John Wiley & Sons.

Davenport, T. H. (2013). *Process innovation: Reengineering work through information technology*. Boston, MA: Harvard Business School Press.

Davenport, T.H., Harris, J.G. & Morison, R. (2010). *Analytics at work: Smarter decisions, better results*. Boston, MA: Harvard Business School Press.

Fanning, K.M. & Cogger, K.O. (1998). Neural network detection of management fraud using published financial data. *International Journal of Intelligent Systems in Accounting, Finance & Management*, 7, 21-41.

Harry, M. & Schroeder, R. 2005. *Six sigma: the breakthrough management strategy revolutionizing the world's top corporations*, Random House LLC.

IBM. (2010). *The New Value Integrator: Insights from the Global Chief Financial Officer Study*. IBM. Retrieved from http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=XB&appname=GBSE_GB_FM_USEN&htmlfid=GBE03277USEN&attachment=GBE03277USEN.PDF

ISIXSIGMA. 2010. *What is Six Sigma?* [Online]. Available: http://www.isixsigma.com/new-to-six-sigma/getting-started/what-six-sigma/ [Accessed 14 February 2014].

Kalakota, R. (2013). *Gartner: BI and Analytics a $12.2 Billion Market.* Retrieved from http://architects.dzone.com/articles/gartner-bi-and-analytics-122

Kirkos, E., Spathis, C. & Manolopoulos, Y. (2007). Data mining techniques for the detection of fraudulent financial statements. *Expert Systems with Applications,* 32, 995-1003.

Kohavi, R., Rothleder, N.J. & Simoudis, E. (2002). Emerging trends in business analytics. *Communications of the ACM,* 45, 45-48.

Kotsiantis, S., Koumanakos, E., Tzelepis, D. & Tampakas, V. (2006). Forecasting fraudulent financial statements using data mining. *Enformatika,* 12, 283.

Laursen, G.H. & Thorlund, J. (2010). *Business analytics for managers: Taking business intelligence beyond reporting.* Hoboken, NJ: John Wiley & Sons.

Lesser, E., Lavalle, S., Shockley, R., Hopkins, M.S. & Kruschwitz, N. (2011). Big data, analytics and the path from insights to value. *MIT Sloan Management Review,* 52, 14.

Liberatore, M.J. & Luo, W. (2010). The analytics movement: Implications for operations research. *Interfaces,* 40, 313-324.

Lichtenstein, S., Bednall, D.H. & Adam, S. (2008). Marketing research and customer analytics: Interfunctional knowledge integration. *International Journal of Technology Marketing,* 3, 81-96.

Liou, F.-M. & Yang, C.-H. (2008). Predicting business failure under the existence of fraudulent financial reporting. *International Journal of Accounting and Information Management,* 16, 74-86.

LUSTIG, I., DIETRICH, B., JOHNSON, C. & DZEKIAN, C. 2010. The analytic journey. Analytics.

McAfee, A. & Brynjolfsson, E. (2012). Big data: The management revolution. *Harvard Business Review,* 90**,** 60-66.

Natadarma, M. R. (2012). *Enterprise analytics adoption model: An exploratory study in transforming an organization towards analytical competitor.* (Unpublished Masters Dissertation). Delft University of Technology.

Negash, S. & Gray, P. (2008). Business intelligence. In: F. Burstein & C.W. Holsapple (Eds.), *Decision support systems* (pp. 175-193). Berlin: Springer.

Ngai, E., Hu, Y., Wong, Y., Chen, Y. & Sun, X. (2011). The application of data mining techniques in financial fraud detection: A classification framework and an academic review of literature. *Decision Support Systems,* 50, 559-569.

Patton, M.Q. (2005). *Qualitative research*, Wiley Online Library.

Phua, C., Lee, V., Smith, K. & Gayler, R. (2010). A comprehensive survey of data mining-based fraud detection research. *arXiv preprint arXiv:1009.6119*.

Player, S. (2009). *Managing through change: The power of rolling forecasts*. Ottawa: IBM Cognos Innovation Center for Performance Management.

Ravisankar, P., Ravi, V., Raghava Rao, G. & Bose, I. (2011). Detection of financial statement fraud and feature selection using data mining techniques. *Decision Support Systems,* 50, 491-500.

Riege, A.M. (2003). Validity and reliability tests in case study research: A literature review with "hands-on" applications for each research phase. *Qualitative Market Research: An International Journal*, 6, 75-86.

Schein, E.H. (2003). Organizational socialization and the profession of management. In: L.W. Porter, H.L. Angle, & R.W. Allen (Eds.), *Organizational influence processes* (pp. 283-94). New York: ME Sharpe.Sridharan, S. with Frankland, D., & Smith, A. (2012). The state of customer analytics 2012. Forrester.

Wareham, C. (2013). Why predictive analytics is important for your customer analytics strategy. Retrieved from http://blogs.adobe.com/digitalmarketing/analytics/why-predictive-analytics-is-important-for-your-customer-analytics-strategy/.

Yin, R.K. (2014). *Case study research: Design and methods.* Thousand Oaks, CA: Sage.

Tax Revenue, Stock Market and Economic Growth of Pakistan

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Abstract: The purpose of this paper is to examine the effects of capital market and fiscal policy influences in determining the nexus of economic growth in Pakistan from July 2003 to July 2012. The authors utilize ADF unit root test, Johansen Cointegration test, VECM test, Granger causality test and variance decomposition analysis to test the relationship among tax revenue, stock market and economic growth in Pakistan. Granger causality analysis is used to answer questions whether "Does tax revenue cause the economic growth?" or "Does tax revenue cause the capital market?". The results demonstrate that there is a bidirectional casualty between tax revenue and economic growth; and a unidirectional causality from capital market to tax revenue. The estimated result shows that growth of Pakistan economy is strongly contributed from the high collection of direct tax revenue and the development of financial market activity. The findings of this paper have important implications to current and potential investors in Pakistan economy to understand the economic condition of Pakistan and to assist them in making their investment decision.

Keywords: tax revenue; stock market; economic growth; Pakistan.

JEL Classification: F43; G10; H71

1. Introduction

This paper explores how taxation and financial system can affect the economic growth in Pakistan during the period of 2003-2012. This issue becomes our main focus due to the increasing performance of Pakistan economy throughout the study period. As we are aware the fact, that the economy of Pakistan is semi-industrialized with the main industries such as telecommunications, real estate, energy, apparel and textiles. And which currently have the 48th highest GDP in the world, and the second largest economy in South Asia. Historically, from 1960 to 2011, GDP of Pakistan averaged Rs. 4,745.79 billion reaching the all-time high i.e. Rs. 20,529.43 billion in 2011 and a record low of Rs. 359.82 billion in 1960. Most

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recent, the real GDP growth for 2011-12 has been estimated to increase approximately to 3.7 % as compared to 3.0% in the previous fiscal year 2011.

The reason of setting the higher growth then previous year 2011 is because of the tax legislation, trade reforms, further privatization of State Owned Enterprises (SOEs), financial sector reforms, human resource developments and social protection. The European Union (EU) approval of duty waiver on textile items is being pursued aggressively, which would help in improving the exports and providing support to the business environment. In recent times, Pakistan has also undergone political and constitutional changes. The civil societies and the other organizations are now playing a more active but independent role with government reforms are helping economic growth (Ministry of Finance [MoF], 2012).

Pakistan also reported an increase amount in the tax revenue collection. The total revenues reached to Rs 1,747.0 billion during July-March 2011-12, where 37% came from direct tax revenue contribution. Pakistan also reported an increasing investment in the capital market. Even though with the global economic imbalance that strike the world, Pakistan still manages to record the tremendous growth in the twelve month periods ended June 30, 2012. During this period the KSE-100 index rose by 10.4% from 12,496 points as at June 30, 2011 to 13,801 points as at June 30, 2012 which ranked Pakistan as the 3rd best emerging market in Asia. Since then, up to November 03, 2012 the Index rose to 16,101.15 points and crossed the barrier of 16,000 points first time in the history of Pakistan. Thus, in calendar year to date, KSE-100 Index has increased by 37%, making it the best performing emerging market in Asia. The average daily volume of shares traded was 131 million in FY-12 versus 95 million in FY11, while the average daily value traded was Rs. 3.97 billion versus Rs. 3.75 billion in FY-11. This report indicates that the market rally was driven by smaller stocks in calendar year 2012 (Karachi Stock Exchange [KSE], 2012).

As an emerging economy, it is crucial for the government of Pakistan to come forward with the strategy that might help to boost up the growth performance of the country. A research conducted by Shahbaz, Ahmed and Ali (2008), in the context of the stock development and economic growth of Pakistan from 1971 to 2006, shows that there is a positive relationship of stock market and the economic growth. The country growth rate can be increased by stabling the stock market. Another study by Ahmad, Khan and Tariq (2012) has been conducted to study the same context, but it is a comparative study of Pakistan and Bangladesh. Bangladesh stock market had better performance than Pakistan due to liquidity and stock market contribution in the economy growth.

Moreover the theoretical and empirical studies of some researcher such as Romero-Ávila and Strauch (2008), Soli, Harvey and Hagan (2008), Ilyas and Siddiqi

(2010), Ocran (2011) and Taha, Loganathan and Sukemi (2012) investigated the nexus among the stock market, the fiscal policy and the public debt that play a vital role to increase the country's economic growth rate. They suggested that taxation and financial market play pivotal role to determine the growth performance. Back to the origin of the linkages between such variables, the endogenous growth models have advocated that the relationship of stock market and tax revenue, mutually affect the economic growth. It is a model that explains that how a financial market and tax revenue both can affect the economic growth (Levine, 1991). As indicated above, voluminous research has been conducted to empirically examine the relationship between the stock market and the economic growth. However, the purpose of this study is to examine the joint effect of tax revenue and stock market, and to observe, how these economic indicators contribute in the economic growth. An accomplished stock market provides the investment opportunity, productivity, saving, the facility of goods and service that increase the economic growth. This paper contributes to the literature on the relationship between taxation, stock market and economic growth of Pakistan. Since, to the best of our knowledge, this is the first paper to concurrently examine such relationship in the context of Pakistan.

In this study, the relationship between capital market and fiscal policy has been determined in nexus of economic growth by using econometric technique. The unit root test shows that all variables are "integrated order 1". The long-term equilibrium relationship exists among the variables devoting 2 cointegrating vectors. The VECM results show that there is short term relationship between economic growth and direct tax revenue. It implies that previous value of direct tax and the development of stock market show crucial role in economic growth. The granger causality results show that there is bidirectional causality between the tax revenue and the economic growth.

The organizations of this study are as follow. The next section discussed chronologically of past studies followed by methodological section. We continue the discussion with the findings and conclude with the brief summary.

2. Literature Review

In 1911, the evidence was revealed that the financial development being one of the reasons for uplifting the economic development by using the society's savings (Schumpeter, 1912). Many other economists, also, explored and found that the financial developments are closely related to economic growth and gave the opinion that high economic rate can only be achieved through financial development (Goldsmith, 1969; Mckinnon, 1973). The dwelling financial system

has been considered as the main component of the modern economic development. In addition Hicks (1969) claimed that many of long term projects require huge investments that could not be financed by individual investors or through retained earnings. In order to accomplish these projects, the huge investments have been taken through individuals or consortium of financial intermediaries and the financial markets. The development of endogenous growth model theory, also, unfolded the fact that there is an effect of taxation on the economic growth. The tax revenue has been considered as the main stream of revenue for the state in order to meet their development and current expenditures. The economic theory has found the evidence of negative effect of higher tax rate on state economic efficiency. Marsden (1983) and Koester and Kormendi (1989) supported the supply side of hypothesis that the nations with the greater rate of tax causes with the lesser growth rate.

Realizing the importance of this issues Golob (1995) focused on the analysis; whether taxes are directly or indirectly linked with the financial markets. He suggests that the tax reforms affect on the financial market and is generalized into three categories. Firstly, the interest in loan is taxable; including the financial debt and securities is taxable. Secondly, the municipal securities, of which interest income are not taxable. Lastly, it consists of shares of the corporations that are publically traded. Adding to this, Holcombe and Lacombe (2004) argued with respects to the promising impact of taxes on state economic performance. They found that states that raised their income tax rates more than their neighbours had slower income growth which resulted to the reduction in per capita income. Their argument was supported by Clark (2007), Ardagna (2009) and Arin, Mamun and Purushothman (2009) they suggested that by increasing the tax rate, the private investment will decrease and ultimately will affect the tax revenue collection. Further they stressed that the state tax structure had a significantly influence on the returns of the stock market.

Much later Taha, Loganathan and Colombage (2011) tried to determine the role of economic growth in fostering government tax revenue in Malaysia. The results suggested that there is one way causal relationship between economic growth (GDP) and government tax revenue. They recommended that policy makers should consider the effective taxation policy formulation and implementation, in line with dynamic nature of economy. According to Ilyas and Siddiqi (2010), suggested that without imposing high tariff and tax rates, the state tax revenue collection can be enhanced by widening the tax network and by narrowing and mending the tax administration in the Pakistan.

A few studies have been done in order to investigate the relationship among the stock market, the tax revenue and the economic growth. Levine (1991), first time, described that the trading of financial assets in a stock market and the tax policy of

the state effect the economic growth. He analysed the endogenous growth model with and without stock market; examined the implication of stock market trading for risk sharing; allocation of resources; and growth and implication of tax policy had effected in the long run. However, his study concluded that the growth was directly affected and functioning of financial markets was indirectly affected by the tax policy. Futagami, Morita and Shibata (1993) described that the relationship exists, but there is low growth rate and suggested that there was need of further study to explore the relationship. Taha, Loganathan and Sukemi (2012) also examined the relationship among the stock market, the tax revenue, and the economic growth in the context of Malaysia. The results of this study supported that economic growths affected the pattern of tax revenue. The strong short run relationship of direct tax revenue and stock market with economic growth had been determined. It had been recommended that efforts should be made to intensify the economy to confirm that the state must maintain a maximum collection of revenue and to strengthen the investor's faith in the stock market.

The objective of this study is to explore the relationship among tax revenue, stock market and economic growth in the context of Pakistan. Pakistan is a developing country and tax is a main source of the state and much expenditure are covered through tax revenue. Thus, this study will be helpful for fiscal policy makers, either in favour of tax revenue or in promoting the stock market.

3. Research Methodology and Model

The main objective of this paper is to study interlinks among the three important macroeconomic variables, namely: economic growth, stock market and tax revenue in Pakistan. To realize this, we have to utilise monthly data from July 2003 to July 2012 of gross domestic product (GDP), the closing value of KSE-100 Index, and direct tax revenue to proxy economic growth stock market, and tax revenue respectively. All the data is in local currency unit (Rs.) and has been transformed to natural log prior analysis. The source of data for GDP, Direct Tax and KSE-100 Index were obtained from State Bank of Pakistan (SBP), Federal Board of Revenue (FBR) and Karachi stock exchange (KSE) respectively. Although there is no monthly GDP data available we have split the data into monthly basis (Baxter, 1998). The different econometrics tools have been used to measure the relationship among the tax revenue, stock market and economic growth. Figure 1 visualised the research methodology that has been adopted in order to measure the relationship in this study.

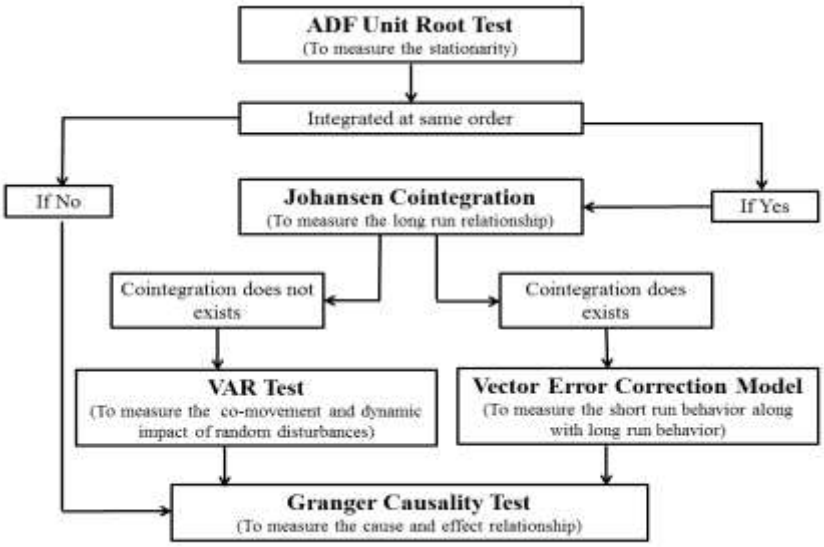

Figure 1. Flow Diagram of Research Methodology

In order to analyse the data, firstly, the Augmented Dickey Fuller (ADF) Unit Root test has been applied for detecting the stationarity of data whether there is unit root in every variable. The Schwarz Info Criterion (SBC) has been used for choosing the lag differences. If the data becomes stationary at the same order (are cointegrated), then Johansen Cointegration Test will be used to measure the long term relationship among the DTAX, KSE-100 and GDP. Thirdly, in order to find the short term relationship, VECM has been applied, to explain the short term change in one variable. The Granger Causality Test has been applied in order to measure the bi-directional cause and effect relationship means that both variables can cause and affect each other. In the end, the Variance Decomposition indicates the amount of information each variable contributes to the other variables in a vector auto-regression (VAR) models (Lütkepohl, 2007). Variance decomposition determines how much of the forecast error variance of each of the variable can be explained by exogenous shocks to the other variables. Variance decomposition reveals how much of the changes in each variable may be explained by itself, and how much is explained by other variables.

4. Analysis and Discussion

The descriptive statistics of direct tax (DTAX), stock market (KSE-100 Index) and economic growth (GDP) have been estimated in order to analyse the mean, standard deviation and normality of data. The results are shown in Table 1.

Table 1. Descriptive Statistics of DTAX, KSE-100 Index and GDP

Description	DTAX	KSE-100	GDP
Min	8.72	8.24	12.77
Max	11.83	9.62	13.17
Mean	10.15	9.12	13.02
Standard Deviation	0.74	0.36	0.11
Skewness	-0.03	-0.76	-0.57
Kurtosis	2.24	2.60	2.23
Jarque-Bera	2.62	11.32	8.65
	[0.27]	[0.00]	[0.01]

Source: Author calculations. DTAX, KSE-100 and GDP are expressed in natural logarithms and are calculated in local currency (Rupee). P-values are given in parenthesis.

The results of Table 1 show that the results of skewness of DTAX, KSE-100 Index and GDP are negatively skewed, and the data series exhibit increasing trend throughout the sample period. The JB-stats show that the KSE-100 Index and GDP series have highly significant results at 5% level and the acceptance of hypothesis show that the series are not normally distributed except direct tax. At the first step, ADF Unit Root test has been used to check that the economic variables are stationary. The ADF test includes constant with no trend and constant with trend at zero difference level *I(0)*, and, then, at first difference level *I(1)* of every variable. The lag differences (*k*) incorporated in ADF test has been chosen by using Schwarz Info Criterion (SBC). The test results of ADF are given in Table 2.

Table 2. Unit root estimation results

	Level			First difference			*I*(d)
	DF-GLS	ADF	PP	DF-GLS	ADF	PP	
DTAX	3.88	-2.11	0.28	-1.93*	-8.97*	-39.09*	*I(1)*
KSE-100	0.13	-2.02	1.35	-2.19	-8.83*	-8.81	*I(1)*
GDP	-1.61	-2.09	-13.48	-13.48*	-13.89*	-104.96	*I(1)*

Notes: Asterisks (*) denote statistically significant at 1% significance levels

According to results shown in Table 2, the time series data of each variable (i.e. DTAX, KSE-100 and GDP) at zero level *I(0)* is nonstationary at 10% level of significance by using SBC lags criterion. At order *I*(1) at 1% level of significance, DTAX, KSE-100 and GDP became stationary by using SBC lags criterion. So, the data of each variable became stationary, this suggests that entire shocks that would

be impermanent and their effects would be abolished over time as the data regresses to their long run variance.

The long run relationship has been tested by using Likelihood Ratio (LR) Tests in order to find the number of cointegrating vectors proposed by Johansen (1995). The test results along with Trace Statistics Tests and Maximum–Eigen Statistics for DTAX, KSE-100 and GDP, shown in Table 3.

Table 3. Johansen Cointegration Test for DTAX, KSE-100 and GDP

Hypothesized no. of CE	Eigen Value	Trace Statistics	Critical Value	Prob**	Results
None* r=0	0.21	41.62	27.07	0.00	Yes
At Most 1* r≤1	0.12	17.17	13.43	0.02	Yes
At Most 2* r≤2	0.03	3.52	2.71	0.06	Yes
Hypothesized no. of CE	Eigen Value	Trace Statistics	Critical Value	Prob**	Results
None* r=0	0.21	24.46	18.89	0.00	Yes
At Most 1* r≤1	0.12	13.65	12.30	0.06	Yes
At Most 2* r≤2	0.03	3.52	2.71	0.06	Yes

Note: Cointegration Test of DTAX, KSE-100 and GDP of Pakistan. * denotes rejection of hypothesis at the 10% significance level. ** MacKinnon –Haug-Michelis (1999) p-values.

Table 3 described that the long term equilibrium relationship exists among DTAX, KSE-100 and GDP in terms of Pakistan. The results of trace statistics and Maximum –Eigen Statistics has indicated that there are three (3) numbers of cointegration vectors exist at the 10% level which endorse the outcome of the Pesaran, Shin and Smith(2001) cointegration approach. As the long term relationships had been estimated, the next step is to measure the short term coefficients.

Based on the VECM result shown in Table 4, there is short term relationship between economic growth and direct tax revenue. It implies that previous value of direct tax and the development of stock market show crucial role in economic growth.

Table 4. VECM Estimates

VECM	$\triangle GDP_t$	$\triangle DTAX_t$	$\triangle KSE\text{-}100_t$
ECT_{t-1}	0.01	-0.88*	-0.05
	(1.18)	(-4.19)	(-1.04)
Constant	0.00*	0.07	0.01
	(3.89)	(1.55)	(0.63)

Note: VECM Test Statistics of DTAX, KSE-100 and GDP of Pakistan. *significance at the 10% level. T-statistics are given in parentheses.

The Granger Causality test has been applied in order to measure the direction of cause and effect among the variables, shown in Table 5.

Table 5. Granger Causality Results

Null Hypothesis	F-stat	Prob*	Causality
DTAX does not Granger cause GDP	5.39	0.01*	Yes
GDP does not Granger cause DTAX	3.02	0.05*	Yes
Null Hypothesis	F-stat	Prob*	Causality
DTAX does not Granger cause KSE-100	1.04	0.36*	No
KSE-100 does not Granger cause DTAX	7.67	0.00*	Yes
Null Hypothesis	F-stat	Prob*	Causality
KSE-100 does not Granger cause GDP	2.71	0.07	Yes
GDP does not Granger cause KSE	0.75	0.47	No

Table 5 results indicate that there is bidirectional causality relationship between direct tax (DTAX) and growth (GDP) at 10% level of significance. But, there is unidirectional causality between stock market (KSE) and direct tax (DTAX) at 10% level of significance.

In the end, the case of stock market (KSE) and economic growth (GDP), there is also unidirectional causality at 10% level of significance. The findings of the variance decomposition analysis of GDP, DTAX and KSE-100 at seven different periods, i.e. 1, 5, 10, 15, 20, 25 and 30 horizons show in Table 6, Table 7 and Table 8.

Table 6. Variance Decomposition of GDP, DTAX and KSE

Variance Decomposition of GDP			
Period	GDP	DTAX	KSE-100
1	100.00	0.00	0.00
5	97.75	2.18	0.07
10	97.86	1.94	0.20
15	97.54	1.97	0.50
20	97.13	2.01	0.84
25	96.74	2.08	1.18
30	96.38	2.14	1.48

Table 6 shows that the forecast error variance of economic growth due to stock market is relatively low than the forecast error variance of economic growth due to government tax revenue.

Table 7. Variance Decomposition of DTAX, GDP and KSE

Variance Decomposition of DTAX			
Period	GDP	DTAX	KSE-100
1	0.03	99.97	0.00
5	1.25	95.14	3.61
10	2.63	93.75	3.62
15	3.69	92.62	3.70
20	4.60	90.67	3.74
25	5.36	90.88	3.77
30	5.99	90.22	3.79

Table 7 shows that the forecast error variance of direct tax revenue due to stock market is relatively low than the forecast error variance of direct tax revenue due to economic growth. Table 7 shows that the forecast error variance of stock market due to direct tax revenue is relatively low then the forecast error variance of stock market due economic growth. The variance cause by dependent and independent variables due to the past innovation is becoming less significant. Overall the variance composition results lead us to conclude that the strong growth of Pakistan economy is strongly contributed the high collection of direct tax revenue and the development of financial market activity. In last, the results of the forecast error variance suggest that the feedback of stock market to direct tax revenue and economic growth is relatively stronger and consistent with the long run and short run results.

Table 8. Variance Decomposition of KSE-100, GDP and DTAX

Variance Decomposition of KSE-100			
Period	GDP	DTAX	KSE-100
1	2.18	1.41	96.40
5	10.41	2.78	86.82
10	12.67	2.91	84.42
15	14.18	2.83	83.00
20	15.34	2.76	81.90
25	16.25	2.71	81.04
30	16.97	2.68	80.36

5. Conclusion

The relationship among the fiscal policy, the capital market and the economic growth has been the subject of extensive research of the current decade. The research is going on to explore the relationship among tax revenue, KSE-100 index and economic growth in case of Pakistan. Initially, ADF Unit Root and PP Unit

Root test have been applied to determine whether these economic variables have unit root. The test result indicates that the time series data is stationary at order one. Secondly, Johansen test has been used to measure the long run equilibrium relationship and the results of test reported that there long run equilibrium exists among the variables.

The short term relationship determined by using VECM, shows that the previous value of direct tax and the development of stock market play a crucial role in economic growth. The Granger causality test has been used to verify the direction of causality between the variables of Pakistan. The test results show that there is: only bidirectional causality among tax revenue and economic growth; and there is a unidirectional causality between KSE index and economic performance.

The results of the current research suggest to policy makers that there is a relationship among the tax revenue, stock index and economic growth. While formulating any new fiscal or capital market policy, the impact of the designed policy on the other market must be kept in mind. The investor while making investment in the capital market must know about the tax system of the country. The analysis shows that the present tax system of Pakistan is not so efficient to attract the persons to invest in its capital market. The government of the state should focus on the efficient tax collection system, because it's the only way to bring the developments and to meet the expenditures.

6. References

Ahmad, Z., Khan, A.A. & Tariq, A. (2012). Stock market development & economic growth: a comparative study of Pakistan & Bangladesh. *African Journal of Business Management*, Vol. 6, No. 8, pp. 2985-2989.

Ardagna, S. (2009). Financial market's behaviour around episodes of large changes in the fiscal stance. *European Economic Review*, Vol 53, No. 1, pp. 37-55.

Arin, K.P., Mamun, A. & Purushothman, N. (2009). The effects of tax policy on financial markets: G3 evidence. *Review of Financial Economics*, Vol. 18, No 1, pp. 33-46.

Baxter, M.A. (1998). Interpolating annual data into monthly or quarterly data, working paper, Government Statistical Service Methodology Series No. 6.

Clark, W.S. (2007). Tax policy for investment. *e-Journal of Tax Research,* Vol. 5, No. 2, pp. 244-265.

Federal Board of Revenue. (2012). *FBR Year Books*. Retrieved from http://www.cbr.gov.pk/ (accessed 11 November 2012).

Futagami, K., Morita, Y. & Shibata, A. (1993). Dynamic analysis of an endogenous growth model with public capital. *Scandinavian Journal of Economics*, Vol. 95, No 4, pp. 607-625.

Goldsmith, R.W. (1969). *Financial Structure & Development*. New Haven: Yale University Press.

Golob, J.E. (1995). How would tax reform affect financial markets?. *Economic Review - Federal Reserve Bank of Kansas City*, Vol. 80, No 4, pp. 19-39.

Hicks, J.R. (1969). *A Theory of Economic History*. Oxford: Clarendon Press.

Holcombe, R.G. & Lacombe, D.J. (2004). The effect of state income taxation on per capita income growth. *Public Finance Review*, Vol. 32, No. 3, pp. 292–312.

Ilyas, M. & Siddiqi, M.W. (2010). The impact of revenue gap on economic growth: a case study of Pakistan. *International Journal of Human & Social Sciences*, Vol. 5, No. 11, pp. 753-758.

Johansen, S. (1995). *Likelihood-based Interface in Conitegrated Vector Auto Regressive Models*. Oxford: Oxford University Press.

Karachi Stock Exchange. (2012). *Historical Data*. Retrieved from http://www.kse.com.pk/ (accessed 11 November 2012).

Karachi Stock Exchange. (2012). *KSE Annual Report 2012*. Retrieved from http://www.kse.com.pk/ (accessed 11 November 2012).

Koester, R.B. & Kormendi, R. C. (1989). Taxation, aggregate activity & economic growth: cross country evidence on some supply-side hypothesis. *Economic Inquiry*, Vol. 27, No. 3, pp. 367-386.

Levine, R. (1991). Stock markets, growth, & tax policy. *The Journal of Finance*, Vol. 46, No. 4, pp. 1445-1465.

Lütkepohl, H. (2007). General-to-specific or specific-to-general modelling? an opinion on current econometric terminology. *Journal of Econometrics*, Vol. 136, No. 1, pp. 319-324.

MacKinnon, J.G., Haug, A. & Michelis, L. (1999). Numerical distribution functions of likelihood ratio tests for cointegration. *Journal of Applied Econometrics*, Vol. 14, No. 5, pp. 563-577.

Marsden, K. (1983). Links between taxes & economic growth: some empirical evidence. *World Bank Staff Working Papers No. 605*.

Mckinnon, R.I. (1973). *Money & Capital in Economic Development*. Washington DC: The Brookings Institution.

Ministry of Finance. (2012). *Pakistan Economic Survey 2011-12*. Retrieved from http://www.finance.gov.pk/ (accessed 12 November 2012).

Ocran, M.K. (2011). Fiscal policy & economic growth in South Africa. *Journal of Economic Studies*, Vol. 38 No. 5, pp. 604-618.

Pesaran, M.H., Shin, Y. & Smith, R. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, Vol. 16, pp. 289-326.

Romero-Avila, D. & Strauch, R. (2008). Public finances & long-term growth in Europe: evidence from a panel data analysis. *European Journal of Political Economy*, Vol. 24, No. 1, pp. 172-191.

Schumpeter, J. (1912). *The Theory of Economic Development*, leipzig: Dunker & Humblot, 1912; translated by Redevers Opie. Cambridge, MA: Harvard University Press.

Shahbaz, M., Ahmed, N. & Ali, L. (2008). Stock market development & economic growth: ARDL causality in Pakistan. *International Research Journal of Finance & Economics*, Vol. 14, pp. 182-195.

Soli, V.O., Harvey, S.K. & Hagan, E. (2008). Fiscal policy, private investment & economic growth: the case of Ghana. *Studies in Economics & Finance*, Vol. 25. No. 2, pp. 112-130.

State Bank of Pakistan. (2012). *Hand Book of Statistics on Pakistan Economy*. Retrieved from http://www.sbp.org.pk/ (accessed 12 November 2012).

Taha, R., Loganathan, N. & Colombage S.R.N. (2011). The effect of economic growth on taxation revenue. *International Review of Business Finance*, Vol. 7, pp. 319-329.

Taha, R., Loganathan, N. & Sukemi, M.N. (2012). Towards economic growth in a developing country: the impact of taxation & financial system. *Proceedings of International Conference on Management, Economics & Finance (ICMEF 2012)*, Sarawak, Malaysia, October 15-16.

Analysis of the Level and Structure of the Romanian State Budget Revenues during 2009-2013

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Abstract: The state budget includes the shares of national interest and it establishes the main mobilized financial resources available to the state, which are used to achieve social and cultural actions, defending the country, ensuring public order, the social protection and others alike. The economic relationships that determine the state budget find their widest expression in the macroeconomic correlations which are established in the economy and society. The objective of this paper is to analyze the level and structure of the resulted state budget revenues of Romania in the period 2009 - 2013, due to financial policy promoted in the public financial resources domain. This theme was chosen because of the importance and timeliness of the financial, fiscal - budget policy issues in the current economic environment at the national and international level. The methodology used to analyze the level and structure of state budget revenues was the calculation of level indicators (volume of public revenues, the share of public revenue in GDP and the average per capita of the public revenue), and the indicator on g_i structure. In conclusion, the public revenues expressed in real prices in the year 2013 were in 84,637.88 million lei. Through the analysis it is confirmed the importance of VAT in the financial resources category of Romania, which increased as the tax rate in 2010 from 19% to 24%. The share of total revenues in GDP was an upward trend except in 2013 which decreased by 0.4 percentage points.

Keywords: income; state budget; indicator; share

JEL Classification: H20; H21

1. Introduction

The relationships determined by the constitution of public financial resources occur mainly through taxes, mandatory contributions and other payments of public institutions, as well as the loans of internal and external states. Then the social relationships created between the state and its members in the allocation and use of

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public financial resources process take the form of public and semi-public utilities and services, which the state provides to them and to society in general.

The state budget includes the shares of national interest and it establishes the main mobilized financial resources available to the state, which are used to achieve social and cultural actions, defending the country, ensuring public order, the social protection and others alike. The economic relationships that determine the state budget find their widest expression in macroeconomic correlations which are established in the economy and society, particularly in relation to the level, evolution and distribution of gross domestic product, the main source of public financial resources.

State budget tries to reflect an image as close as possible to the real situation of the economy. Therefore, it represents a financial operational plan, at macroeconomic level, established by the competent bodies of the State and under which they are to operate and develop the society from the economic, social and financial point of view, for the period established in the plan. Although the state budget is drawn up in Romania during a fiscal year, by which it often provides the necessary conditions for the continuation of funding in the medium term, by including public expenditures (investments) that cannot be completed during a budgetary exercise.

2. Research Methodology

The paper includes the analysis of the state budget revenues of Romania in the period 2009-2013, in terms of its level and structure. In this regard there were taken into account and determined the key indicators of the level and structure, the analysis ending with indicators on the dynamics of public revenues. In order to conduct the study there were used data resulting from the budgetary execution.

In order to analyze the level and structure of the state budget revenues, there were calculated the level indicators and indicators of classical structure, used in such studies.

The indicators on the level of used public revenues are:

a) the volume of public revenues, expressed in nominal value (in current prices)

b) the share of public revenue in GDP, using the formula:

$$P_{V/GDP} = \frac{V}{GDP} \; x \; 100 \qquad (1)$$

where: $P_{V/GDP}$ – represents the share of public revenue in GDP

V - represents the volume of public revenue,

GDP – the Gross Domestic Product.

c) the average public revenue per capita (loc), using the formula:

$$V_{loc} = \frac{V}{\text{population}} \qquad (2)$$

In order to analyze the structure, we used the shares of each category of public income in total determined income according to formula (3)

$$g_i = \frac{V_i}{V} \, x \, 100 \qquad (3)$$

Where: g_i – represents the share of income *i* in total income or in an income group;

V_i – represents income whose share is calculated;

V - represents the total income or an income group.

3. Research Results

The Volume of Public Revenues

This indicator represents the amount of public revenues. According to the budgetary execution, the public revenue volume of Romania had an upward trend in the period 2009 - 2013, with a significant growth particularly in the first period, as illustrated by the graph in Figure 3.

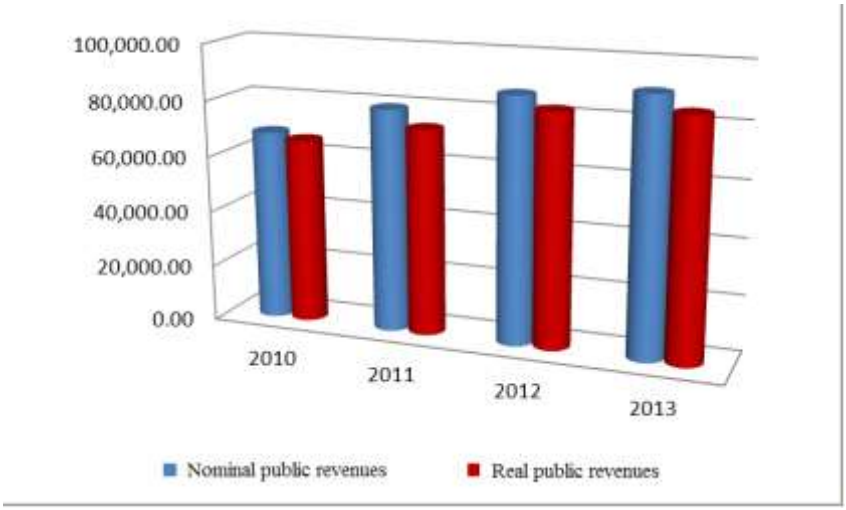

Figure 3. The volume of public revenues in Romania in the period 2009-2013

The indicator can be expressed also in constant prices. In order to obtain the evolution of the volume of public revenues in constant prices, we resorted to GDP

deflator. In Table 1 there are summarized all values on public revenue from Romania, in current and constant prices. In both cases there is an increase in public revenues.

Table 1. The volume of public revenues in Romania

	2009	2010	2011	2012	2013
Nominal public revenues	54678.30	68050.70	79371.20	87171.50	90561.40
GDP	498007.50	513640.80	556708.40	587466.20	628581.00
Ip	-	1.03	1.08	1.06	1.07
Public revenues in real size	-	65979.49	73230.95	82607.49	84637.88

We may evidently observe the difference in value between the public revenue in nominal value and the actual, real value. In the case of nominal public revenues, thus expressed in current prices, the value recorded in 2009 was only of 54678.30 million lei in 2013, it increased to 90,561.40 million lei, in the case of public revenues expressed in real prices, thus calculated, taking into account the price index in the year 2013 it was of 84,637,88 million lei.

The evolution of value of each component of public financial resources can be seen easily by analyzing the data in the following table (Table 2).

Table 2. The evolution of main budget revenue in the period 2009-2013

	2009	2010	2011	2012	2013
TOTAL REVENUE	54678.30	68050.70	79371.20	87171.50	90561.40
Current income	53530.00	64825.10	77058.30	83577.10	86694.00
Fiscal income	49405.00	56305.10	69527.70	75615.80	80175.20
Profit taxes, wages, income and capital gains	16796.70	14460.10	15604.10	18685.90	20040.90
Profit Taxes	11869.20	10090.90	10289.20	10824.70	10893.20
Payroll and income tax	3558.20	3531.00	4607.40	6901.50	7894.60
Other taxes on income, profits and capital gains	1369.40	838.30	707.50	959.70	1253.10
Taxes on property	54.00	4.50	-0.50	0.40	51.00
Taxes on goods and services	31789.80	41222.40	53227.90	56202.20	59432.20
VAT	17073.50	24263.60	34742.00	35586.30	36610.30
Excise	14272.10	16212.30	17805.90	18910.80	19798.00
Other taxes on goods and services	0.10	16.40	10.30	16.90	419.10

Tax on the use of goods, authorizing the use of goods or conducting activities	444.00	730.10	669.80	1688.10	2604.80
Tax on foreign trade (customs duties)	655.50	574.00	673.70	707.30	620.00
Other taxes and fiscal charges	108.90	44.10	22.50	20.10	31.10
Insurance contributions	414.70	395.00	215.40	155.20	160.50
Non-tax revenues	3710.30	8125.00	7315.20	7806.00	6358.40
Subsidies					
Income from capital	39.30	282.60	275.60	306.40	299.80
Financial operations	1.90	6.30	1.10	4.70	6.60

The current revenues represent the main public financial resource and we can observe the importance of the amounts from income tax. Moreover, tax revenues are those that record the largest increase, from 49.405 million lei in 2009 to 80,175.20 million in 2013. An important role in this growth had the taxes and duties on goods and services, especially VAT, which increased as the tax rate in 2010 from 19% to 24%. There were recorded increases also in the payroll tax and income from 3558.20 in 2009 to 7894.60 in 2013. There are also tax revenues that have remained relatively around the same values, the profit tax for example (11869.20 million in 2009, 10,893.20 in 2013) and foreign trade taxes, customs duties 655.50 million lei in 2009 and 620 million in 2013. In terms of insurance contributions, they declined from 414.70 million in 2009 to 160,500,000 in 2013. The non-tax revenues have also increased, almost doubling (from 3,710 million lei in 2009 to 6,358 million in 2013), but the most significant increase was recorded in the income from capital.

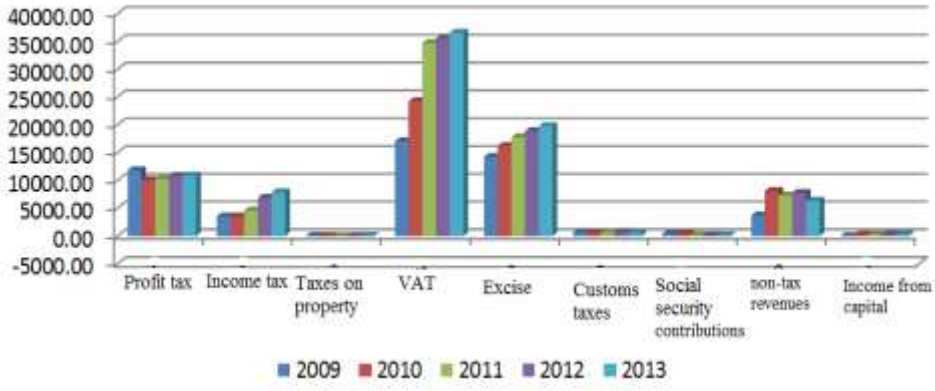

Figure 4. Main budget revenue in the period 2009-2013

The graph shown in Figure 4 confirms the importance of VAT in Romania in the category of financial resources throughout the analyzed period.

The Share of Public Revenue in GDP

According to the budgetary execution data in the last five years, the share of total revenues in GDP for the analyzed period had an upward trend until the end of 2012, a decrease of 0.4 percentage points was registered in the last analyzed year (see Table 3 and Figure 5).

Table 3. The share of total public revenue in GDP

	2009	2010	2011	2012	2013
Total public revenue (mil. Lei)	54678.30	68050.70	79371.20	87171.50	90561.40
GDP (- mil. Lei)	498007.5	513640.8	556708.4	587466,2	628581,3
Share of total revenues in GDP (%)	11.0	13.2	14.3	14.8	14.4

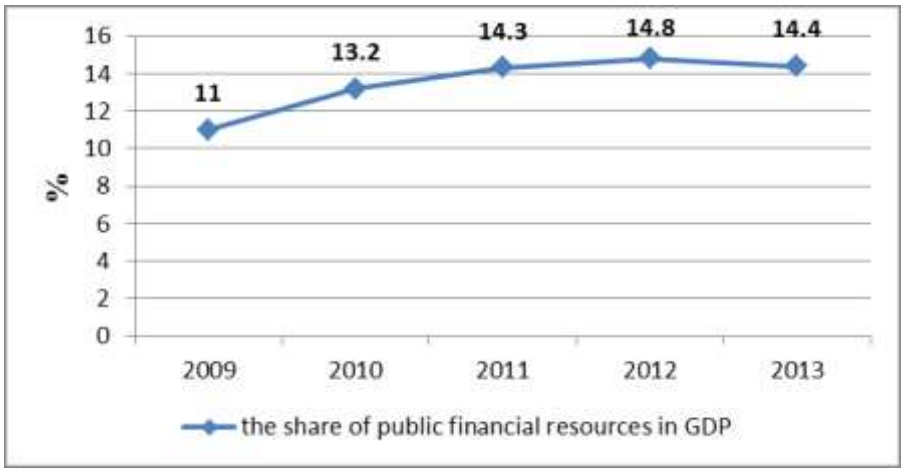

Figure 5. The share of public financial resources in GDP during 2009 - 2013

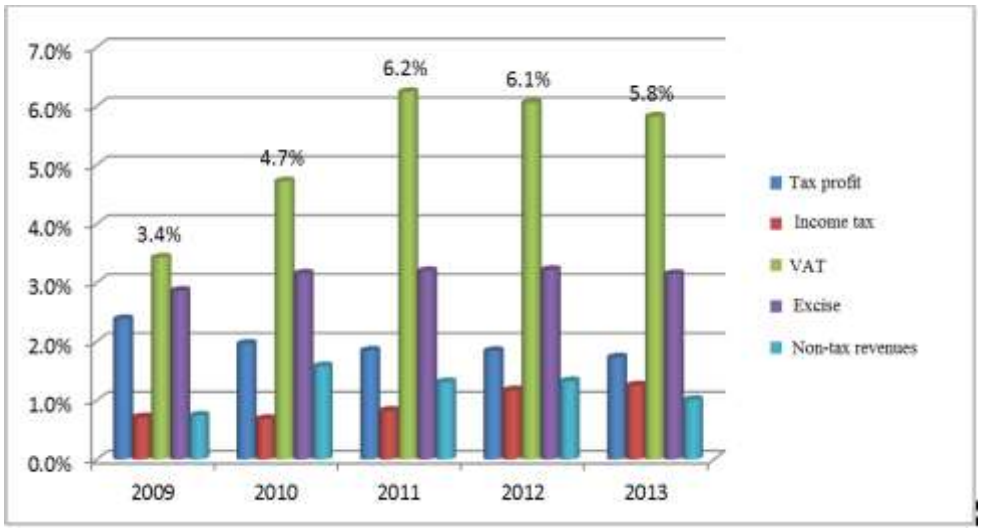

Figure 6. The share of main financial resources in GDP in the period 2009-2013

A detailed analysis can be achieved using the share in GDP on public financial resources categories. Figure 6 contains the shares in GDP by financial resources categories for every analyzed year expressed graphically. As a share of GDP, the tax revenues are the most important financial resources for the entire period, their share rising from 9.9%, as it was at the beginning of the period, to 12.8% in 2013. From this income, the VAT and excise shares are in turn the most important and they experienced a continuous growth, especially in the case of VAT. The following, as importance of the value of the tax share in GDP, is the profit and the payroll tax and income. All these values do nothing but to confirm the evolution of the previous indicator, namely the evolution of public revenue volume on component structures. The graph in Figure 6 reflects once again the significant share in the GDP share of financial resources from VAT receipts, on the entire analyzed period.

The Average Public Revenue per Capita

The third analyzed level indicator is the average public revenues per capita. Calculated as the ratio between total public revenue and population of Romania during the five analyzed years, the indicator gives us an insight into public financial resources corresponding to each inhabitant of Romania.

Table 5. Evolution of the average per capita public revenue

	2009	2010	2011	2012	2013
Total public revenue (mil).	54678.3	68050.7	79371.2	87171.5	90561.4
P (per capita)	20439959	20291298	20224396	20106420	20027458
TPR / P (mill. / per capita)	0.002675	0.003354	0.003925	0.004336	0.004522

The analysis of the indicator shows a continuous increase of budget revenues per capita in Romania, during the entire analyzed period, the growth is seen graphically in the following figure.

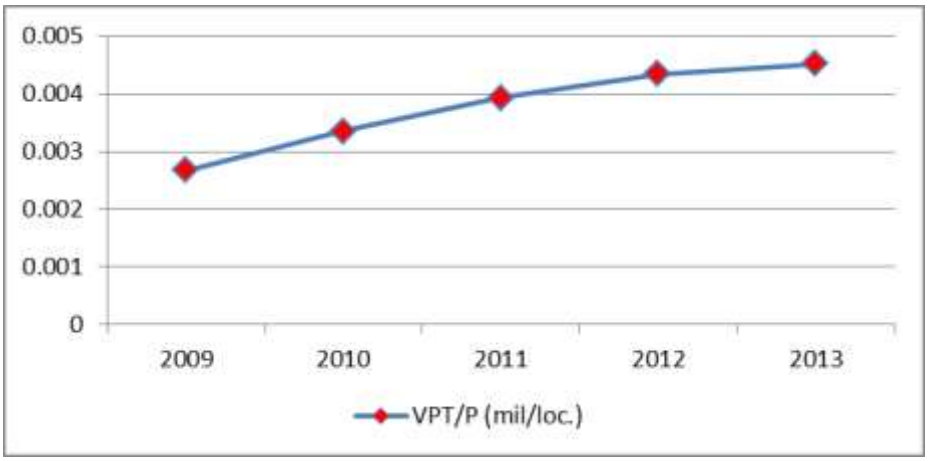

Figure 7. The evolution of the average public revenues per capita in Romania in 2009-2013

Note: VPT - represents total public revenue; loc. – per capita

In order ***to analyze the structure of public revenues***, it was used the calculation of the share of each category of pubic revenue in total revenues, but also the calculation of the share of each category of income group to which it belongs, based on the above formula, namely:

$$g_i = \frac{V_i}{V} \; x \; 100$$

where: g_i – represents the income share *i* in total income or in an income group;

V_i – represents income whose share is calculated;

V - is the total income or an income group.

We determined, therefore, the following indicators:

1) The share of fiscal revenue in total revenue;
2) The share of insurance contributions in total revenues;
3) The share of non-tax revenues in total revenues;
4) The share of capital income in total revenues;
5) The share of profit tax in tax revenues;
6) The share of payroll tax and income in fiscal revenues;
7) The share of VAT in tax revenues;
8) The share of excise tax in tax revenues;
9) The share of customs duties in tax revenues.

The values obtained from the calculations are summarized in Tables 6 (share in total public revenues) and 7 (the shares in total tax revenues).

Table 6. The share of public revenue categories in total revenues (%)

	2009	**2010**	**2011**	**2012**	**2013**
The share of tax revenue in total revenues	90.36	82.74	87.60	86.74	88.53
The share of insurance contributions in total revenues	0.76	0.58	0.27	0.18	0.18
The share of non-tax revenues in total revenues	6.79	11.94	9.22	8.95	7.02
The share of capital income in total revenues	0.07	0.42	0.35	0.35	0.33

Table 7. The share of total tax revenue (%)

	2009	**2010**	**2011**	**2012**	**2013**
Income Taxes	24.02	17.92	14.80	14.32	13.59
Payroll and income tax	7.20	6.27	6.63	9.13	9.85
Other taxes on income, profits and capital gains	2.77	1.49	1.02	1.27	1.56
Taxes on property	0.11	0.01	0.00	0.00	0.06
VAT	34.56	43.09	49.97	47.06	45.66
Excise	28.89	28.79	25.61	25.01	24.69
Other taxes on goods and services	0.00	0.03	0.01	0.02	0.52
Tax on use of goods, authorizing the use of goods or the performance of activities	0.90	1.30	0.96	2.23	3.25
Tax on foreign trade (customs duties)	1.33	1.02	0.97	0.94	0.77
Other taxes and fiscal charges	0.22	0.08	0.03	0.03	0.04

4. Conclusion

The relationships determined by the constitution of public financial resources occur mainly through taxes, mandatory contributions and other payments of public institutions, as well as the loans of internal and external states. The state budget includes the shares of national interest and it establishes the main mobilized financial resources available to the state, which are used to achieve social and cultural actions, defending the country, ensuring public order, the social protection and others alike.

The paper includes the analysis of state budget revenues of Romania in the period 2009-2013, in terms of its level and structure. In this regard there were taken into account and determined the key indicators of level and structure, the analysis concluded with indicators on the dynamics of public revenues. In order to conduct the study there were used data resulting from the budgetary execution. After analyzing the level and structure of the Romanian state budget revenues in the period 2009 - 2013 we have concluded that: the volume of public revenues represent the amount of public revenues. According to the budgetary execution, the public revenue volume of Romania had an upward trend in the period 2009 - 2013, with a significant growth particularly in the first period. In the case of nominal public revenues, thus expressed in current prices, the value recorded in 2009 was only of 54678.30 million lei in 2013, it increased to 90,561.40 million lei, in the case of public revenues expressed in real prices, thus calculated, taking into account the price index in the year 2013 it was of 84,637,88 million lei. The current revenues represent the main public financial resource and we can observe the importance of the amounts from income tax. Moreover, tax revenues are those that record the largest increase, from 49.405 million lei in 2009 to 80,175.20 million in 2013. An important role in this growth had the taxes and duties on goods and services, especially VAT, which increased as tax rate in 2010 from 19% to 24%. Increases were also recorded in the payroll tax and income from 3558,20 in 2009 to 7894,60 in 2013.

According to the budgetary execution data in the last five years, the share of total revenues in GDP for the analyzed period had an upward trend until the end of 2012, a decrease of 0.4 percentage points was registered in the last analyzed year. As a share of GDP, the tax revenues are the most important financial resources for the entire period, their share rising from 9.9%, as it was at the beginning of the period, to 12.8% in 2013.

The share of public revenue in GDP indicator has provided an overview on public financial resources accruing to each inhabitant of Romania. The indicator analysis showed a continuous increase in budget revenues per capita in Romania, during the entire analyzed period.

5. Acknowledgment

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6. Bibliography

Nastase, Gabriel I. (2013). *Buget si trezorerie publica*/*Budget and public treasury*. Bucharest: Pro Universitaria.

Mladen, Luise & Manolescu, Gheorghe (2012). *Sistemul bugetar si trezoreria publica in Romania/ Budget system and public treasury in Romania*. 1st edition. Bucharest: Editura Universitara.

Ungureanu, M. A. (2011). *Buget si trezorerie publica*/ *Budget and public treasury.* 1st edition. Bucharest: Editura Universitara.

Ministry of Finance: Reports on final budget execution years 2009-2013.

Risk Prevention Strategies and the SWOT Analysis for the Implementation of the SMEs' Business Plan

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Abstract: This theme is targeting the importance of implementing the business plan of a small and medium company that has as aim the creation of the added value through research and innovation in the management of human resources performance based on information technology domain. The objective is to increase the economic competitiveness and development of knowledge-based economy whereas by the implementation of the project, it increases the company's profitability, creating a competitive advantage resulting in innovative products, as well as the effectiveness of companies that use human resources evaluation platform. The need identified on the market to which the SMEs wish to answer by implementing the plan is represented by the nationwide lack of a complex solution covering both the evaluation and the management of human resources performances. The used methodology can be found in the analysis, developing a strategy for preventing financial, human, market, marketing - image risks and also the physical ones. With the SWOT analysis it was observed one of the strengths i.e. the existence of a single management system of employee performance that includes assessment specific features. In conclusion, there are no software solutions at national level, which would assess the human resources of an organization, following specific indicators of that organization, which could combine the assessment methods in order to achieve more a more efficient and versatile assessment.

Keywords: management; human resources; objective; assessment; performance

JEL Classification: E17; E20

1. Introduction

The general objective of the proposed project is to create an added value through research and innovation in human resources performance management based on the information technology. The proposal is based on the results obtained from a company in the domain of human resources performance management, software based. This objective is consistent with the objective of Operation 2.3.1. of the Sectoral Operational Programme Increasing the Economic Competitiveness, Priority Axis 2, Key Domain of Intervention 2.3. The beneficiary is a start-up in the information technology domain, and the project aims at introducing a new,

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innovative product to the market, resulted from the research and development activity, namely the human resources assessment solution, designed for all public or private organizations wishing to implement a platform for evaluating human resource performance. The objective is consistent with the general objective of SOP ECC of increasing economic competitiveness and development of knowledge-based economy whereas by the implementation of the business plan, it increases the company's profitability, creating a competitive advantage resulted from the innovative products and the efficiency of companies using the evaluation platform of human resources. The identified need on the market that a company wants to answer by implementing the plan is represented by the nationwide lack of a complex solution covering both the evaluation part and the management of human resources performance.

The novelty of the human resources evaluation solution proposed by the project is based primarily on three major contributions that have no equivalent at national level:

- The combination of assessment methods and indicators based on specific algorithms;
- The mode of monitoring the employee's behavior in the use of specific computer applications, and the recommendations for improvement through adequate training;
- Assessment algorithm of the replacement effort of an employee.

The management will be provided by the Director of the organization, who is also the administrator of the company and who will coordinate and verify the implementation of the provided activities, and also the way of conducting and reporting for each stage of the plan.

The Director will organize, coordinate and control the resources involved in the plan. The Director appointed by the company has experience in project management in the field of software development and IT services, being NATB certified in project management, having capacities of organization, communication, analysis and synthesis and prospective analysis.

Many international companies in Western Europe and the USA are starting to invest more and more in performance management of human resources software, often as part of a larger package of talent management (talent management software) in an effort to create automated solutions for human capital management. Such solutions integrate performance management, compensation, learning and development, monitoring objectives, succession planning tools, recruiting and many more.

2. Research Methodology

The methodology used can be found in analyzing and developing a strategy for preventing financial, human, market, marketing-image risks and also the physical ones. There were also used the economic contextual elements in order to achieve a SWOT analysis. The purpose of using technological support for performance management at individual level is to identify and minimize the gaps in performance between strategy implementation, improving and sustaining employee's performance, and to evaluate results in relation to the requirements and established targets. Most software solutions designed to meet individual management performance cover most of it the establishment, reviewing and evaluation of employees' performance, but it does not generate ways of improvement.

Through the management projects of employee performance containing functionalities for evaluation and monitoring training, the companies aim at achieving the following goals: increase individual performance in order to reach these objectives; developing learning skills and analytical thinking; initiating a market of performance management software; easy and quick exchange of information, development of continuing education; the development of alternative forms of education. The product offered by the company aims at facilitating the assessment of human resources at organizational level, both in terms of management, but also in terms of the act of learning. By improving the company's activity, by increasing employees' skills, relating the company's goals with individual *human resources assessment*, costs will decrease and revenues will increase by offering products/services of higher quality than the competition. In addition we may have *human resources assessment* by collecting information on performance.

3. Research Results

Considering the type of sold product, the company will use in the first period of 3 years the marketplace at national level. Considering also the local plans and strategies, an important source of growth and an objective to achieve on long term is supporting innovative SMEs and research sector. The Project promoted by the SMEs enrolls in this objective, proposing also an increase of the innovation degree at local level, and an economic growth in revenues from the sale of the developed solution.

The investment opportunity is granted also by the practicality of the solution for the customer at organizational level in order to increase performance and reduce costs allocated to human resources development. Given the economic context and reducing budgets for training personnel, such solution responds to the need for

continuous assessment and monitoring of the personnel, so that the competitiveness of the organization would be maintained at a high level.

Through the information portal and product promotion it will be taken into consideration the attraction of a number of customers nationwide who would opt for licensing the solution and the acquisition of related services.

The plus value on the developed solution is due also to the target group of customers, public institutions or private organizations, wishing to bring performance to an organizational level by continuous evaluation of human resource. The ongoing management of employee performance is supported also by an increased administrative quality. Also the affordable price of the human resources assessment solution can determine an orientation of organizations towards its acquisition, given the need to use such software tools correlated with the absence on the Romanian market of such a product.

Risk analysis in project implementation and post-implementation and countermeasures.

We considered the main risks grouped by categories:

- Financial;
- Human;
- Market;
- Marketing-image;
- Physical.

We analyzed the implications and prevention strategies that need to be applied.

Nr.	**Category**	**Description**	**Implications**	**Risk prevention strategy**
1	Financial risk	Lack of liquidity in key moments, taxing timely reimbursement of expenses, revenues inconsistent with the estimates	Some acquisitions may not perform as scheduled, wages cannot be paid on time, the services will not be paid on the agreed terms	Exceptional financial statements, shareholders will ensure the capitalization of the company and they will replace any illiquidity. Drawing with care and responsibility the documentation for the reimbursement of expenses

Nr.	Category	Description	Implications	Risk prevention strategy
2	Human Risk	Changes in the organizational structure of the institutions involved in the project	Important decisions are not taken in time. There are unidentified the persons / groups that could confirm / clarify some issues.	Project support at the highest level through a continuous relationship with the involved institutions
3	Human Risk	Lack of project management skills within the team of the beneficiary.	There are delays and unduly administrative effort. Lack of decision, even if their significance is not major.	100% involvement of the project manager in managing the project activities, a management developed according to the methodologies assimilated in specializations (NATB certification). Clear delineation of roles and responsibilities; emphasizing the importance of insisting on basic activities and streamlining the administrative aspects. Defining clear responsibilities within the project management team

Nr.	Category	Description	Implications	Risk prevention strategy
3	Human Risk	Insufficient staff required by the company for the research and development activity of IT solutions	Loss of "focus" on the project deadlines, delays, additional costs.	Creating an association between the profiles of experts and planning resources in the project and in general. The allocated resources and their availability for project activities will be guaranteed at the highest level in the organizational structures of the beneficiary.
4	Human Risk	Low results of employees, lack of loyalty and information leakage, low professional capacity, withdrawal from the project of service providers / staff	Loss of "focus" on the project deadlines, delays, additional costs.	Hiring, salaries and motivation will be conducted by the project manager who has extensive experience in recruiting, training coordination and creating new teams Contracting service providers will be made by the project manager who has extensive experience in negotiating and purchasing services
5	Human Risk	The allocated resources are involved in several projects / activities and they cannot cope physically in the peak periods.	Delays, frustrations of staff, decreases in efficiency, additional cost.	Using within the project qualified and experienced resources fully allocated to this project. Early warning of the financier when these risk situations arise.

Nr.	Category	Description	Implications	Risk prevention strategy
6	Human Risk	Reviews and approvals of documents that are not made on time	Delays, frustration within the team; non-fructifying synergies with related projects	A warning system involves all groups involved and it will be backed by a schedule containing the control and decision points. It will be available since the initial report.
7	Human Risk	Non-assuming and non-supporting the proposed plan	Deviations from the project schedule and implicitly the budget	Frequent reports of project status. Frequent plan updates and revisions of dependencies between activities and reallocation of resources. Planning reserves in relation to the degree of certainty of the project.
8	Physical Risk	Launching in production cannot be performed due to lack of hardware and / or software components or due to problems occurring during their operation	The entire project effort cannot be exploited.	Strict control of the test environment; using the test environment only of the purchased components for production. The careful check of hardware and software requirements. Periodic assessment of the beneficiary on the state of hardware and / or software and the timely solving of the problems.

Nr.	Category	Description	Implications	Risk prevention strategy
9	Market Risk	Unfavorable response from customers to the products created by the beneficiary, thus advancing the competition through lower prices or superior products, the loss of a certain customer category, changing the environment in which the firm operates from the political or legislative point of view	The targeted customers do not buy the solution, the impossibility of sustaining the durability period, failure of achieving the assumed indicators	It will be developed a communication plan where it will be shown to customers the benefits of implementing the solution. The solution will be optimized according to the customer's needs. Performing periodically a market research and product and orientation of the products to new requirements, all performed in real time. The use of competitive prices. Sustaining the selling effort with people with experience in selling software solutions, but also in the targeted specifics: performance management
10	Marketing – image risk	Insufficient promotion of the product	Lack of sales	It will be developed a marketing plan for marketing the product, it will be targeted the potential customers through various methods and there will be chosen the proper ways of promotion, according to the environment and economic demands.

In the elimination of all risks mentioned above, an essential role it has the professionalism and the involvement degree of staff, each in its field of competence.

SWOT Analysis

Strengths

- Single management system of employee performance that includes specific assessment features, the non-existence of functionalities on the market in one solution.
- New investment of company will increase the development capability of the product: human resources assessment and it will increase the net profit.
- The company offers complex solutions for medium and large companies at affordable prices and thus being able to attract more customers.
- The existence of a product certification by OSIM, which grants a competitive advantage to the company.
- Building a positive image about the company through market introduction of complex solution at an affordable and competitive price.
- The acquired team of specialists (know how).

Weaknesses

- Vulnerability to competitive pressures, especially in the area of big international suppliers;
- Financing capacity.

Opportunities

- The existence of demand for new products at competitive prices;
- Opportunities to expand the offered services;
- Possibility of concluding advantageous agreements;
- The mandatory tracking of performance indicators, according to new Labor Code updated with changes and additions by the Law no. 40 of 31 March 2011, entered into force on 1 May 2011.

Threats

- Stagnation in a period of economic recession at national level;
- Unfavorable demographic and economic changes (reducing the number of employees);
- The entry of new competitors on the market;
- The increase of negotiating power of suppliers and / or customers.

4. Conclusion

The general objective of the proposed project is to create an added value through research and innovation in human resources performance management based on

information technology. Our project proposal is based on a research and development results obtained by a company in the human resources performance management based on software.

Many international companies in Western Europe and the USA are starting to invest more and more in performance management of human resources software, often as part of a larger package of talent management (talent management software) in an effort to create automated solutions for human capital management. Such solutions integrate performance management, compensation, learning and development, monitoring objectives, succession planning tools, recruiting and many more.

In conclusion, there are no software solutions at the national level, which would assess the human resources of an organization, following the specific indicators of the organization, that combines assessment methods in order to achieve more efficient and multilateral assessments, which would monitor the activity of the assessed on a well-defined period of time and it would calculate the effort of replacing human resources within some organizations. All these features, which bring an innovative degree on the Romanian market, are found in human resource assessment solution that we develop. According to the SWOT analysis one of the strengths of the company is the existence of a single management system of the employees' performance assessment that includes specific features, functionalities which do not exist on the market in one solution. Similar solutions to human resources assessment, which cover only partially the functionalities, are found at international level, but at very high prices and they are still inaccessible to companies at local level (it requires adaptation, translating the user manuals, costly implementations, etc.).

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6. Bibliography

Amrit, Tiwana (2001). *The Essential Guide to Knowledge Management, E-Business and CRM Applications.* New York: Mc Graw Hill.

Stanciu, Radu; Momete, Daniela & Radu, Corneliu (2000) *Managementul resurselor umane*/*Human resources management.* Bucharest: BREN.

Van Scoy Roger (1992). Software Development Risk: Opportunity, Not Problem. *Software Engineering Institute Review*, September.

Opran, Constantin (coord.); Stan, Sergiu; Năstasă, Steluţa & Abaza, Bogdan (2002). *Managementul proiectelor/Projects management.* Bucharest: Comunicare.ro.

Burlton, T. Roger (2001). *Business Process Management, Profiting from Process.* Indianapolis: SAMS.

Wideman, Max R. (1999). Fundamental Principles of Project Management. *Project Management Forum, Digest Volume* 4, no. 7, July.

***(2003). Cum să obţii finanţare de la Uniunea Europeană/How to get funding from the European Union*. Programe ale Uniunii Europene în România/Programs of the European Union in Romania.*

Tureac, Cornelia (2013). *Managementul resurselor umane/ Human resources management*. Galati: Zigotto.